Cunoaştem

INFRASTRUCTURA

Poduri inovative modulare în alcătuire compusă oțel – beton aplicate în România

Prin dialog începe totul…
Everything starts with dialog
Dialog ist der Anfang von all…

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Soluţii noi eficiente pentru poduri. Obiective:
New efficient solutions for bridges. Targets:

– sisteme modulare
– *modular systems*

– simplitate şi rapididate în execuţie
– *simplicity and short execution time*

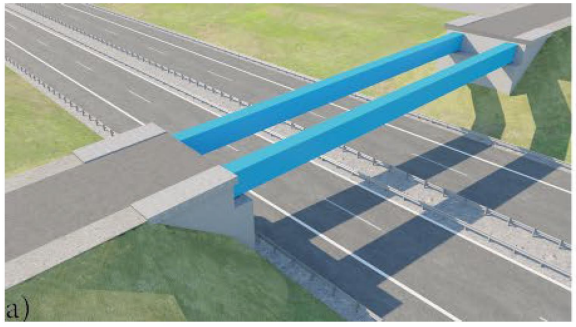
– robusteţe structurală
– *structural robustness*

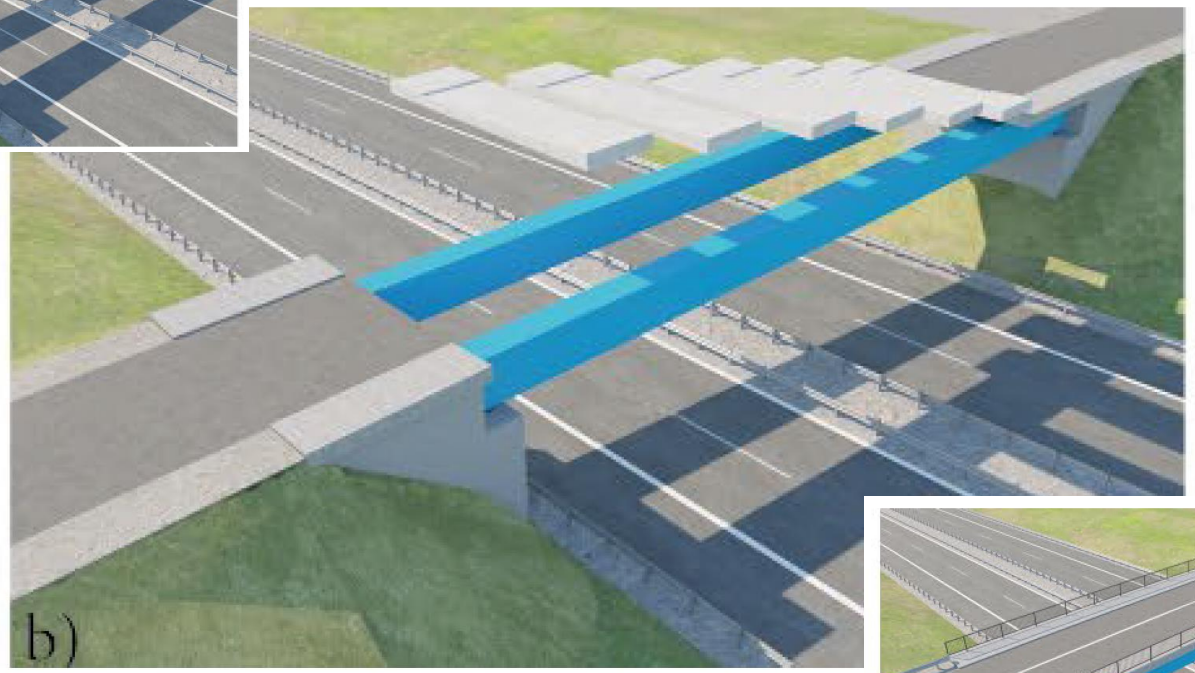
– mentenanţă facilă, costuri de întreţinere reduse
– *facile and cheap to maintain*

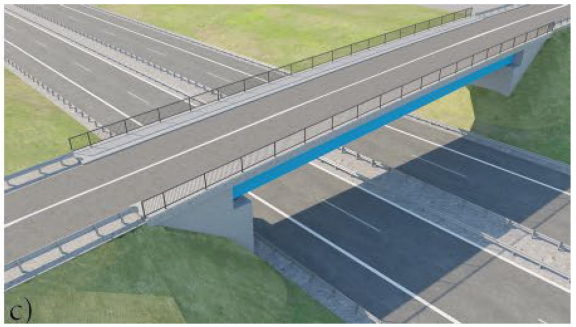
– reducerea impactului asupra mediului
– *reduced environmental impact*

– respectarea termenelor de predare
– *respecting the imposed deadlines*

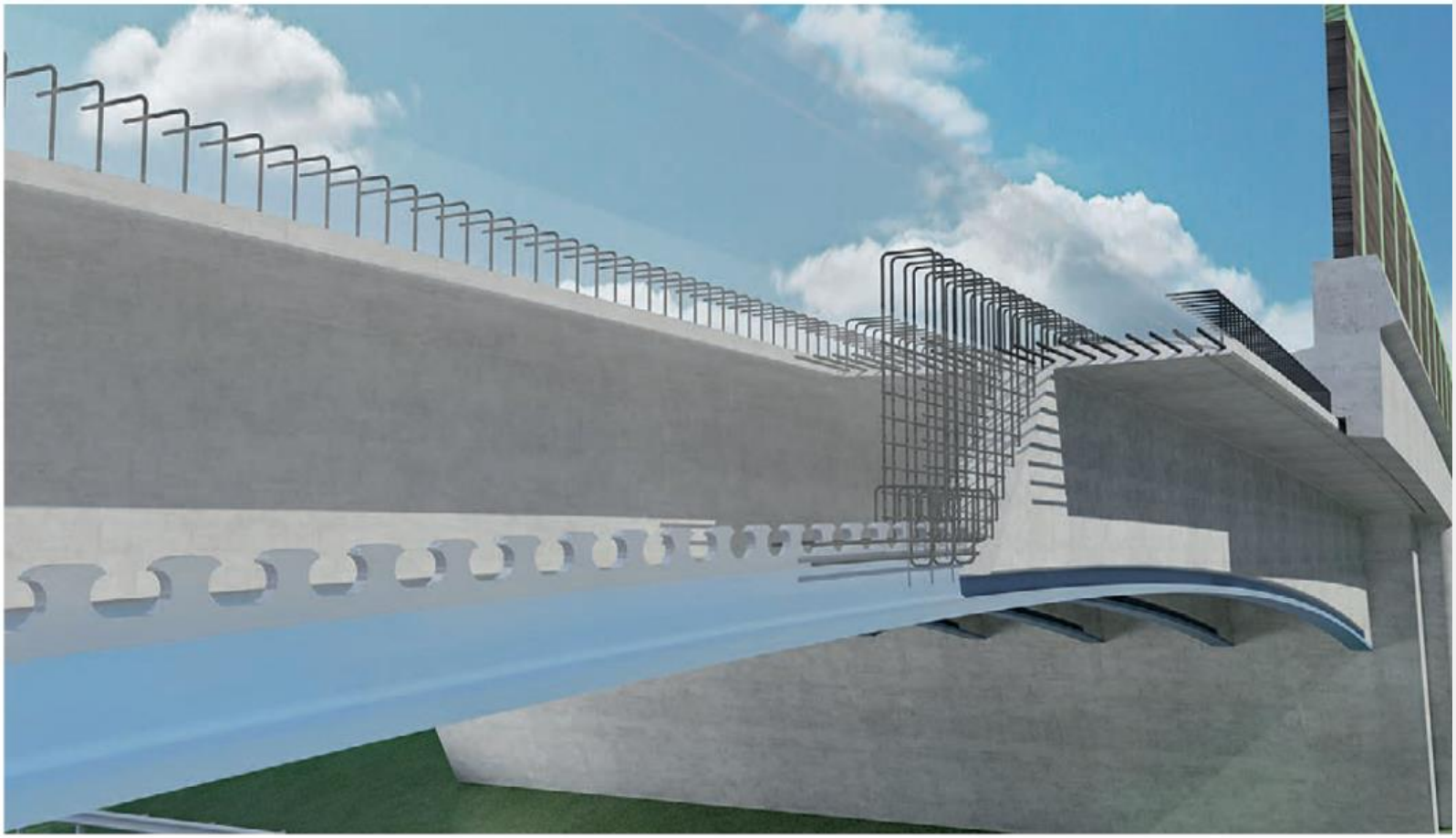
SSF Rapid





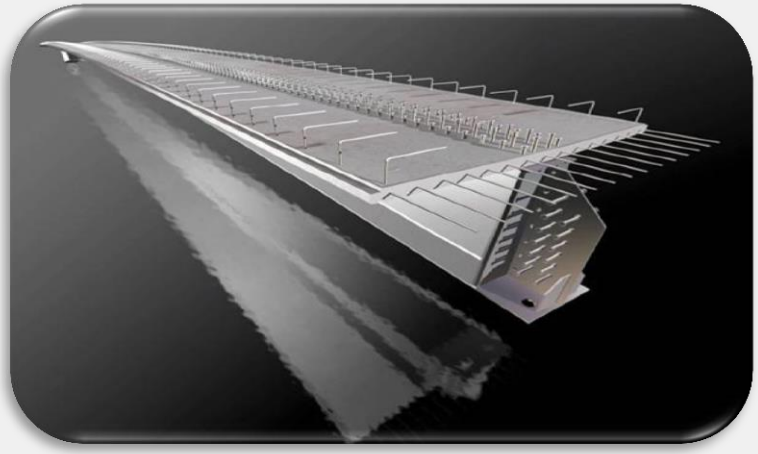


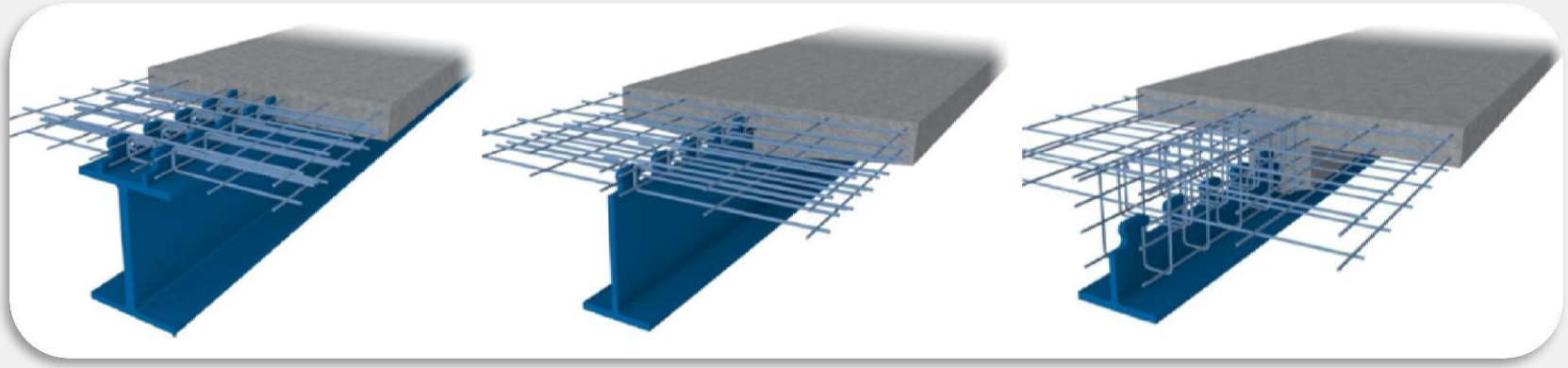
VFT-WIB®



VFT-WIB®

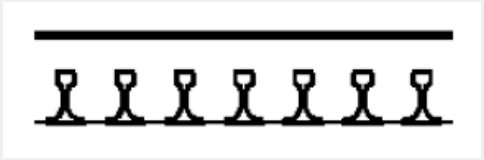
✓ **Soluțiile VFT și VFT-WiB**





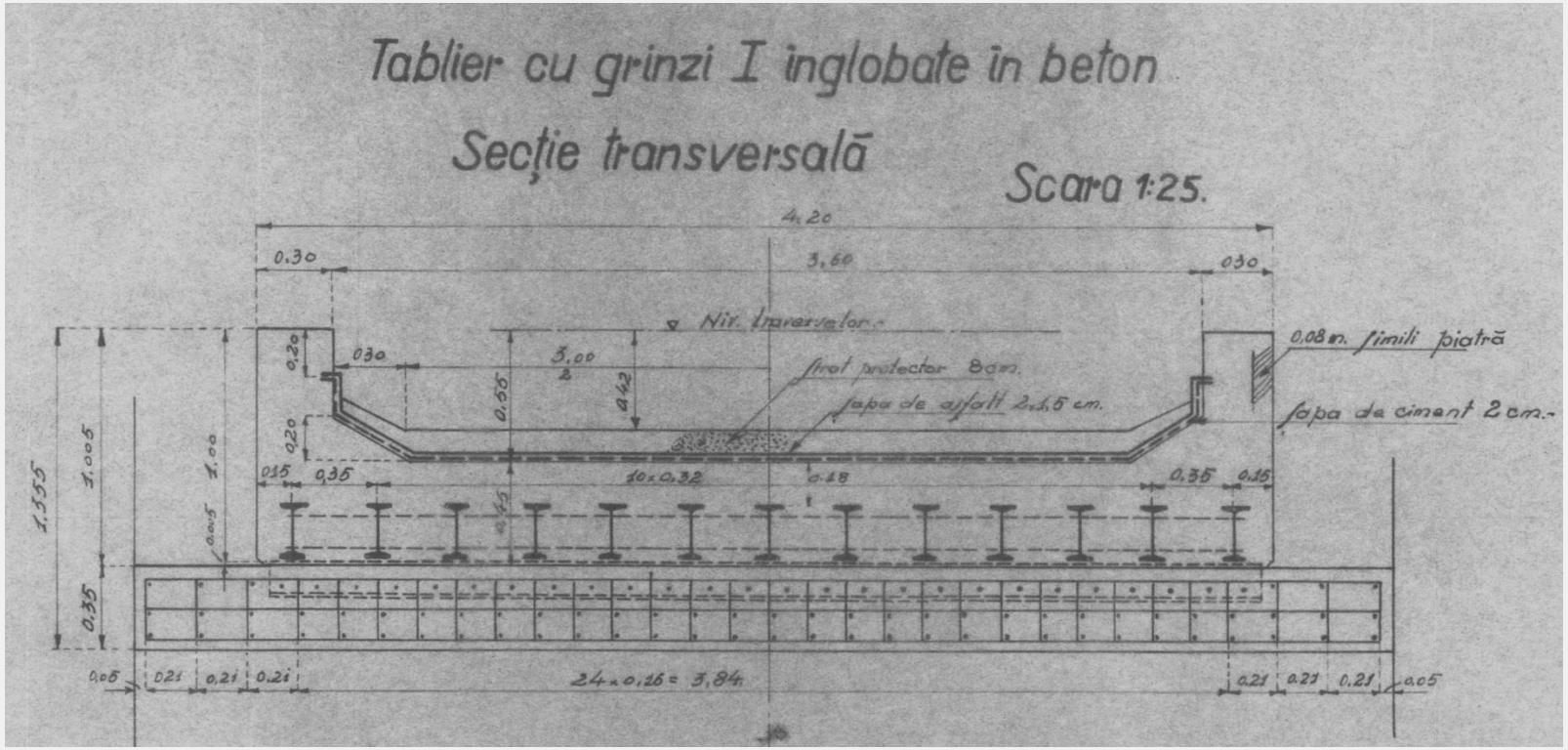
Soluţii noi eficiente pentru poduri.

Soluţia iniţială 1900

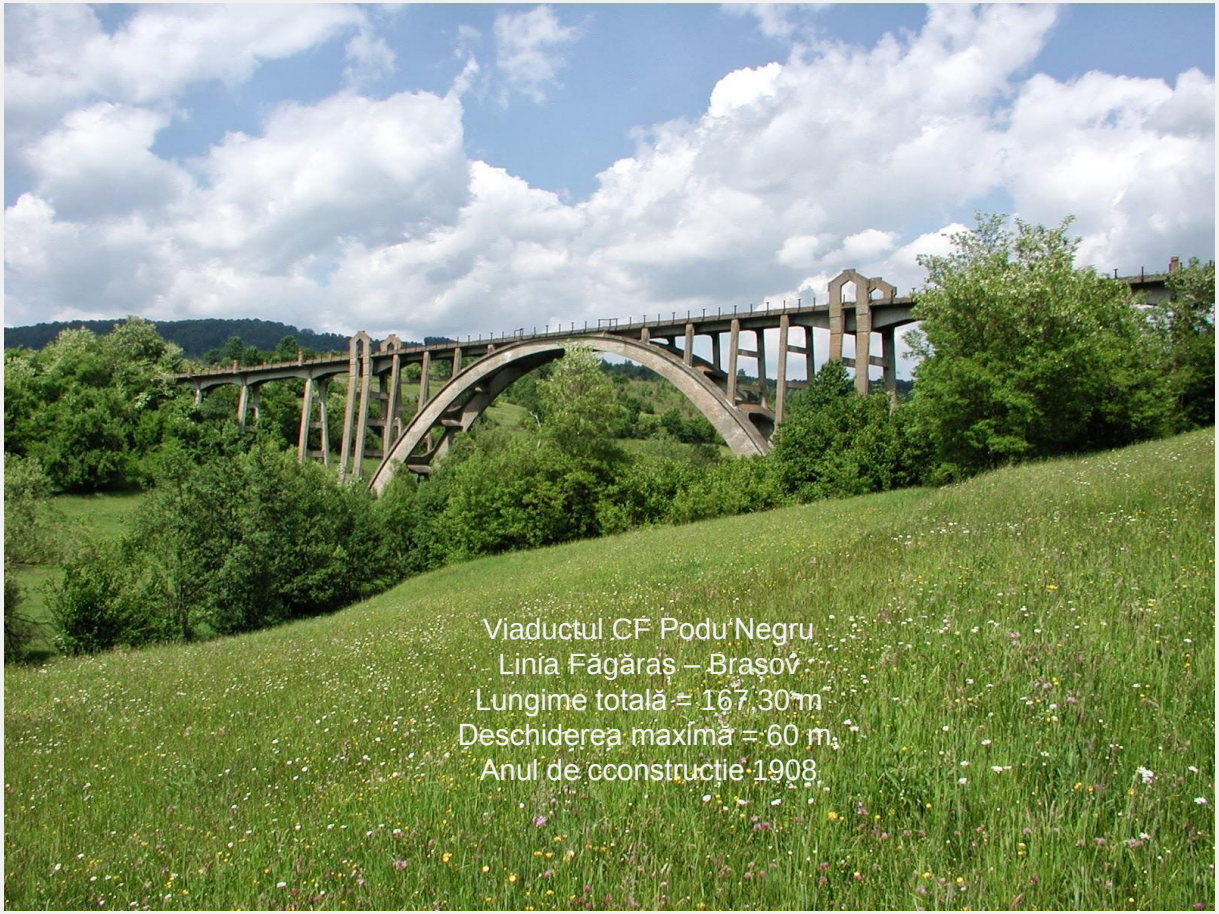


Soluţii noi eficiente pentru poduri.

Soluţia GIB 1937



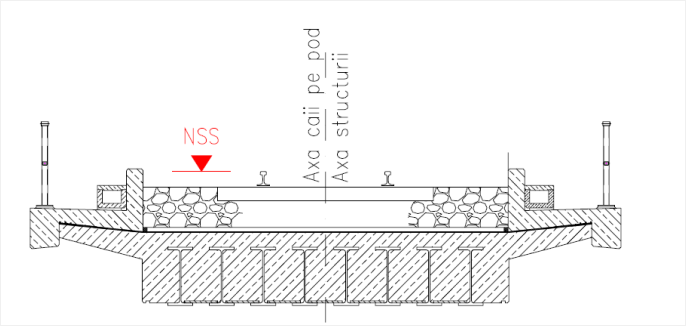
Inovație



Viaductul CF Podu Negru
Linia Făgăraș – Brașov
Lungime totală = 167,30 m
Deschiderea maximă = 60 m
Anul de cconstrucție 1908

Soluţii noi eficiente pentru poduri.

Solutia GIB - >1980



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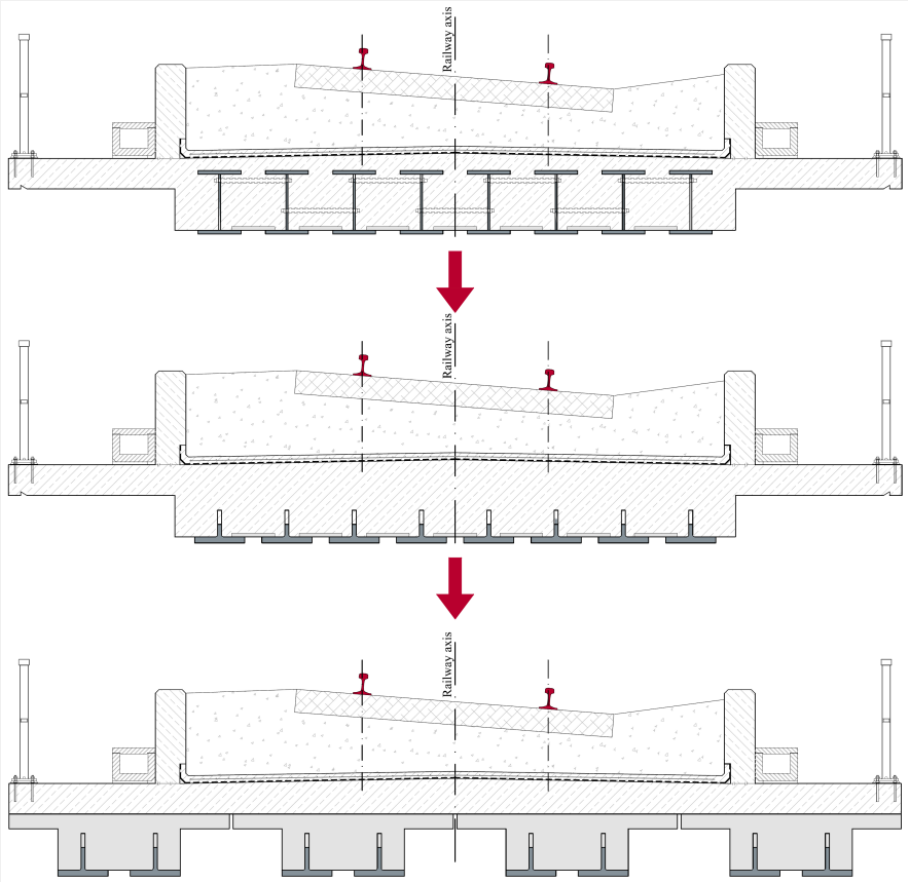

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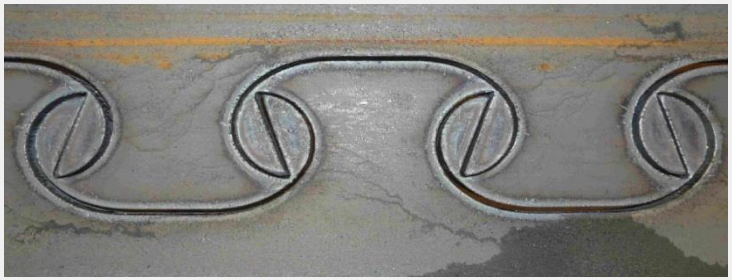
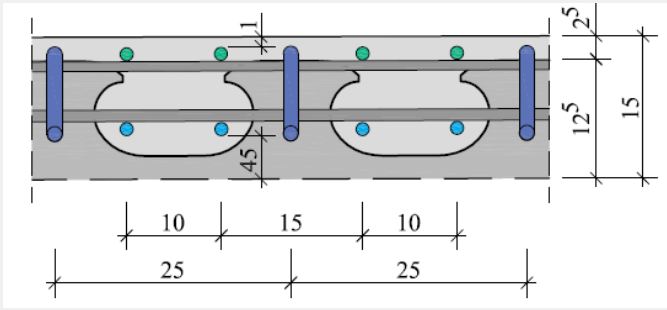
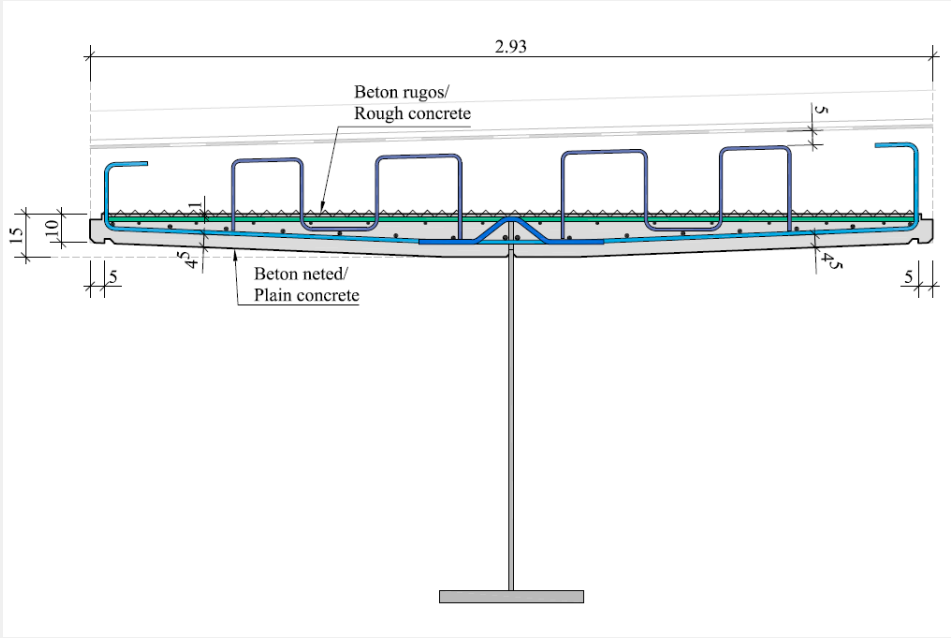
VFT în România

Soluţii noi eficiente pentru poduri.

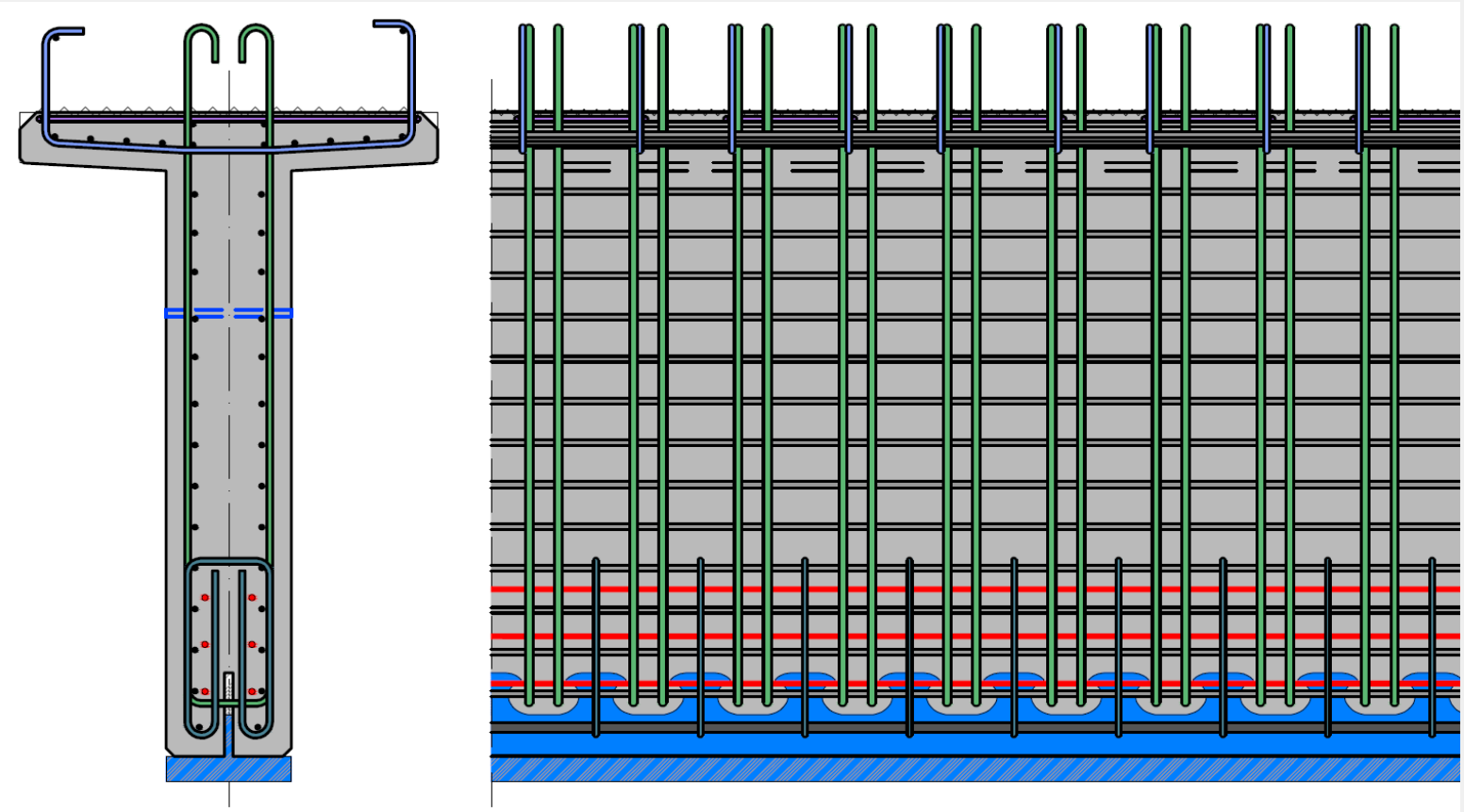
Soluţii noi eficiente pentru poduri.







VFT-WIB®



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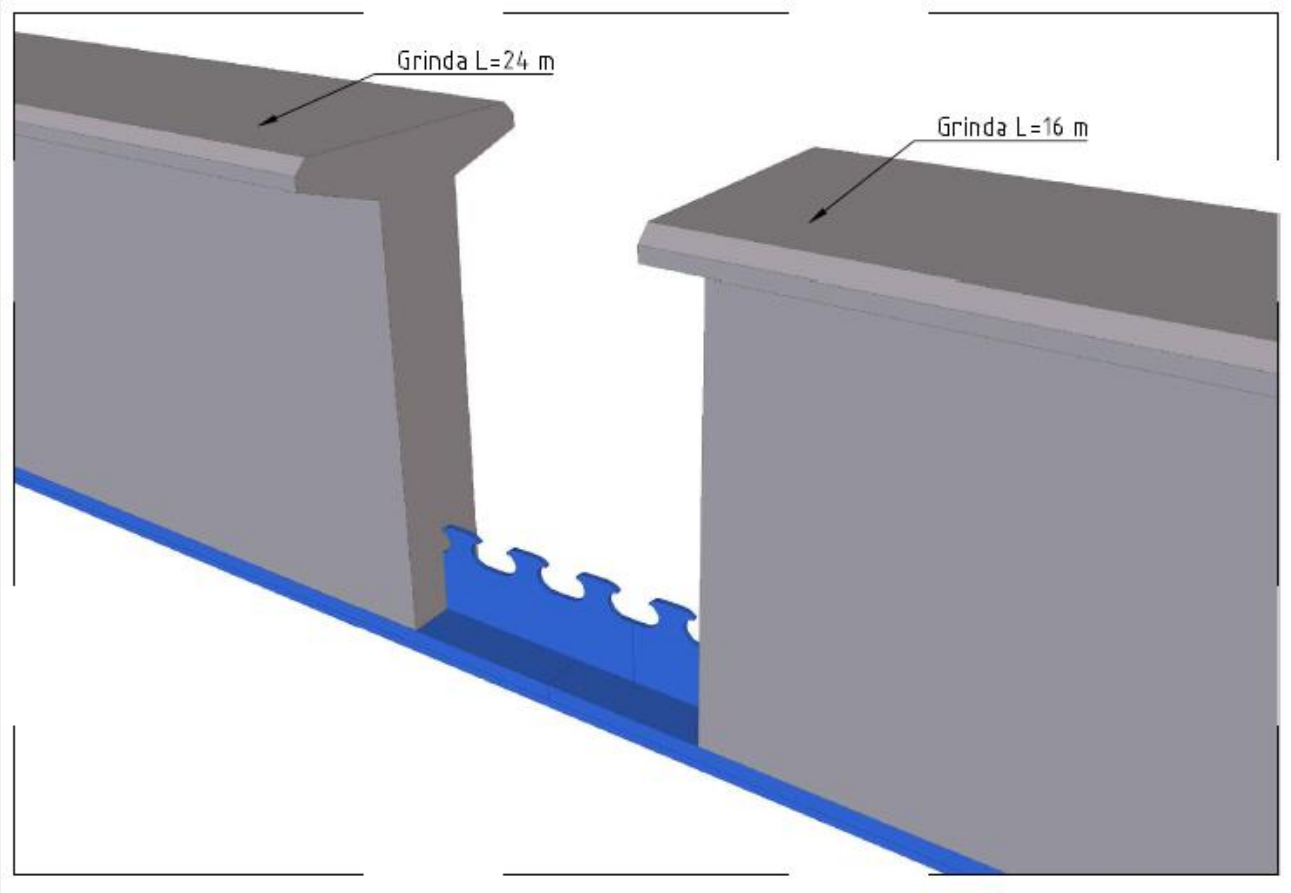

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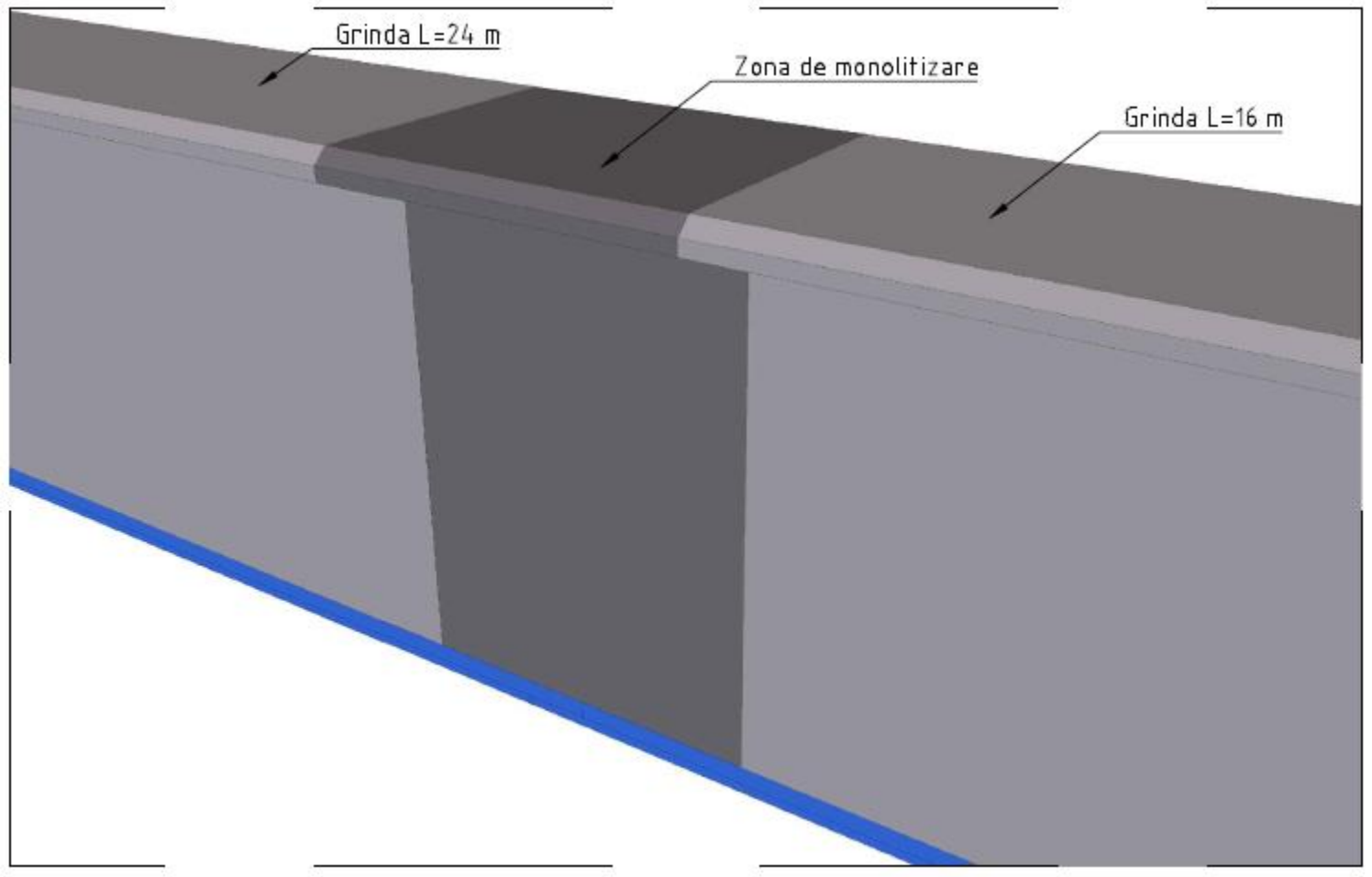

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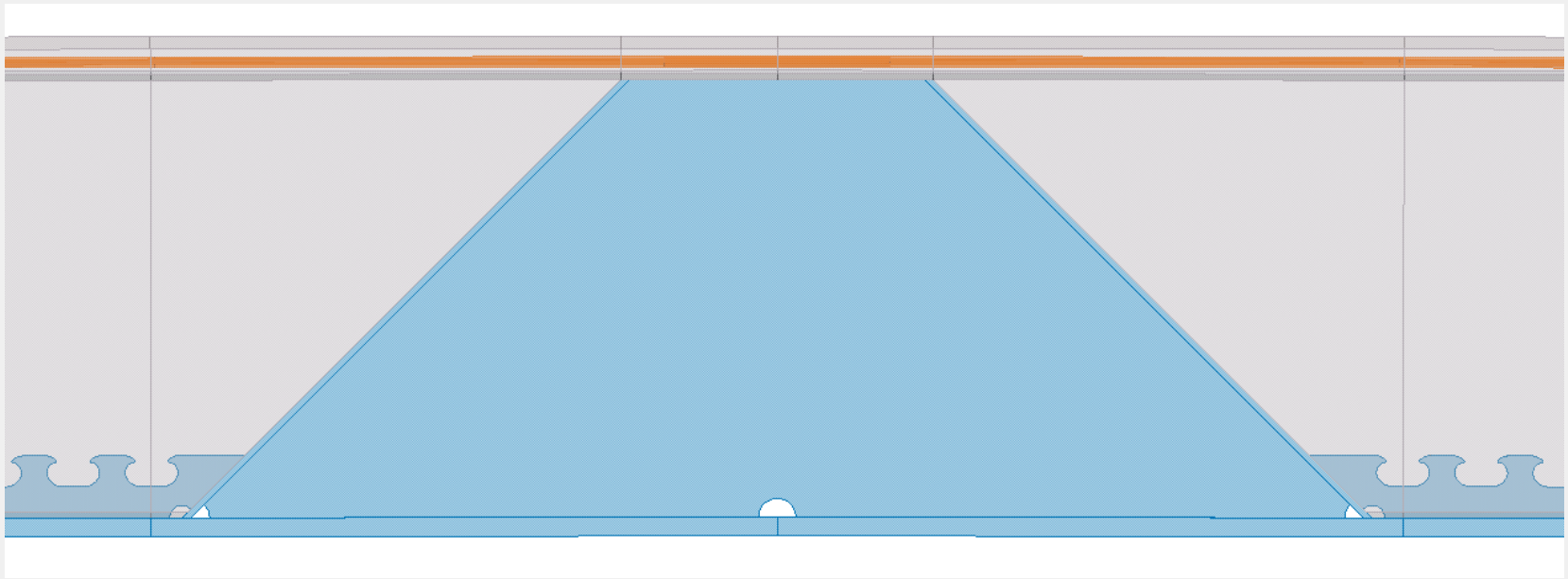

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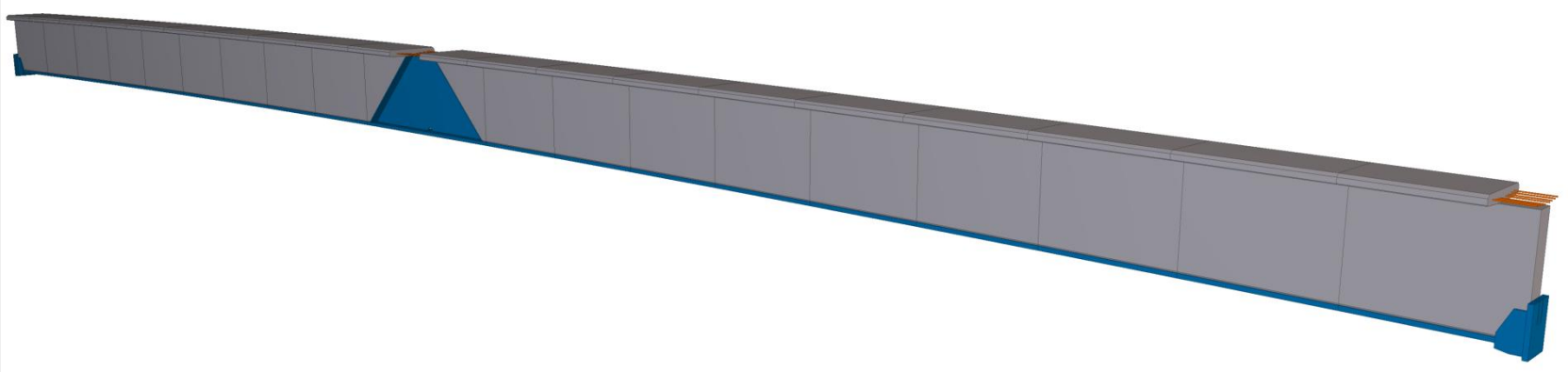

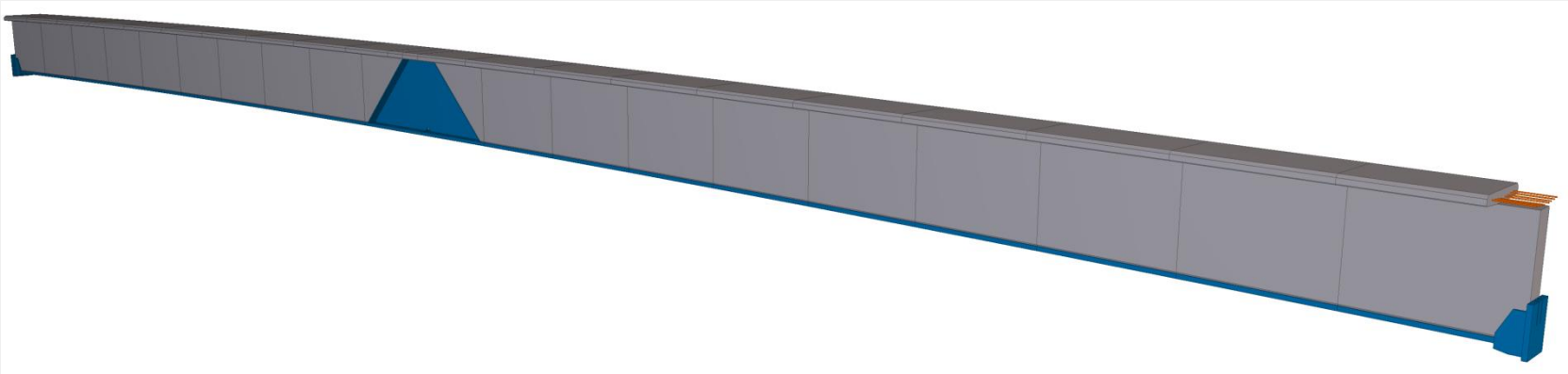

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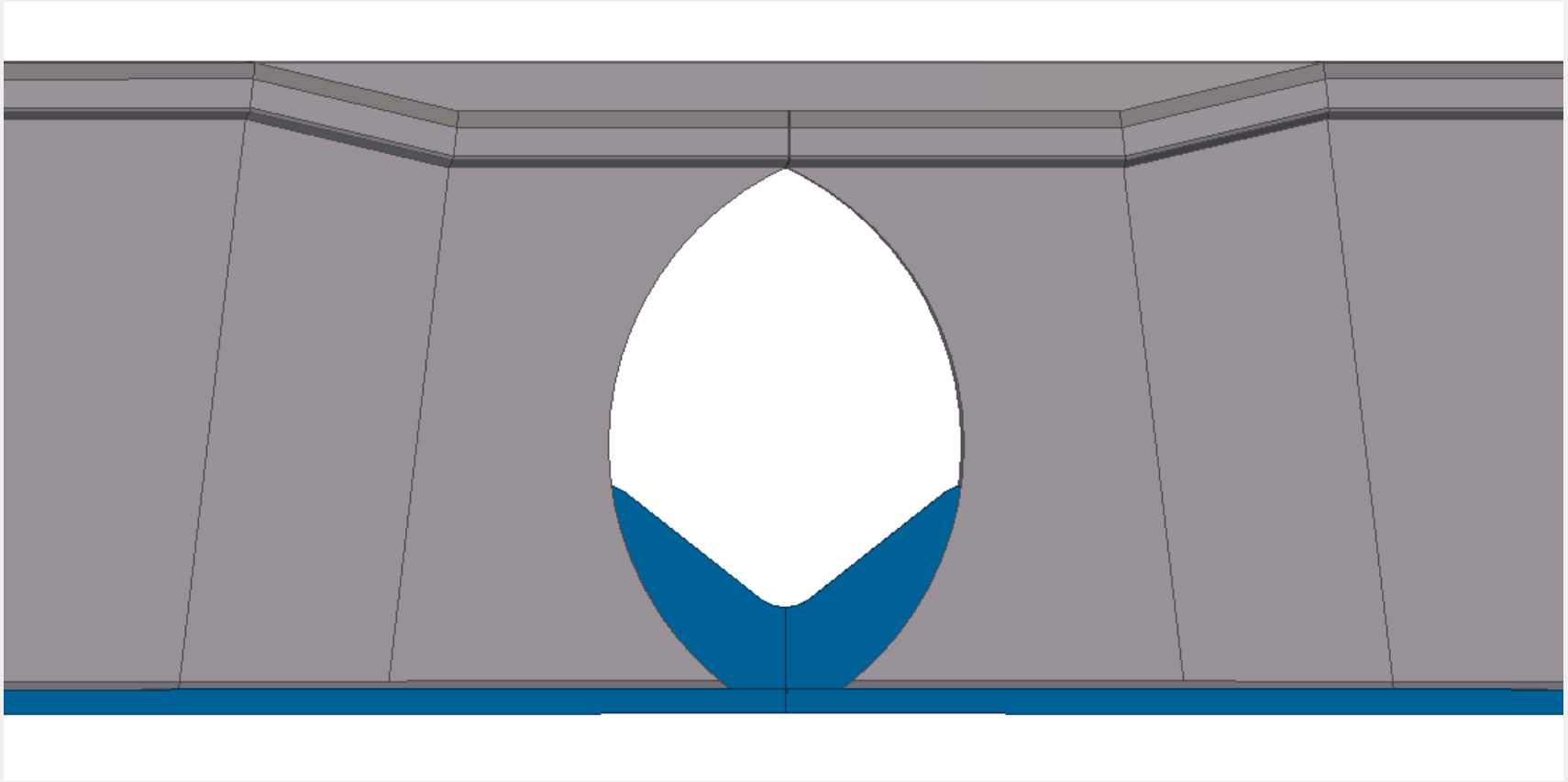

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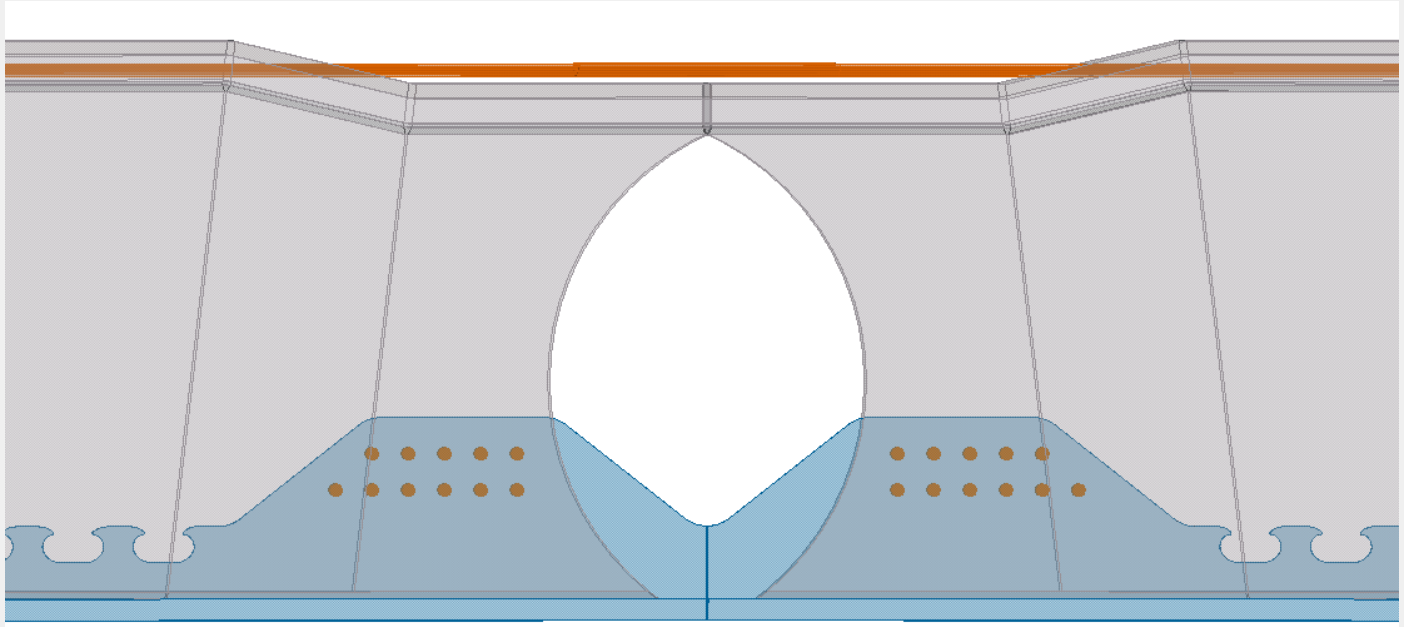

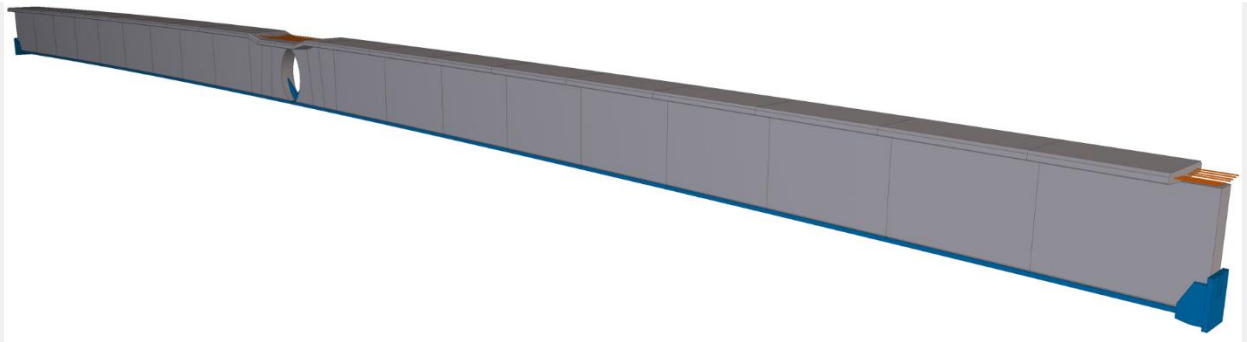

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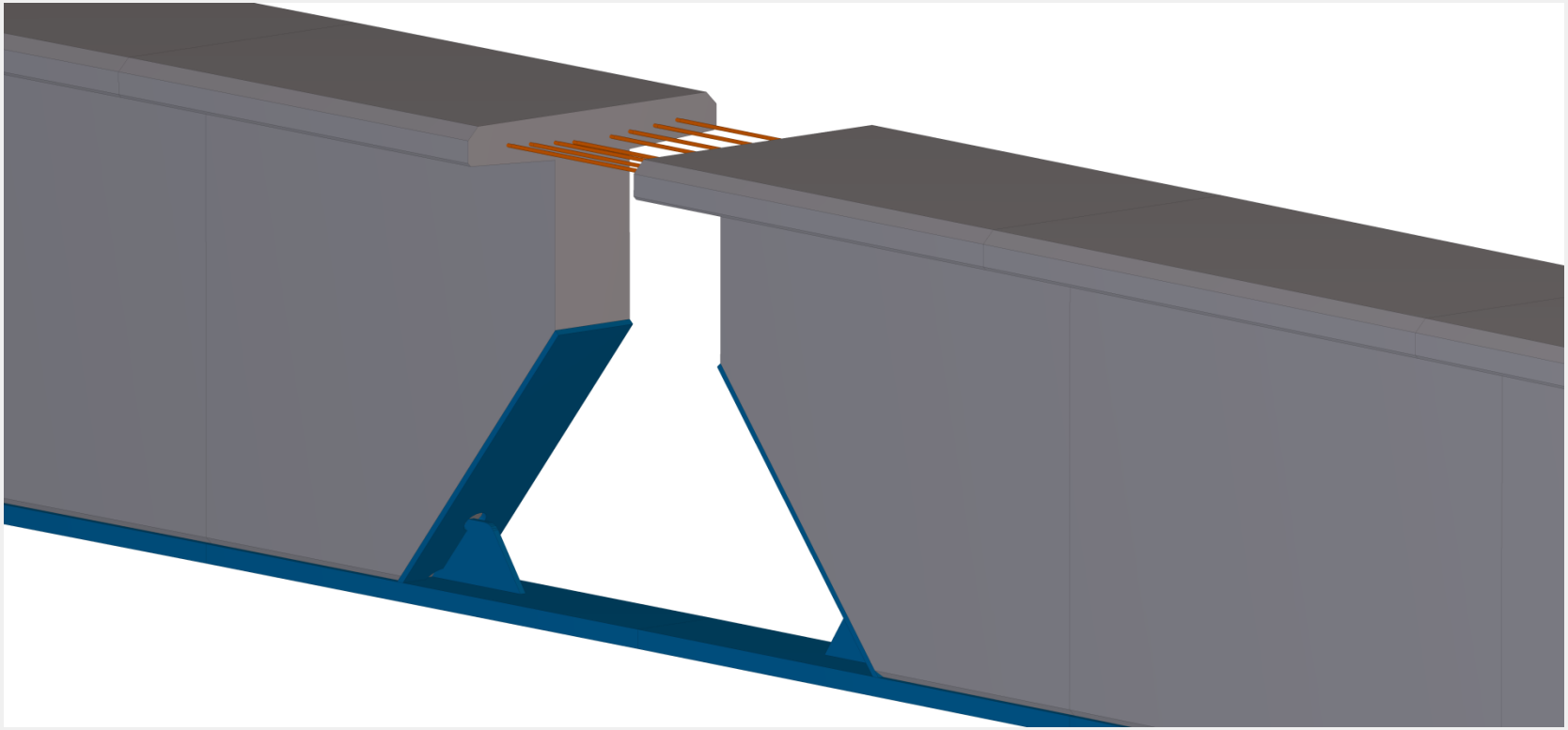

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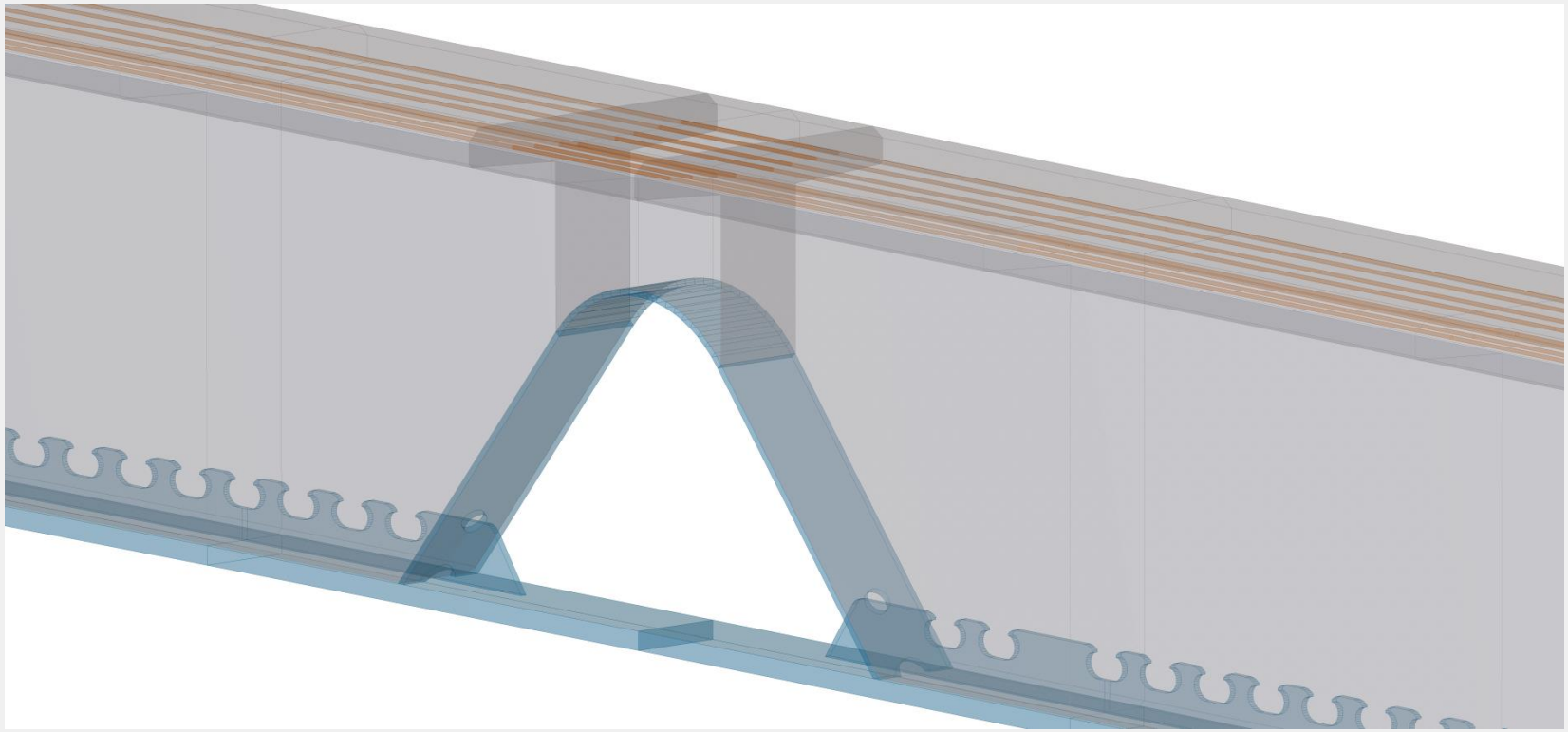

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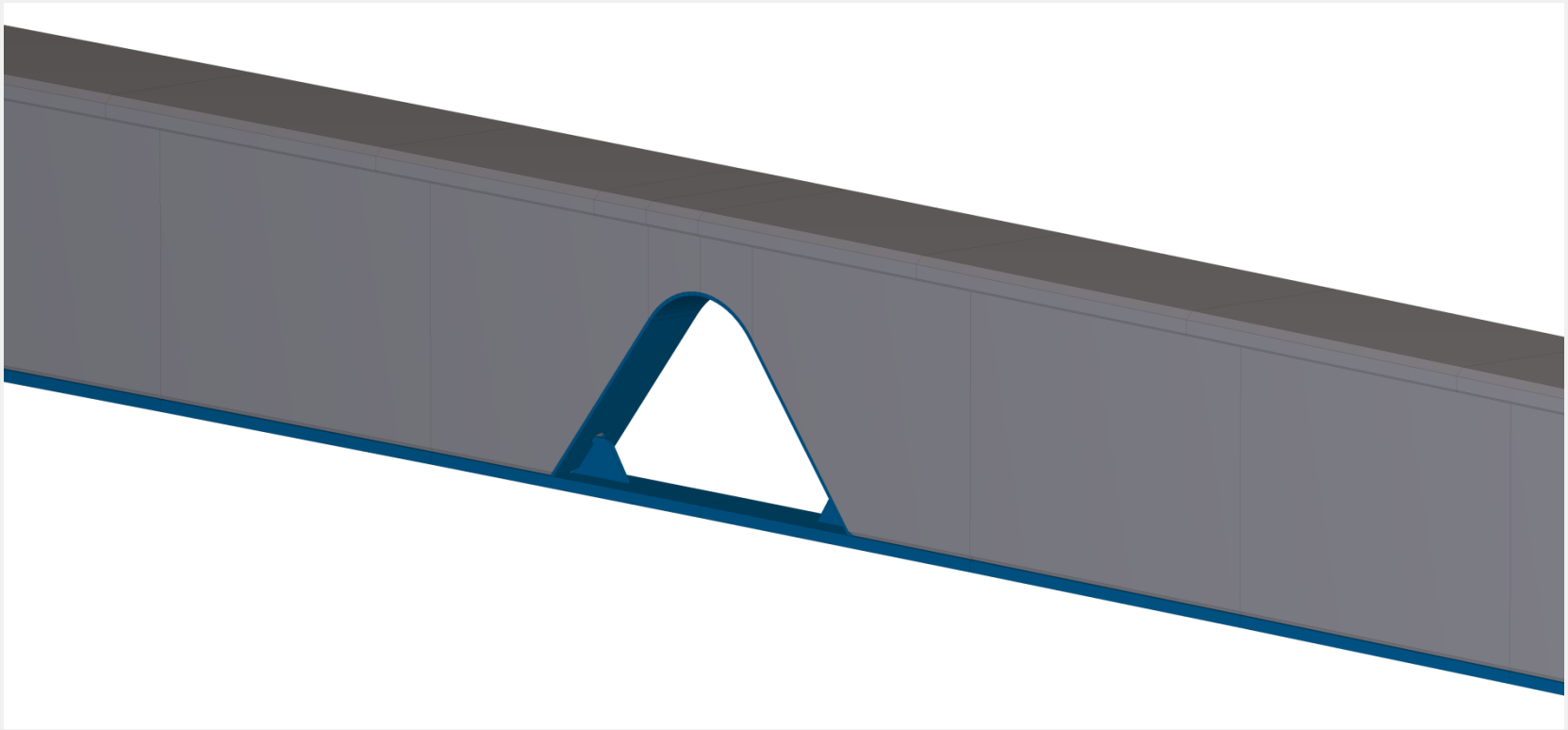

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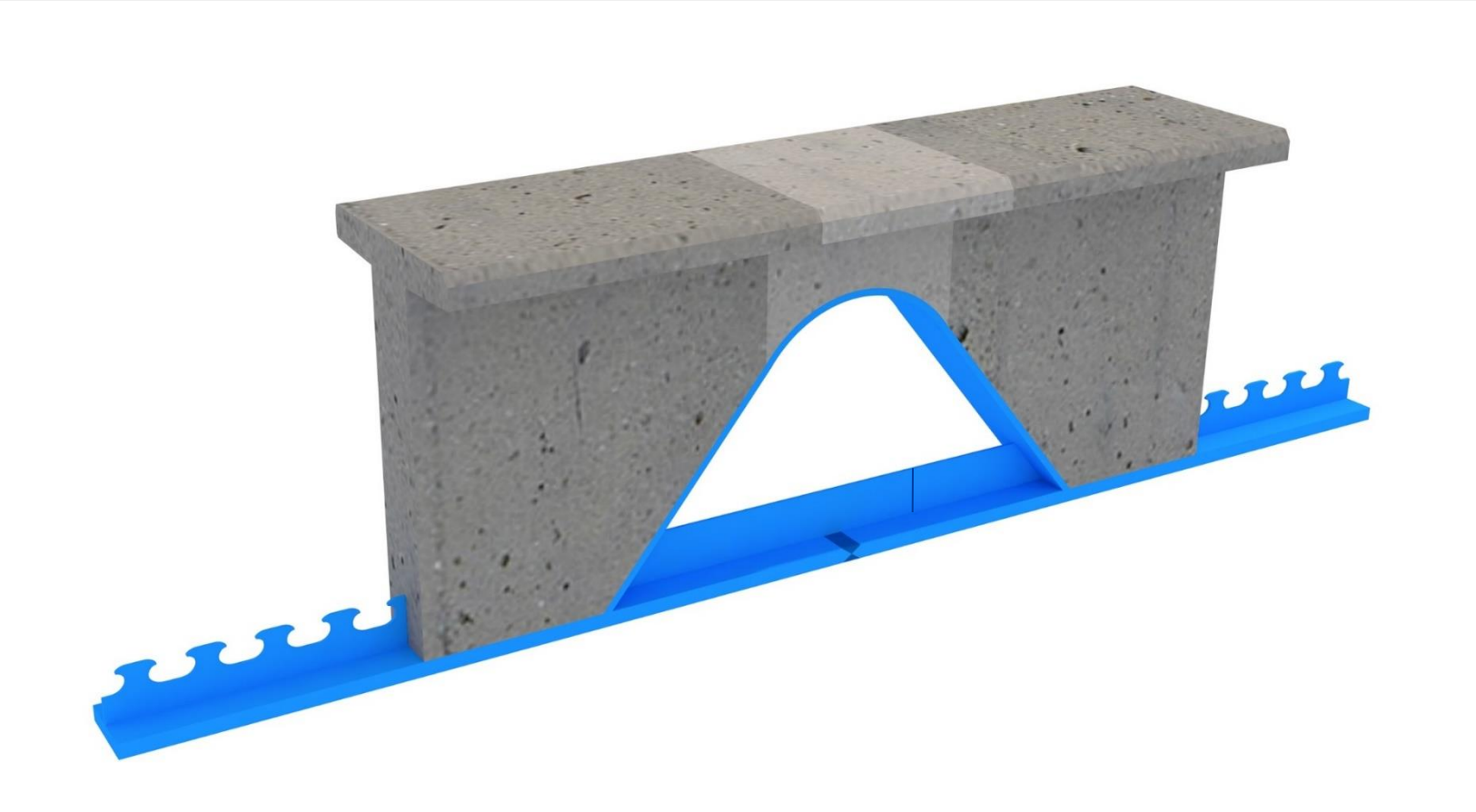

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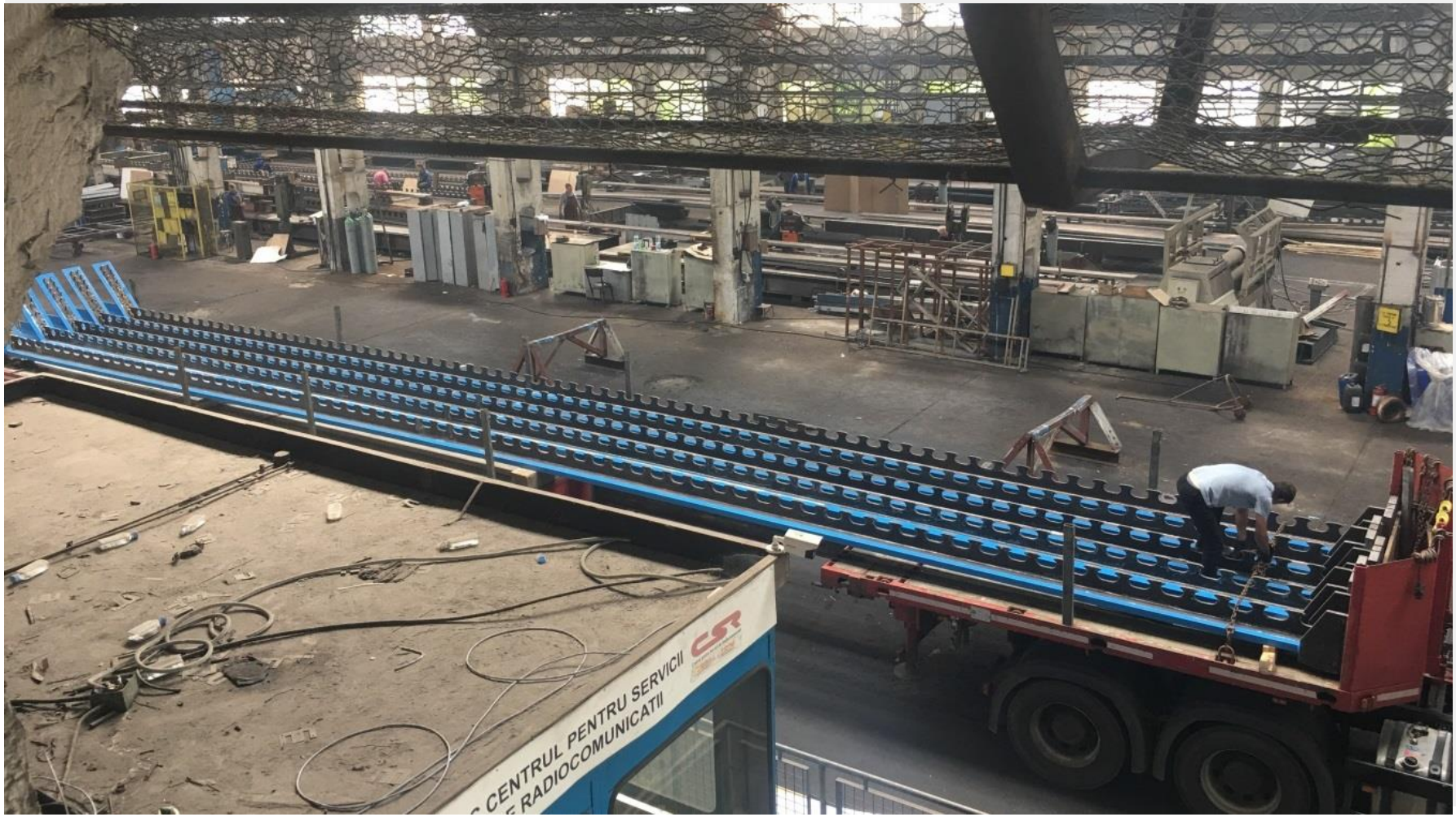

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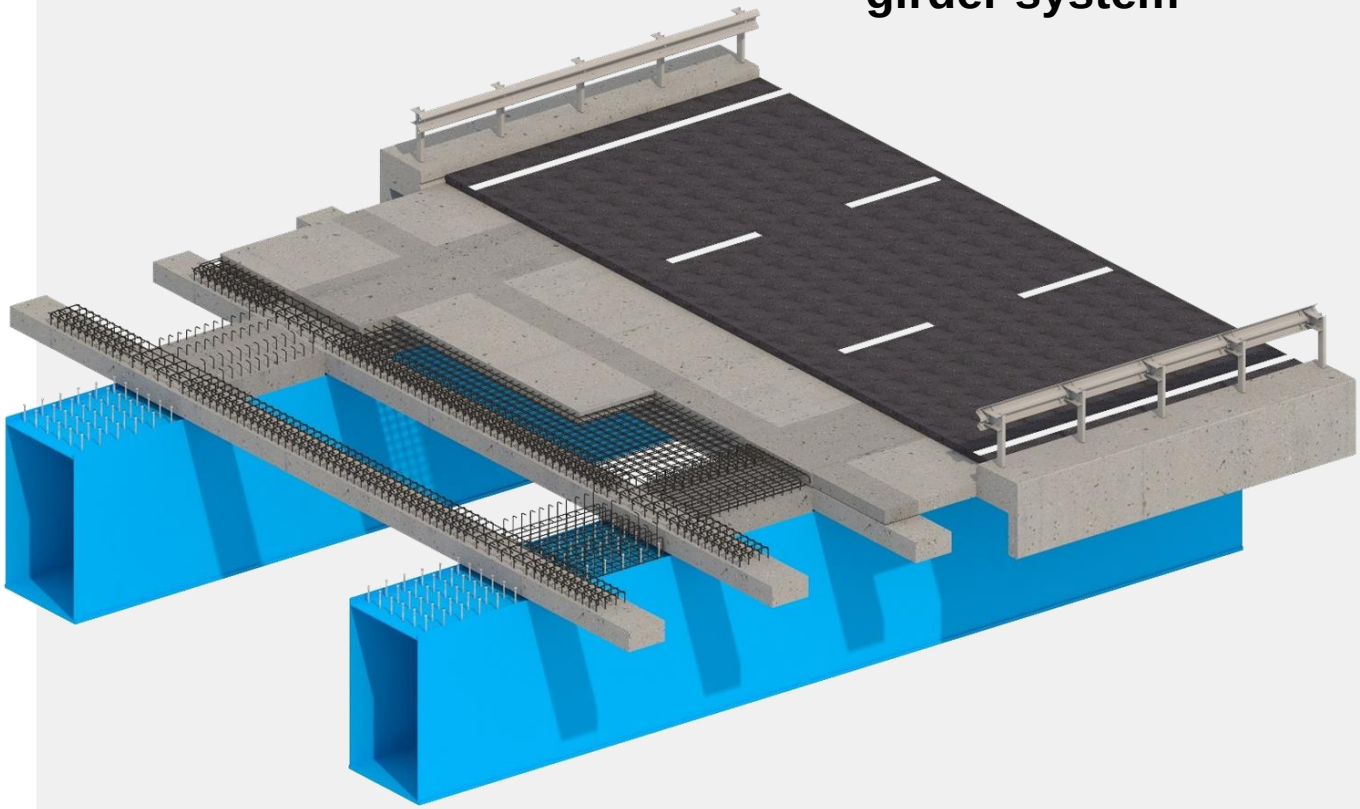
VTR System

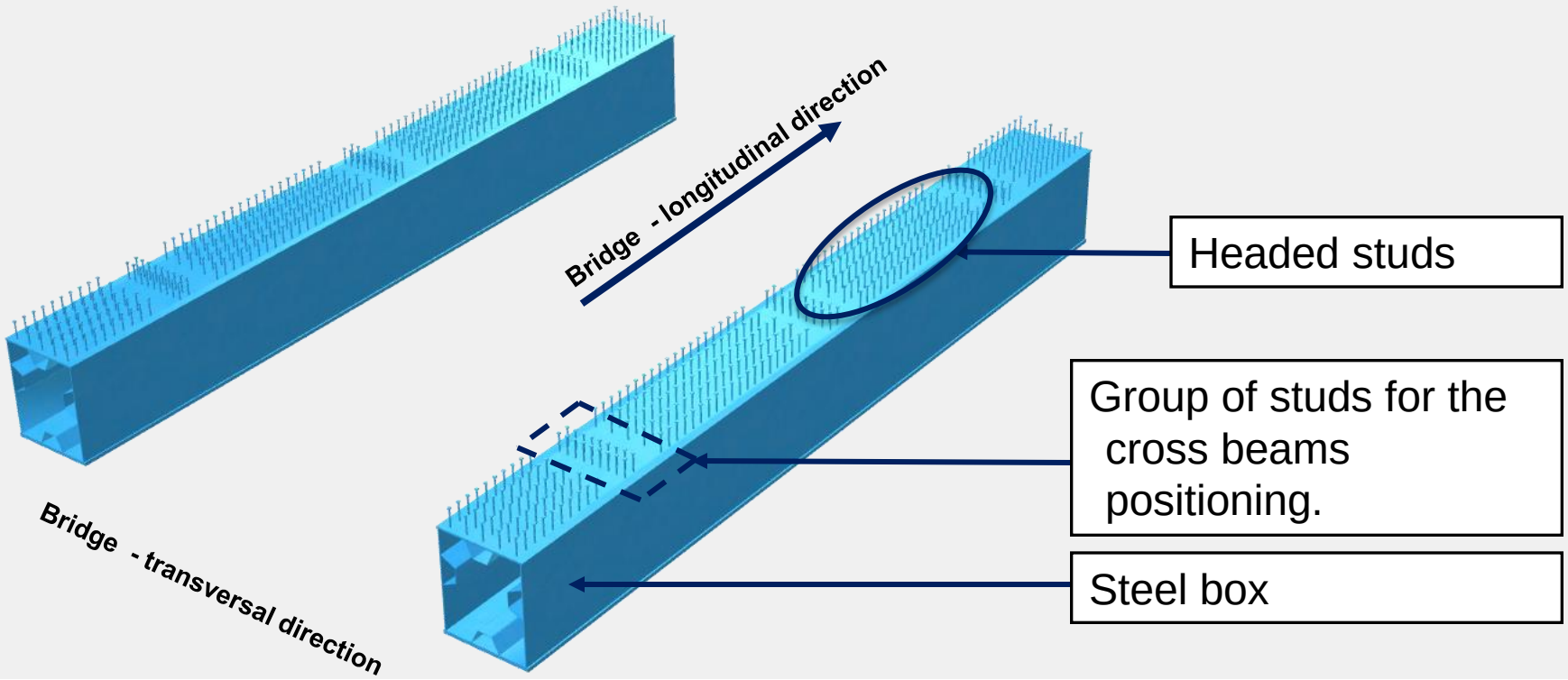
Verbund-Träger-Rost

Composite bridge with an intermediary girder system



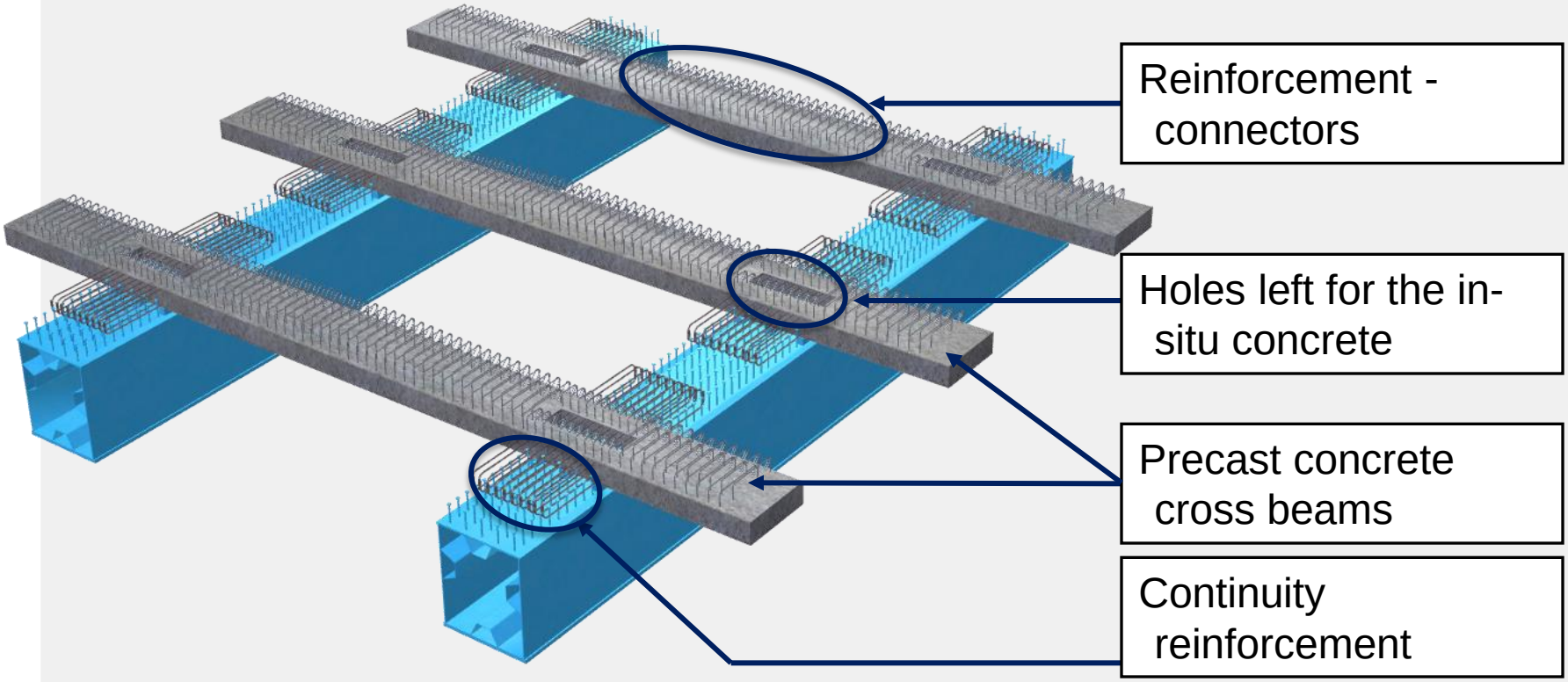
VTR System

1. Steel main girders



VTR System

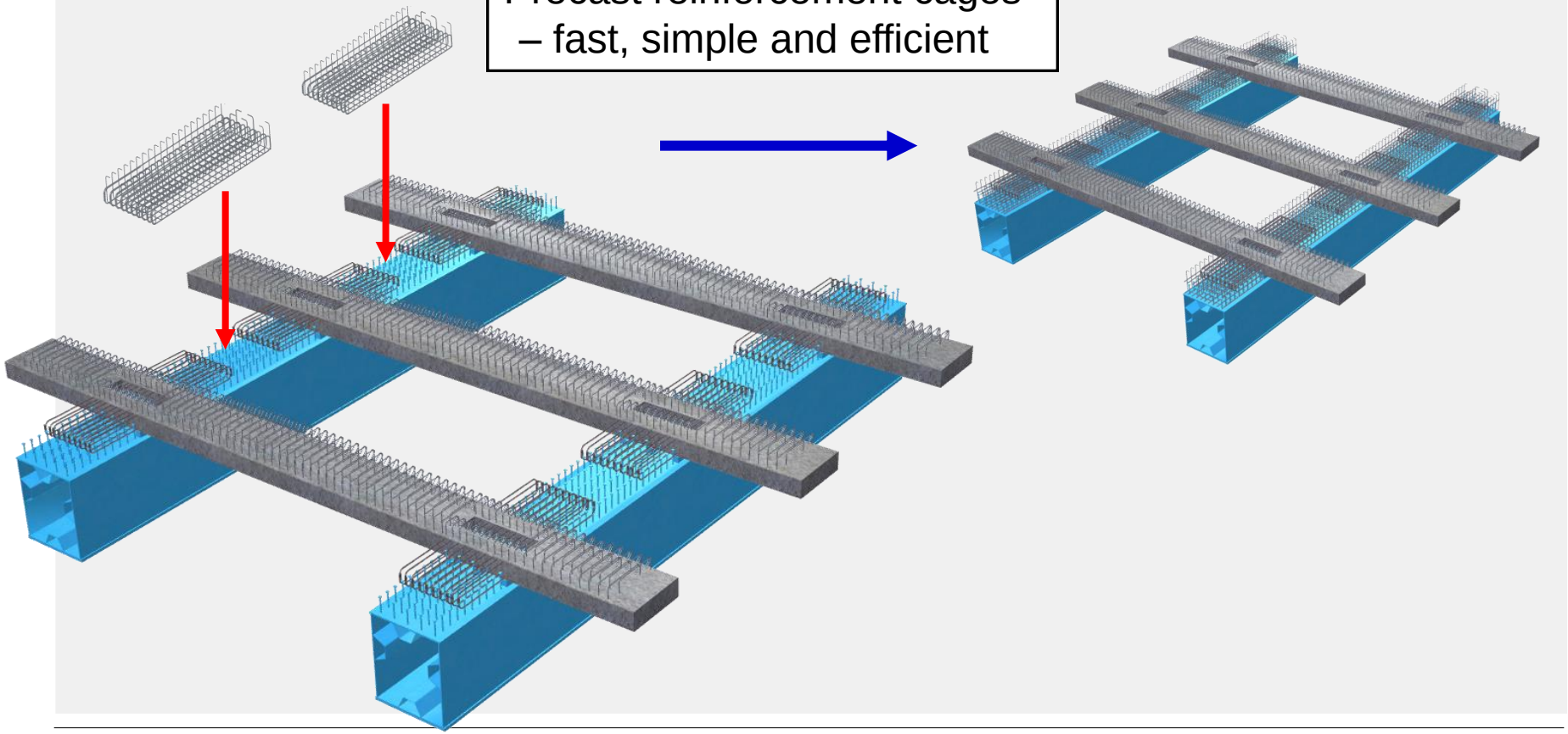
2. Prefabricated cross beams



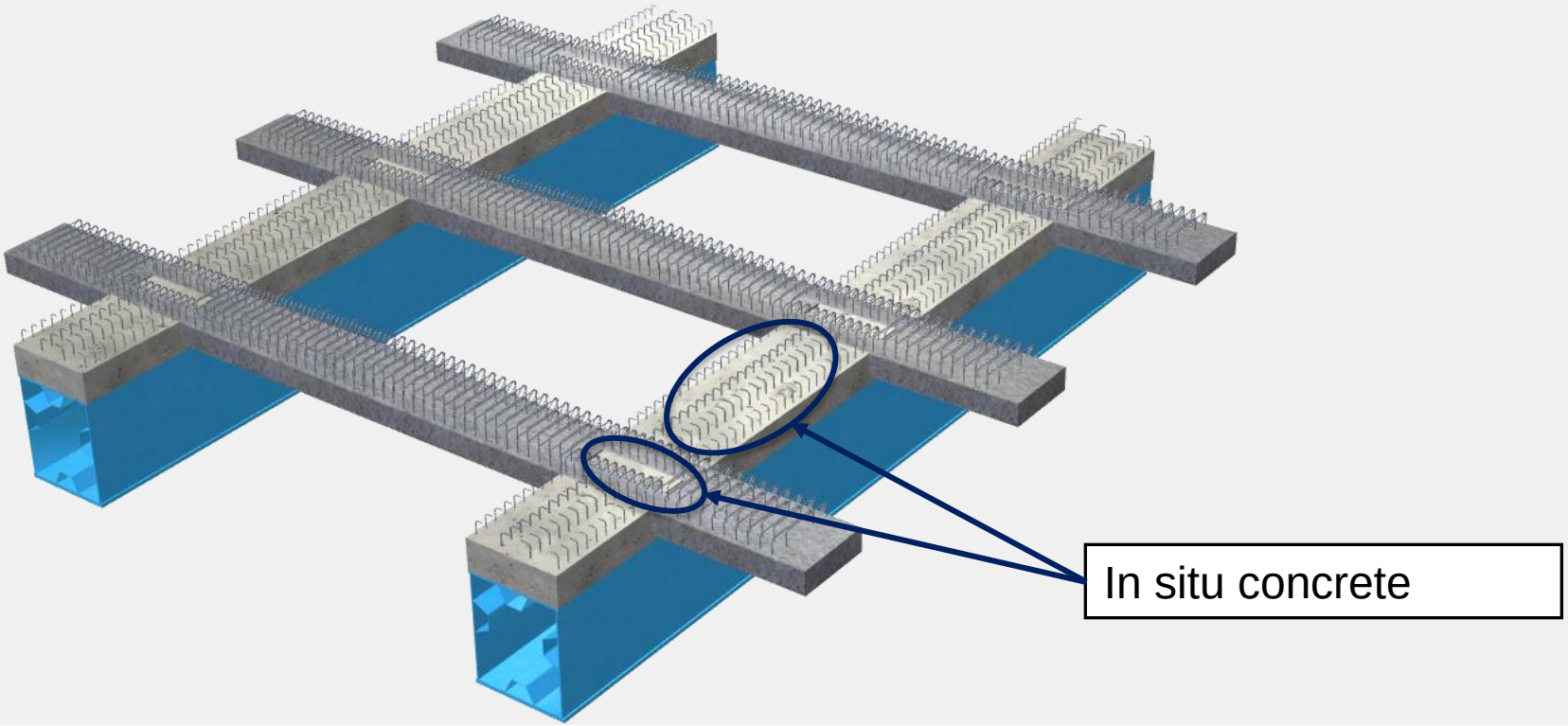
VTR System

3. Longitudinal reinforcement

Precast reinforcement cages
– fast, simple and efficient

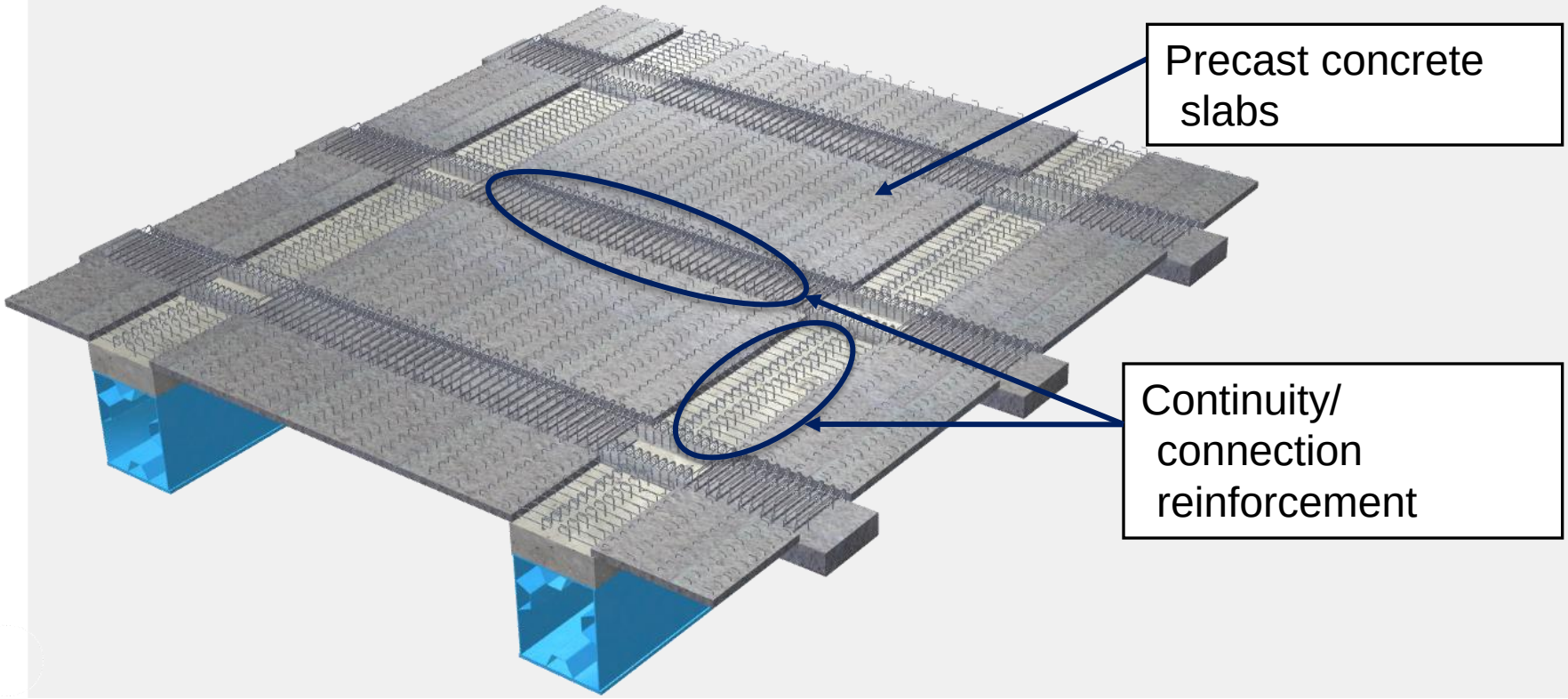


4. Composite girder system



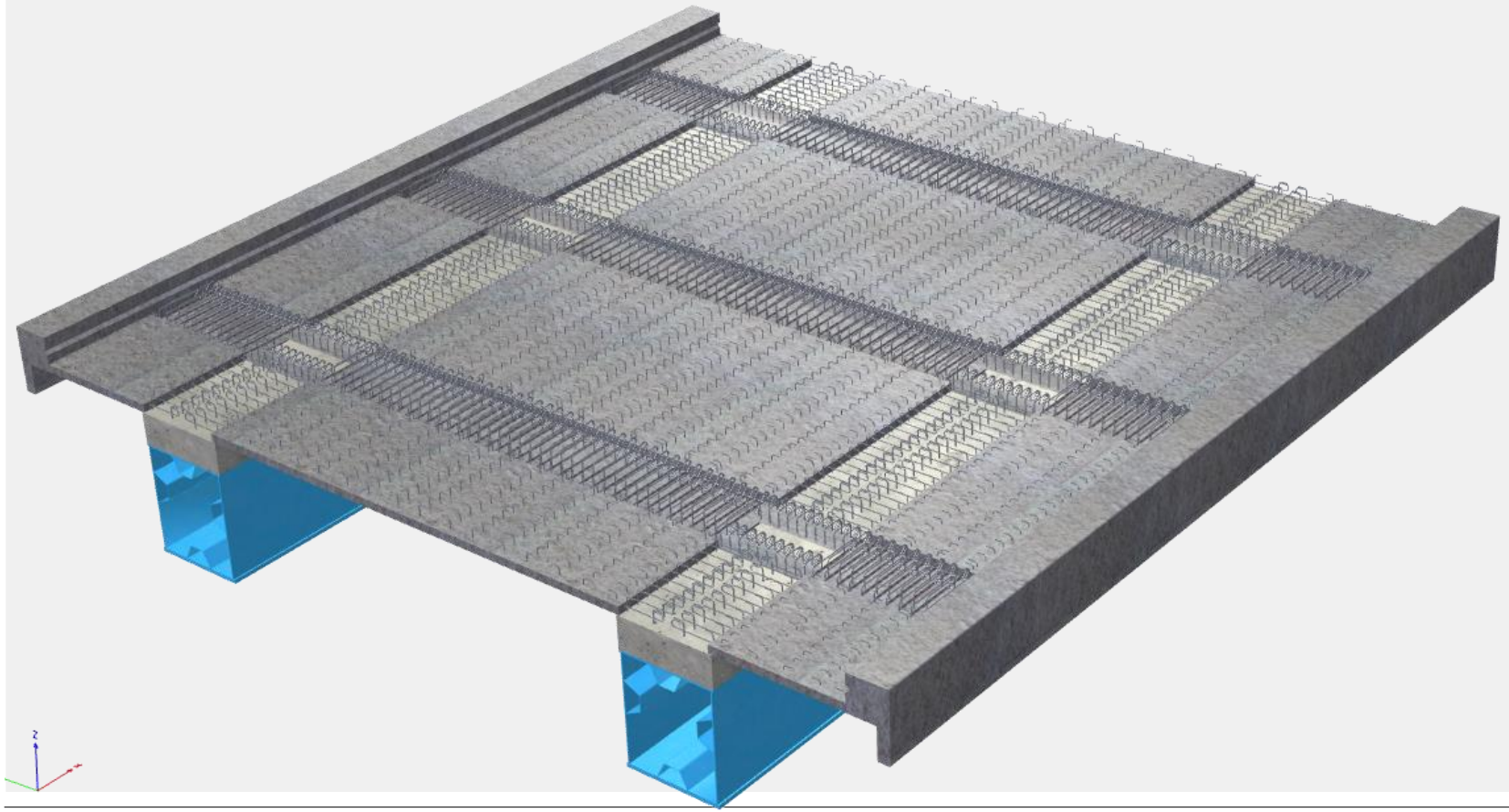
VTR System

5. Prefabricated slab elements



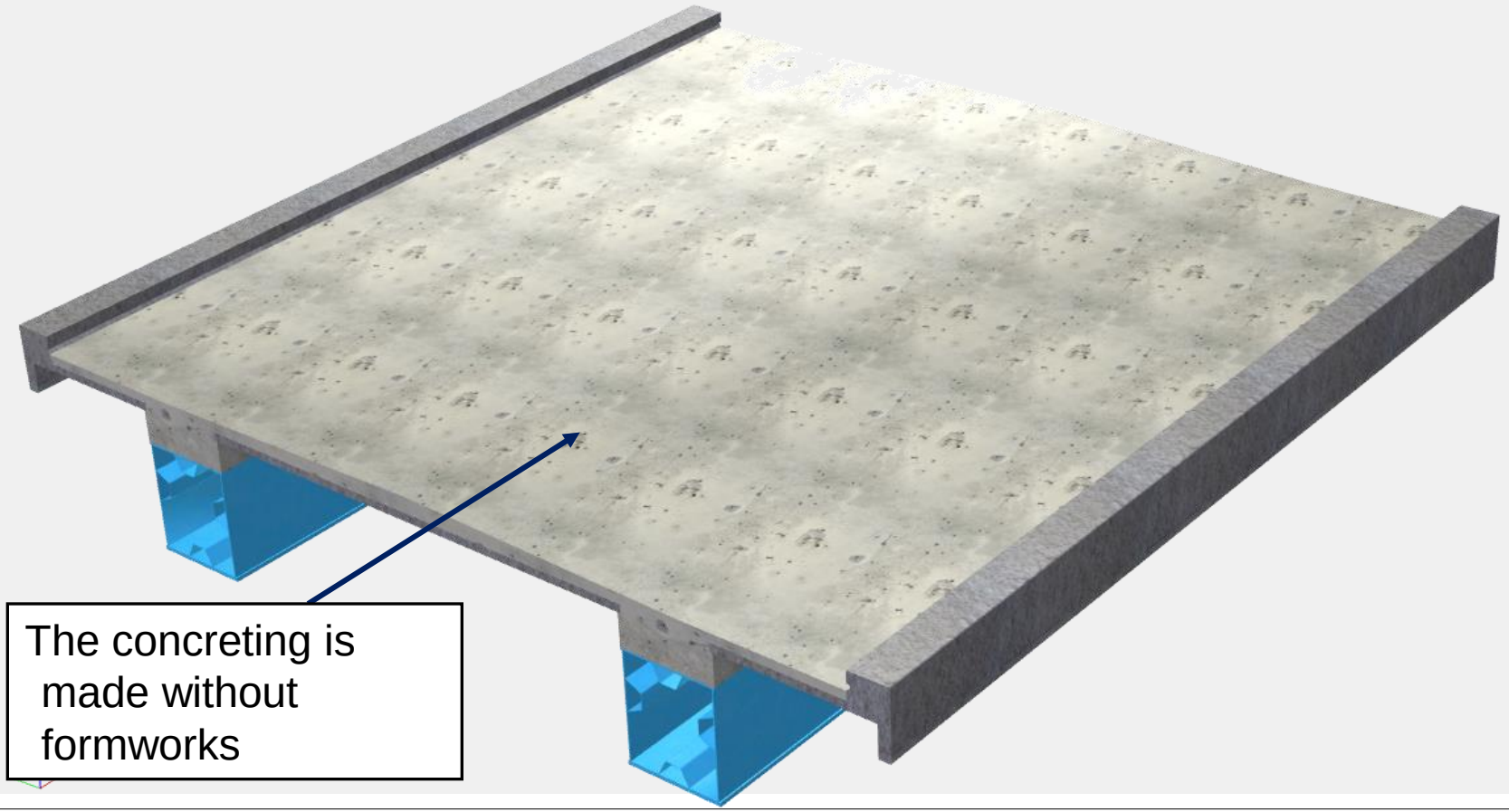
VTR System

6. Prefabricated cap elements



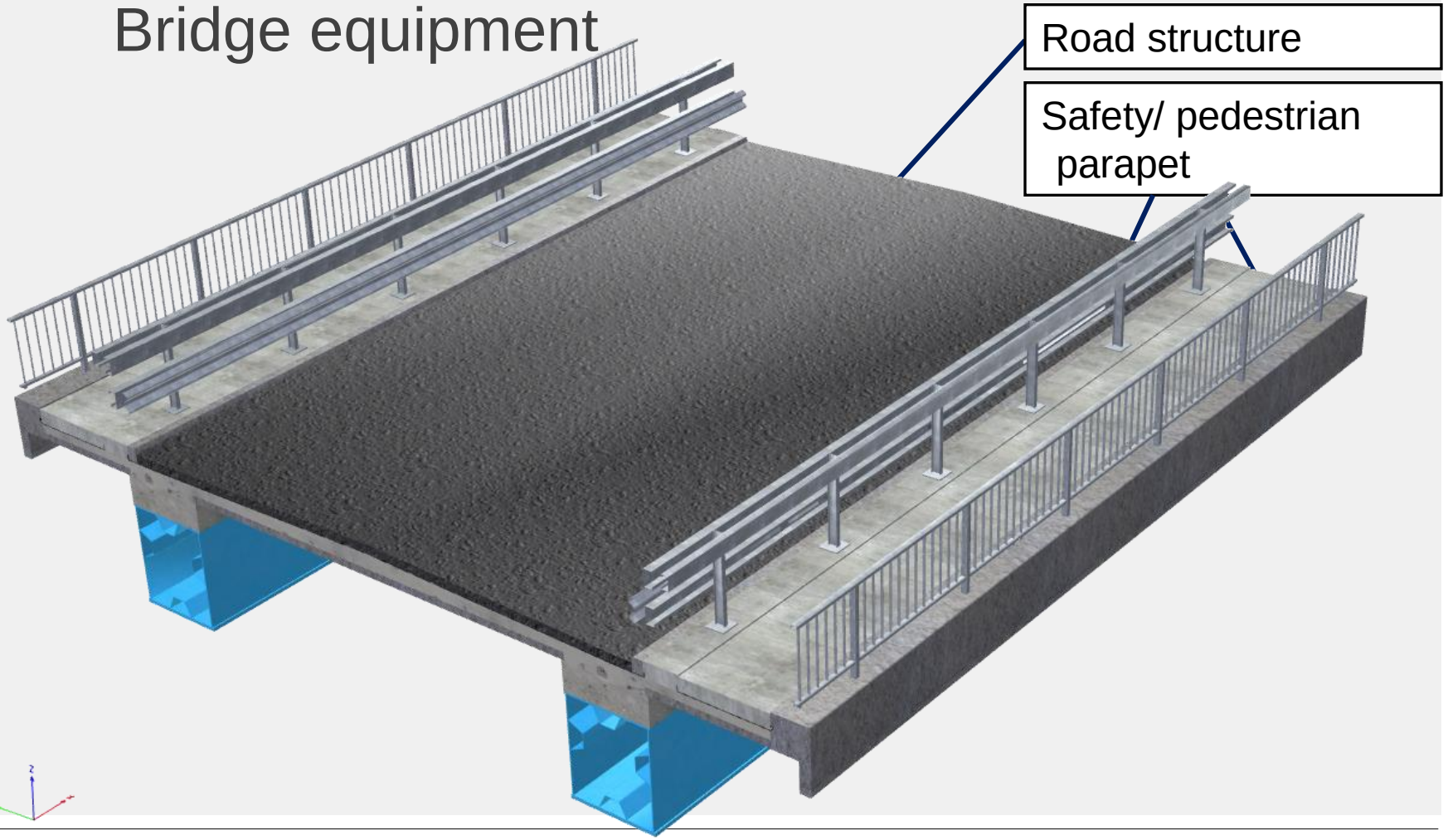
VTR System

7. Last in situ concrete phase



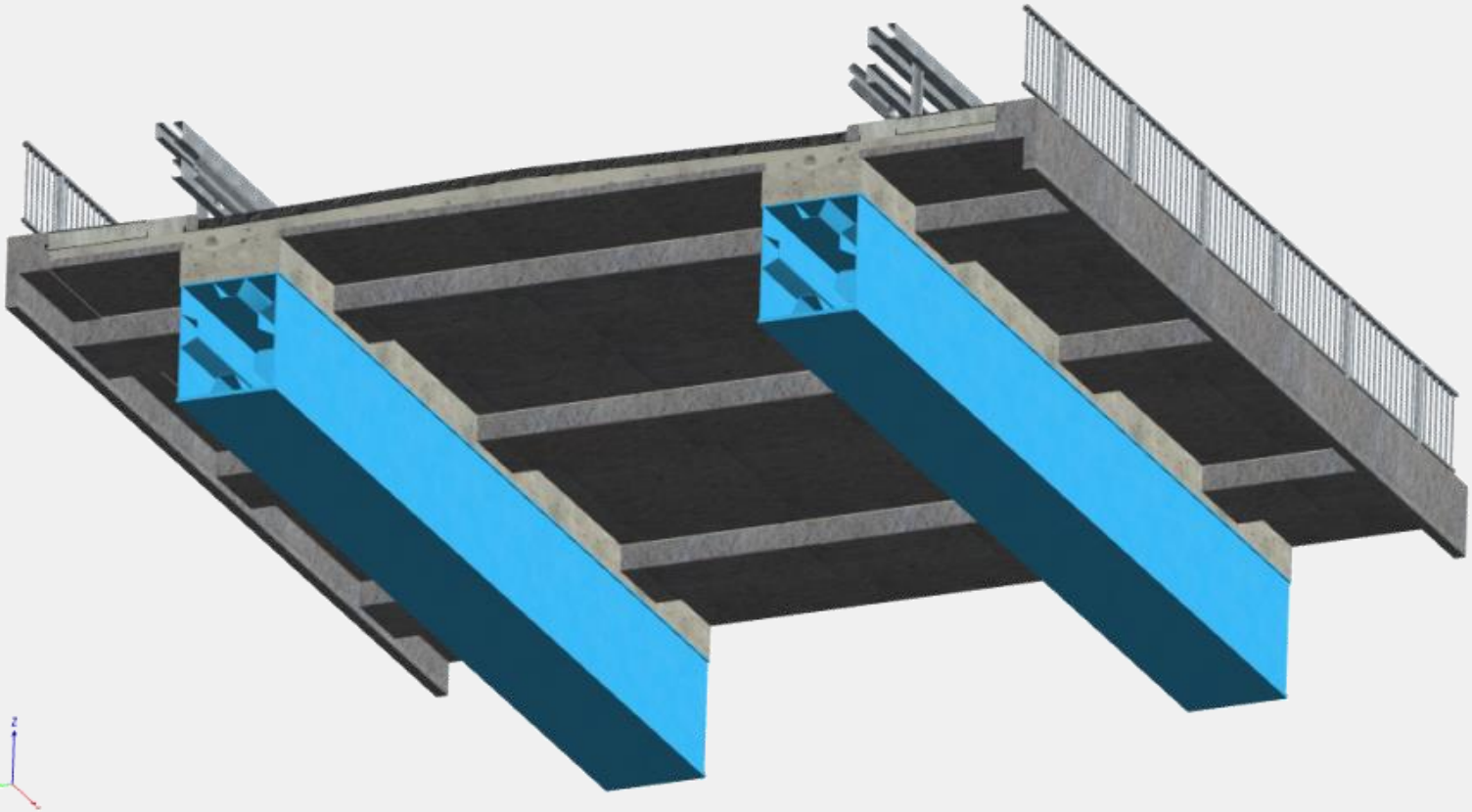
VTR System

8. Bridge equipment



VTR System

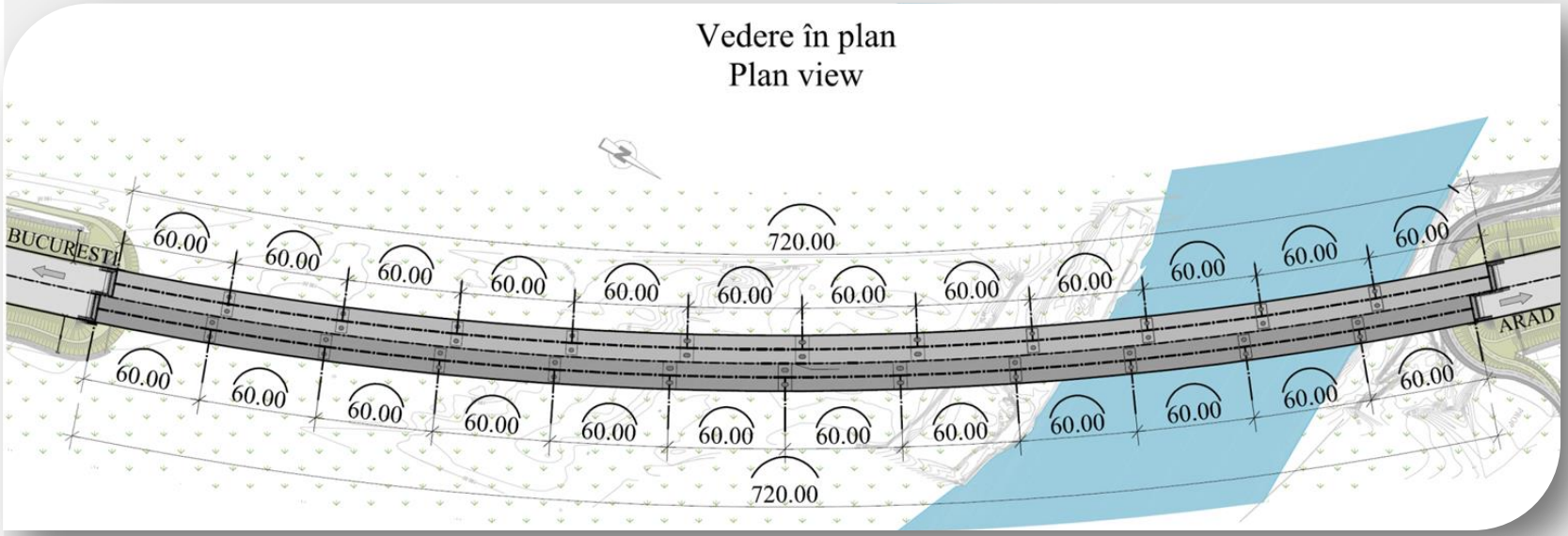
Final structure – robust, simple, efficient.

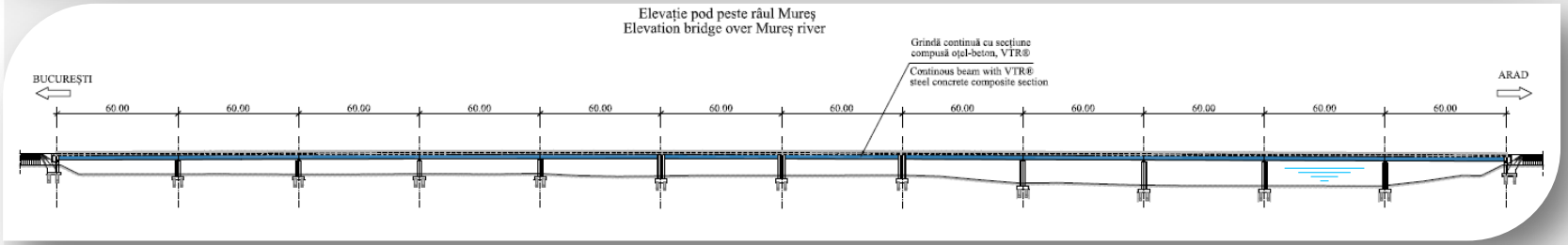


VTR in Romania

2012 Mures Bridge: 60 m x 12 spans = 720 m

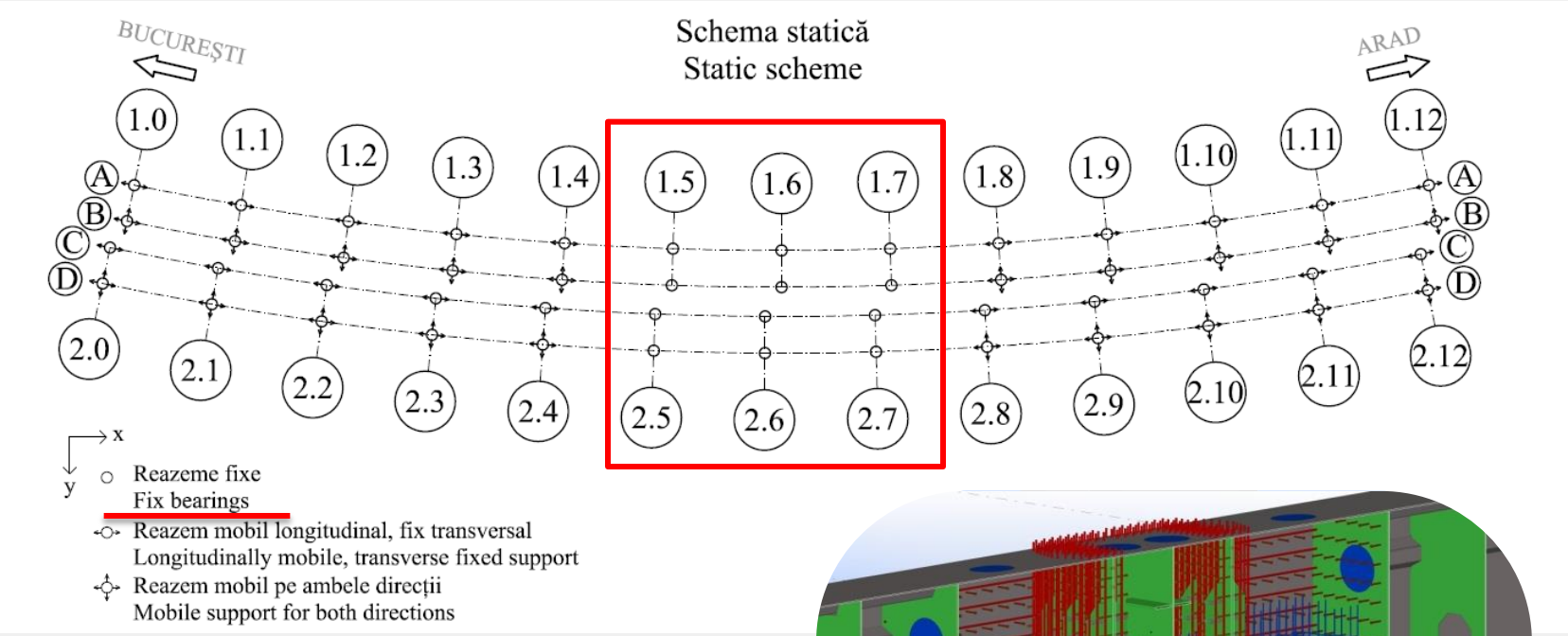
VTR in Romania

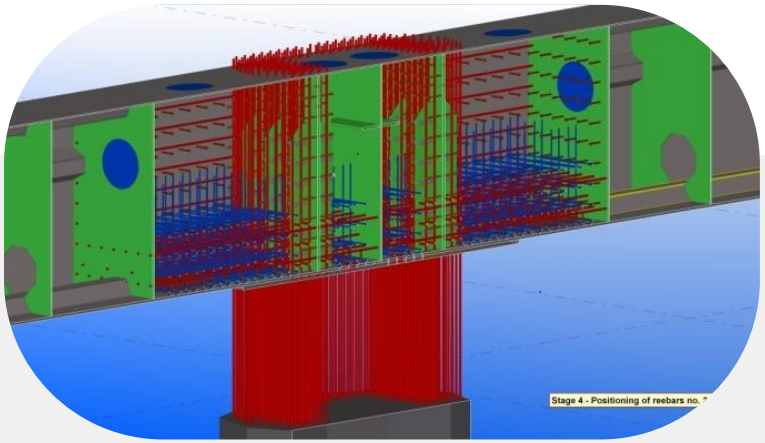




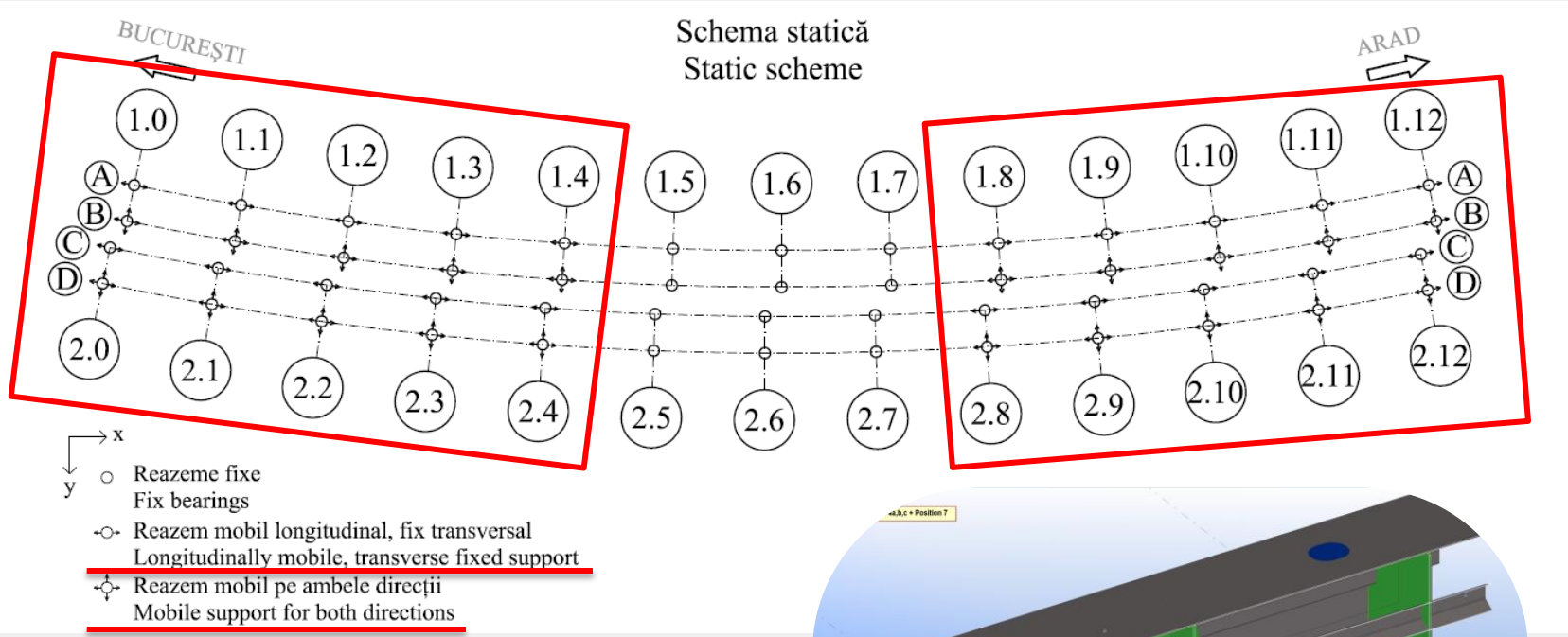
12 Mures Bridge: 60 m x 12 spans = 720 m

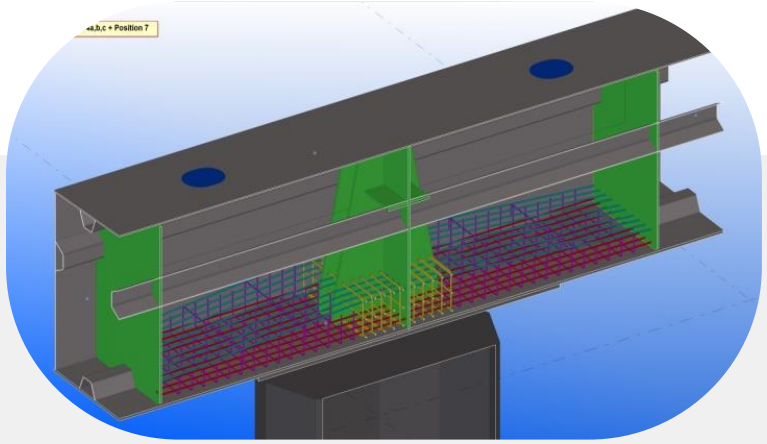
VTR in Romania





VTR in Romania





VTR in Romania

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2012 Mures Bridge: 60 m x 12 spans = 720 m

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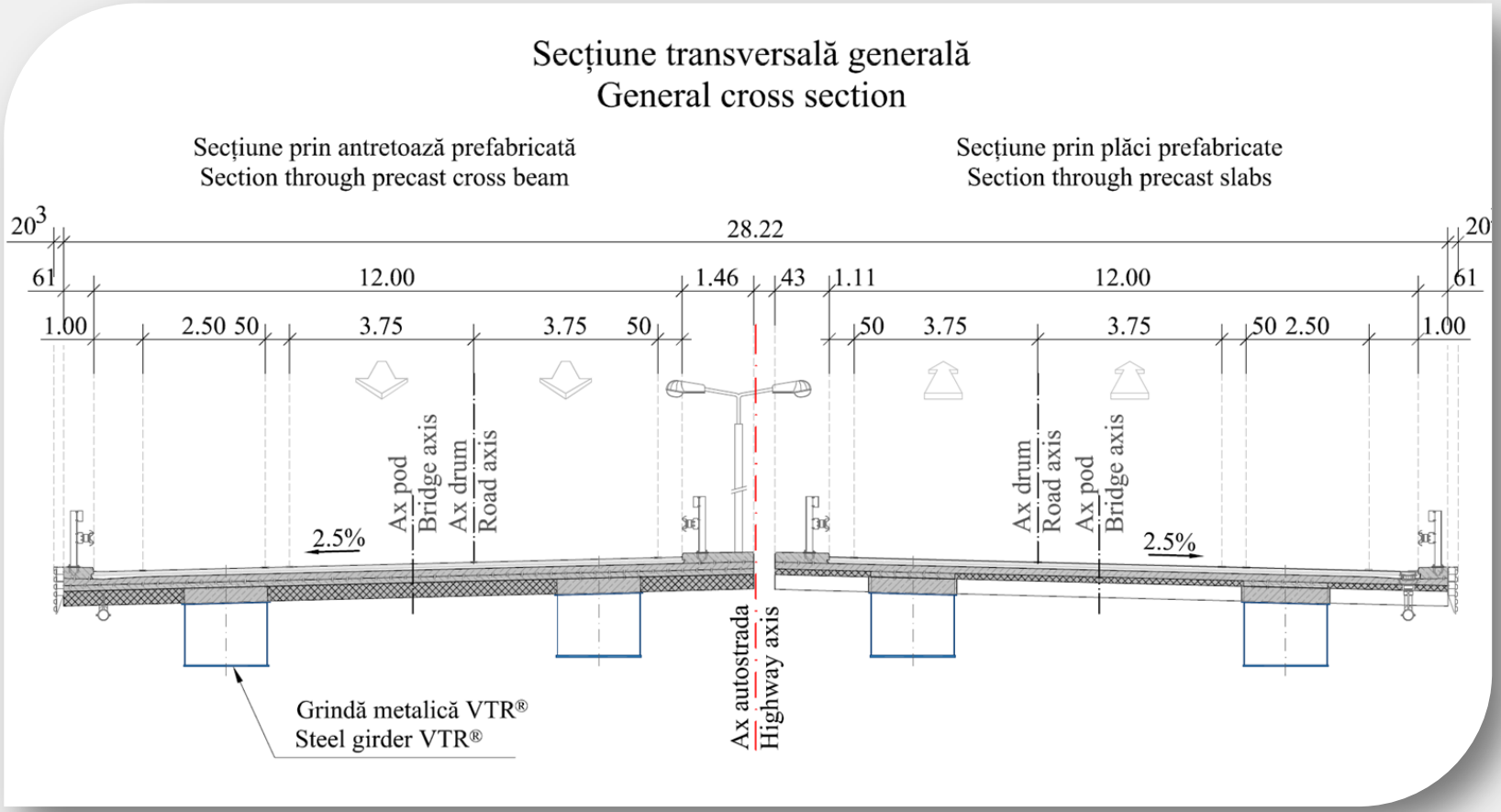
VTR in Romania

VTR in Romania

2014 Orăștie Viaduct 240 m over the Railway and National Road

VTR in Romania

2014 Orăștie Viaduct 240 m over the Railway and National Road



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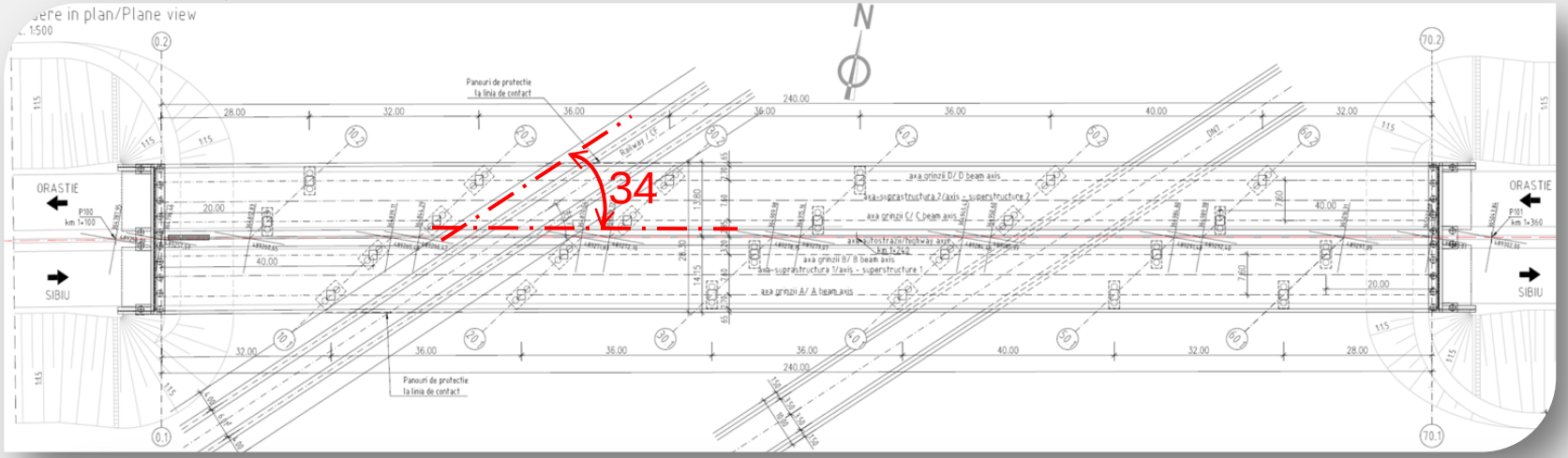

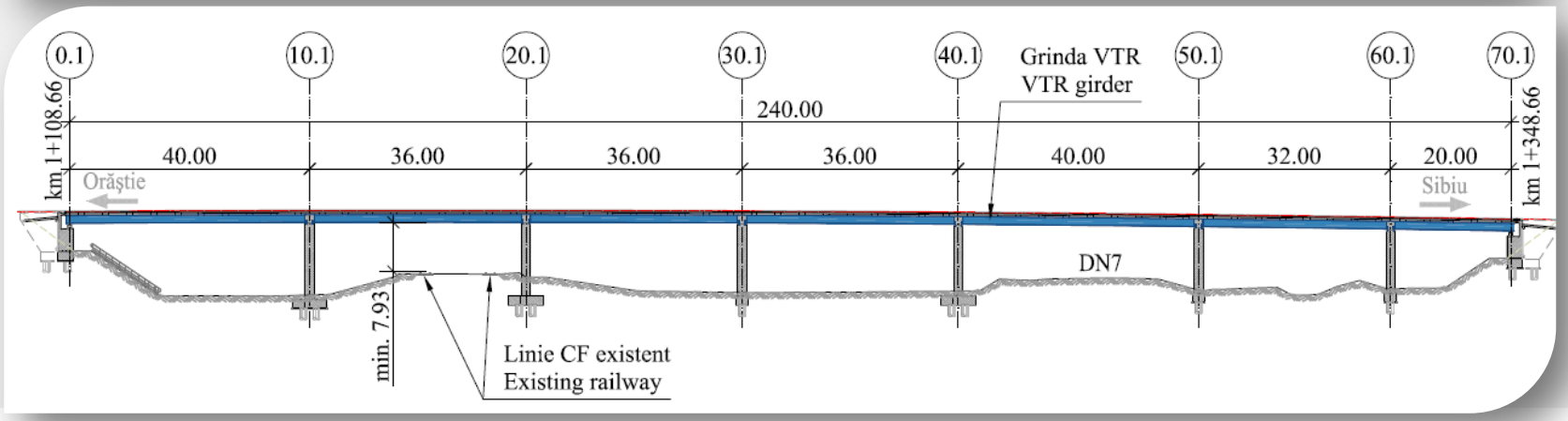

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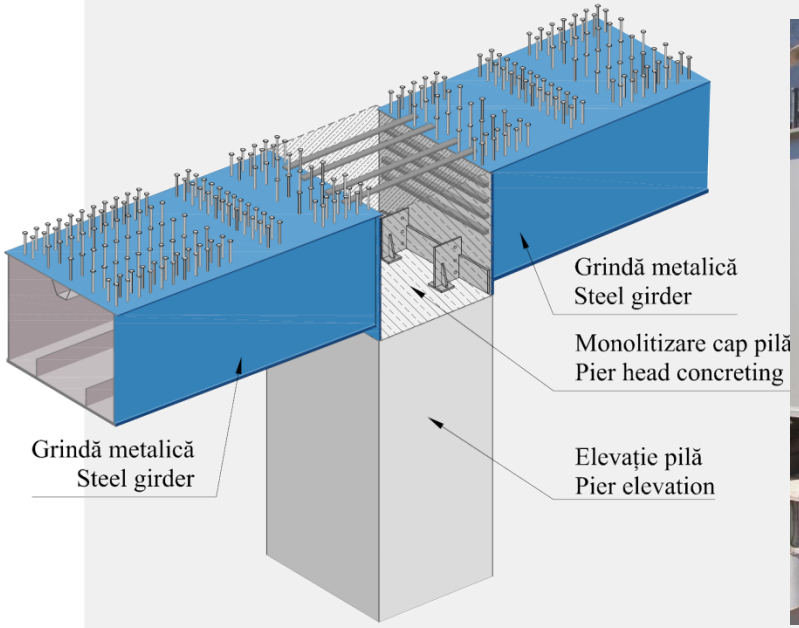
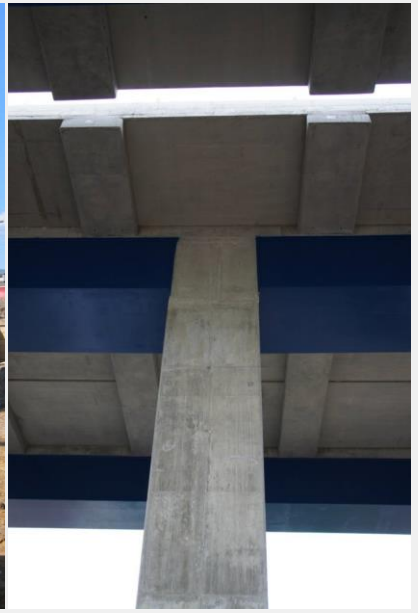
VTR in Romania

2014 Orăștie Viaduct 240 m over the Railway and National Road





VTR in Romania

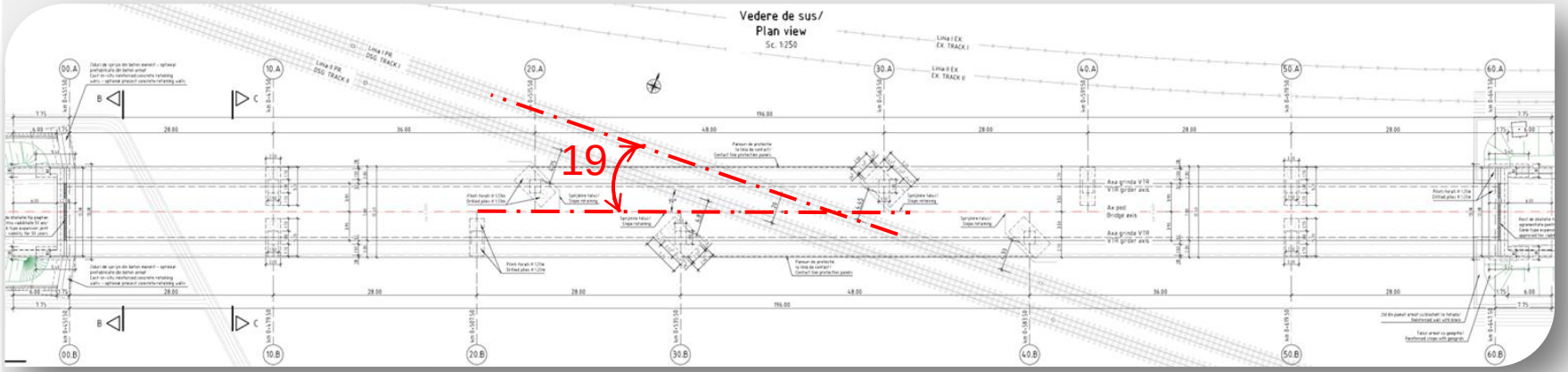
2014 Orăștie Viaduct 240 m over the Railway and National Road

VTR in Romania

2018 Simeria Railway Overpass 196 m

VTR in Romania

2018 Simeria Railway Overpass 196 m



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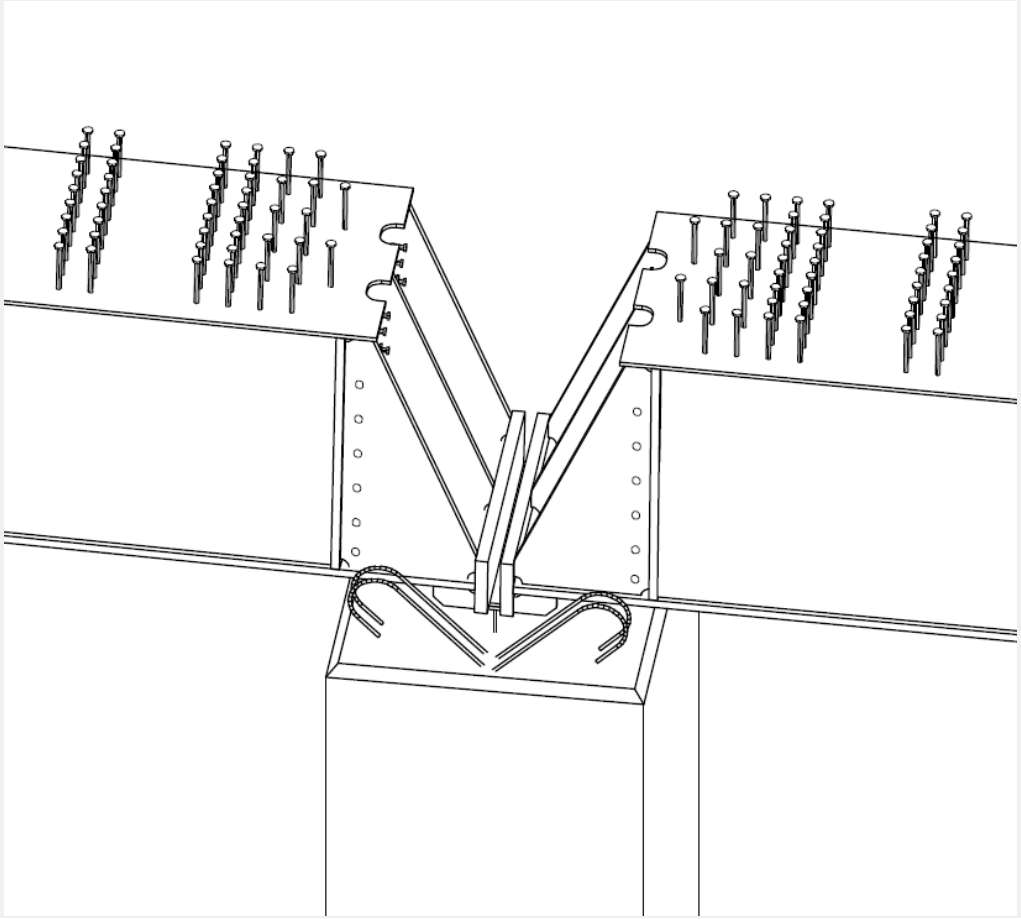
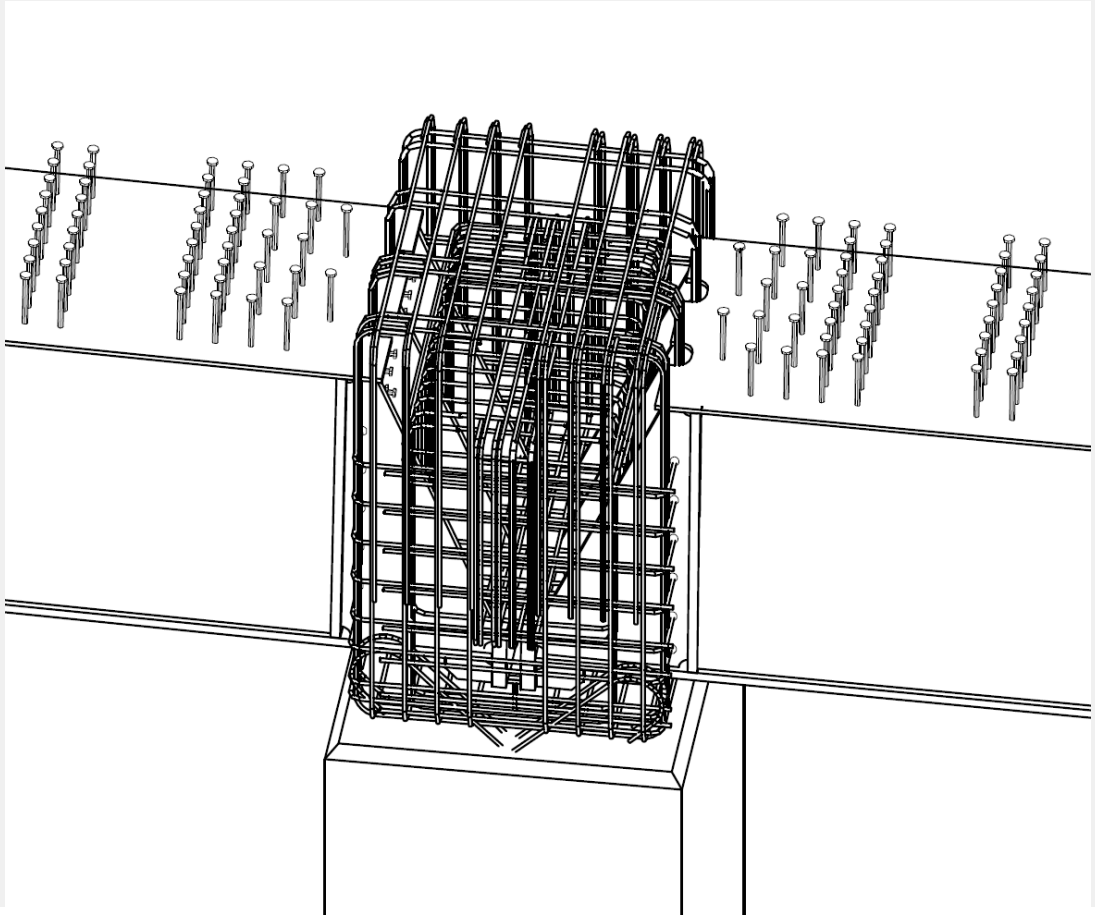
VTR in Romania

2018 Simeria Railway Overpass 196 m



VTR in Romania

2018 Simeria Railway Overpass 196 m



VTR in Romania

2018 Simeria Railway Overpass 196 m

VTR in Romania

2018 Simeria Railway Overpass 196 m

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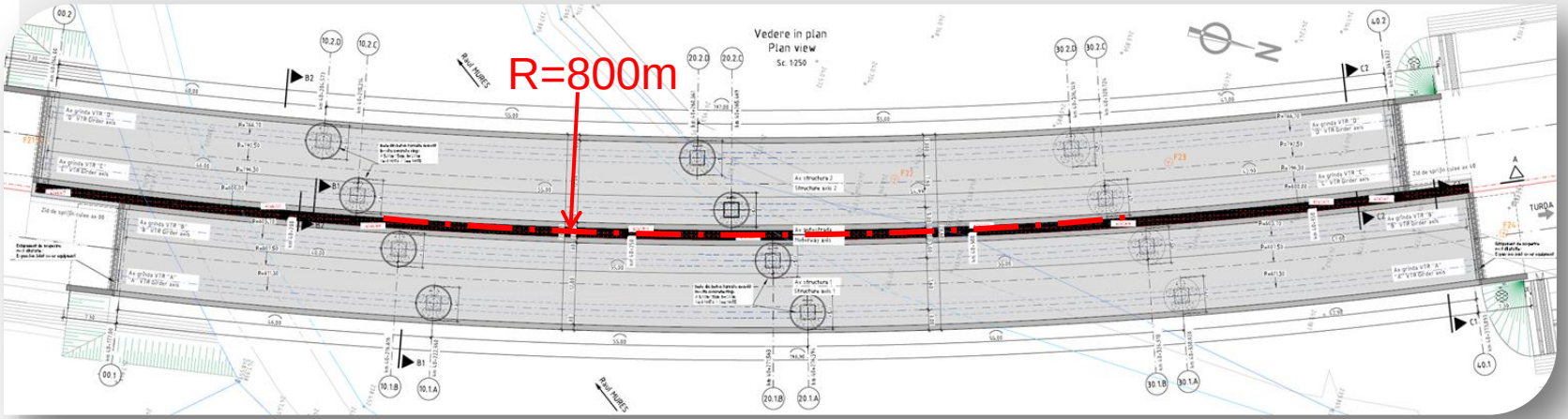
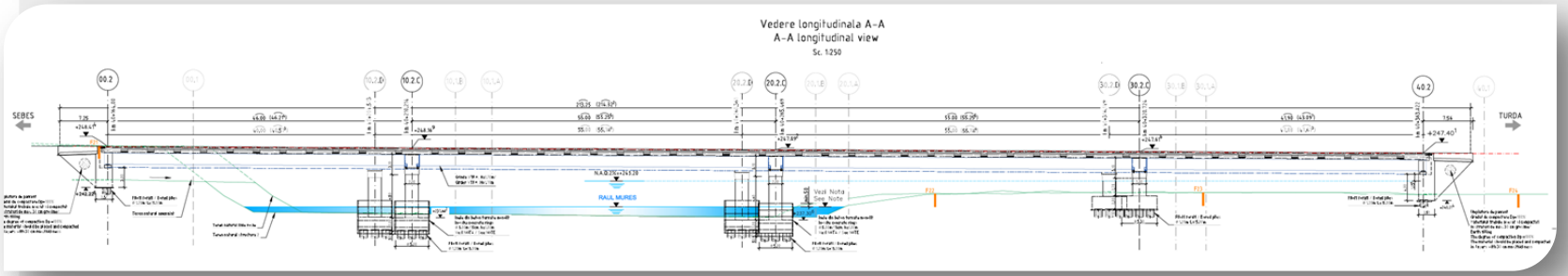
VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 215 m

VTR in Romania

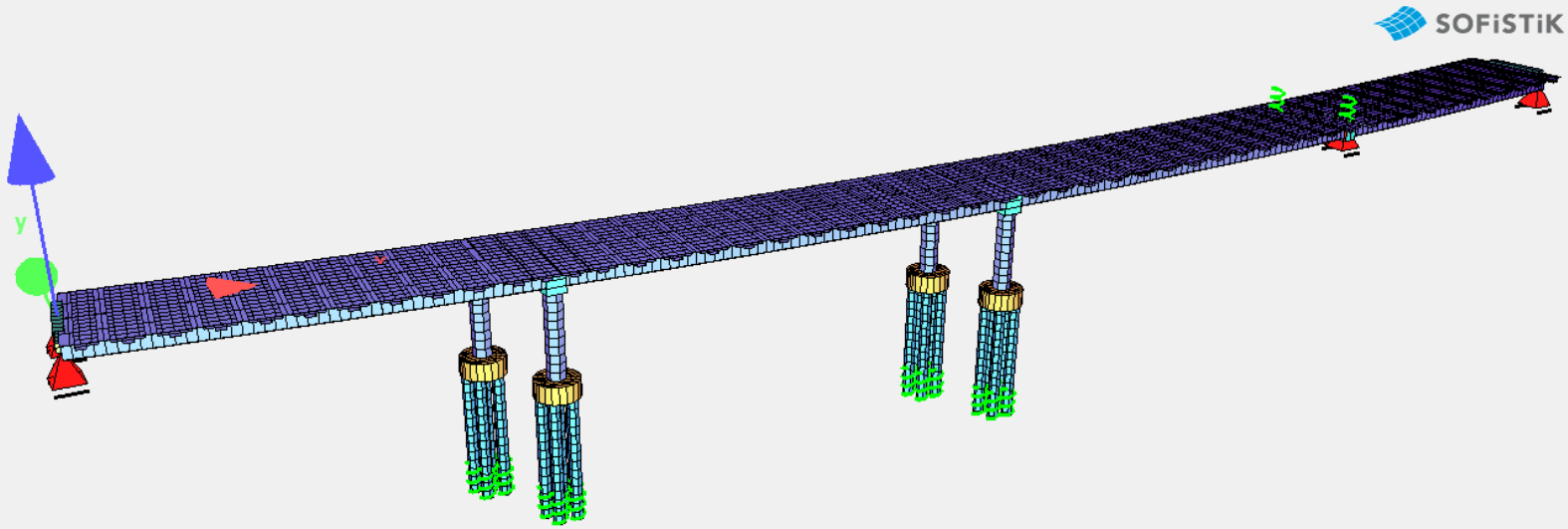
2020 Mureș Bridge on the Sebeș -Turda Motorway





VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway



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VTR in Romania

2020 Mureș Bridge on the Sebeș-Turda Motorway

VTR in Romania

VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 268 m

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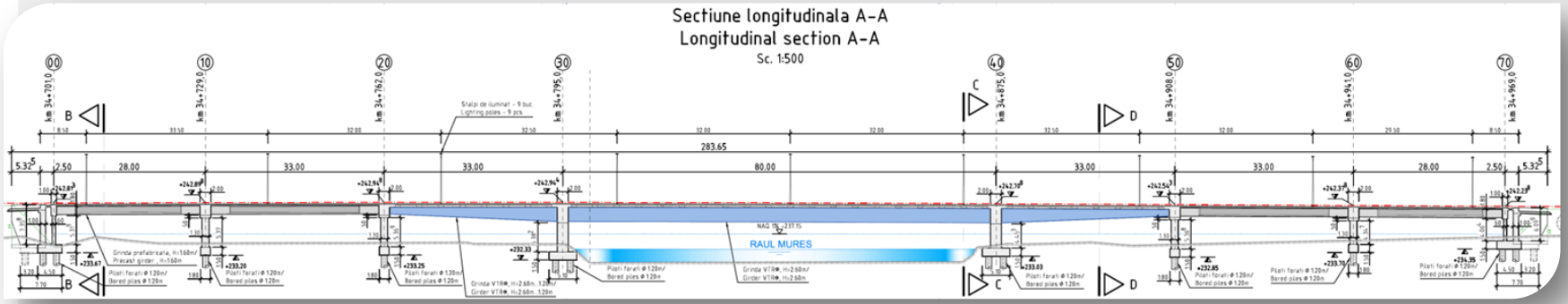
VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 268 m

L = 268 m (28 + 33 + 33 +80 + 33 +33 + 28 m)



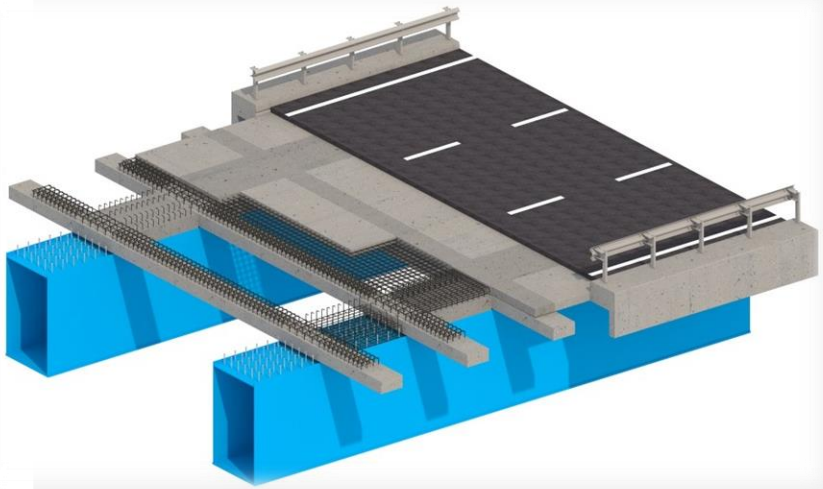
Prestressed concrete girders

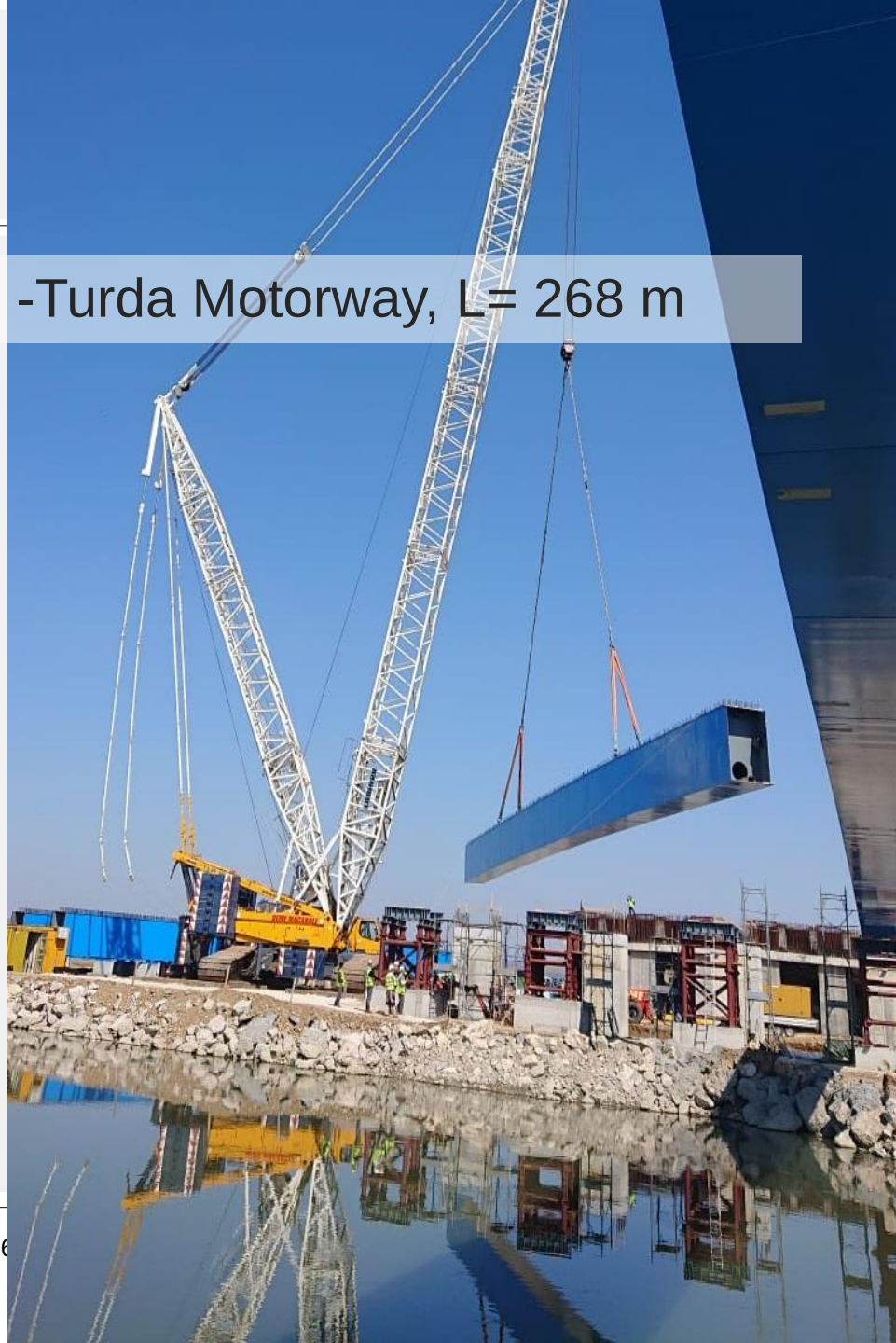
VTR Composite structure

Prestressed concrete girders

VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 268 m





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VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 268 m

VTR in Romania

2020 Mureș Bridge on the Sebeș -Turda Motorway, L= 268 m

VTR in Romania

2021 Motorway overpass on Sebeș -Turda, L= 217m

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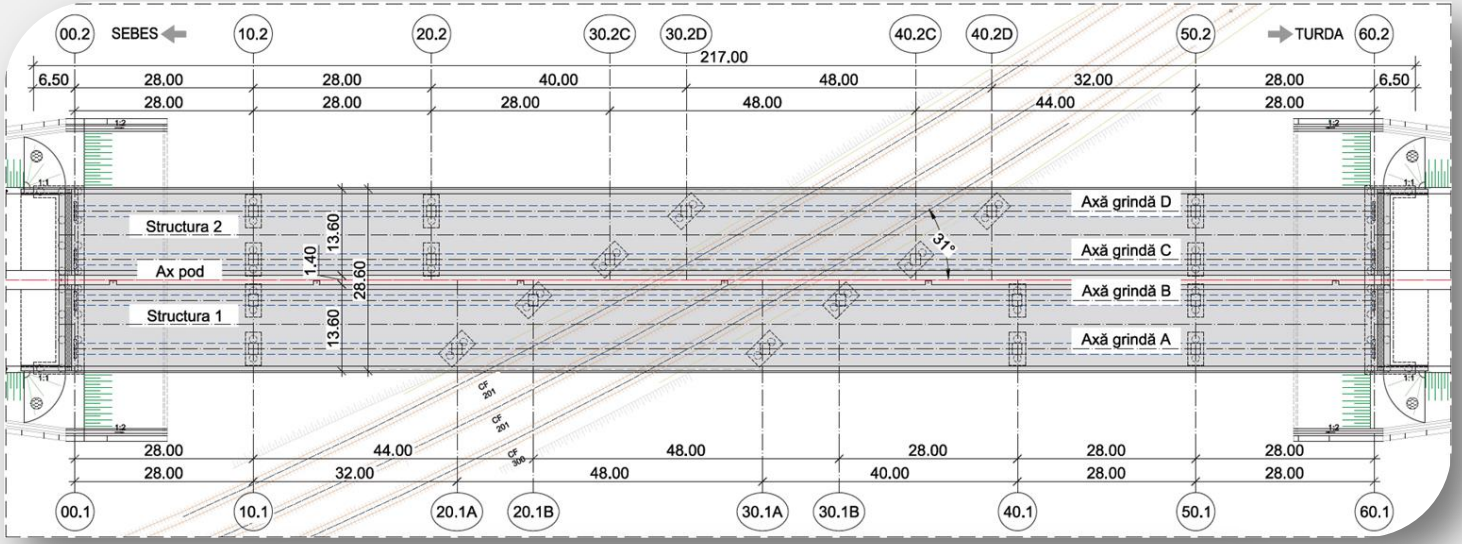
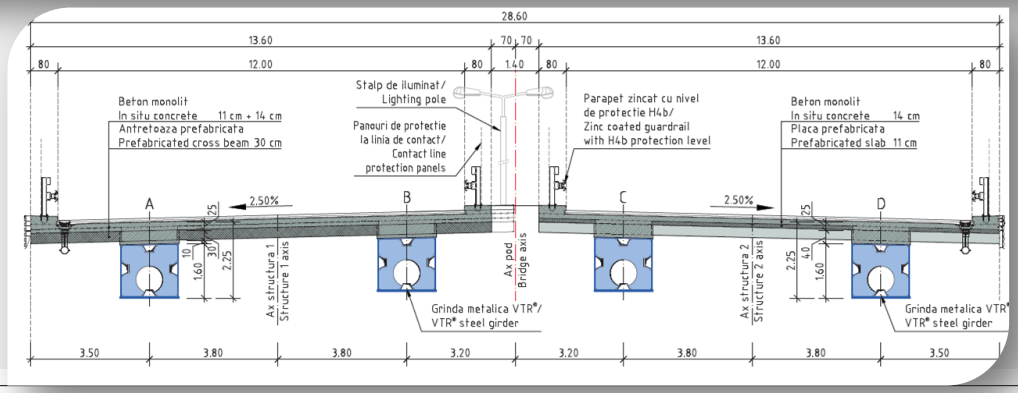
VTR in Romania

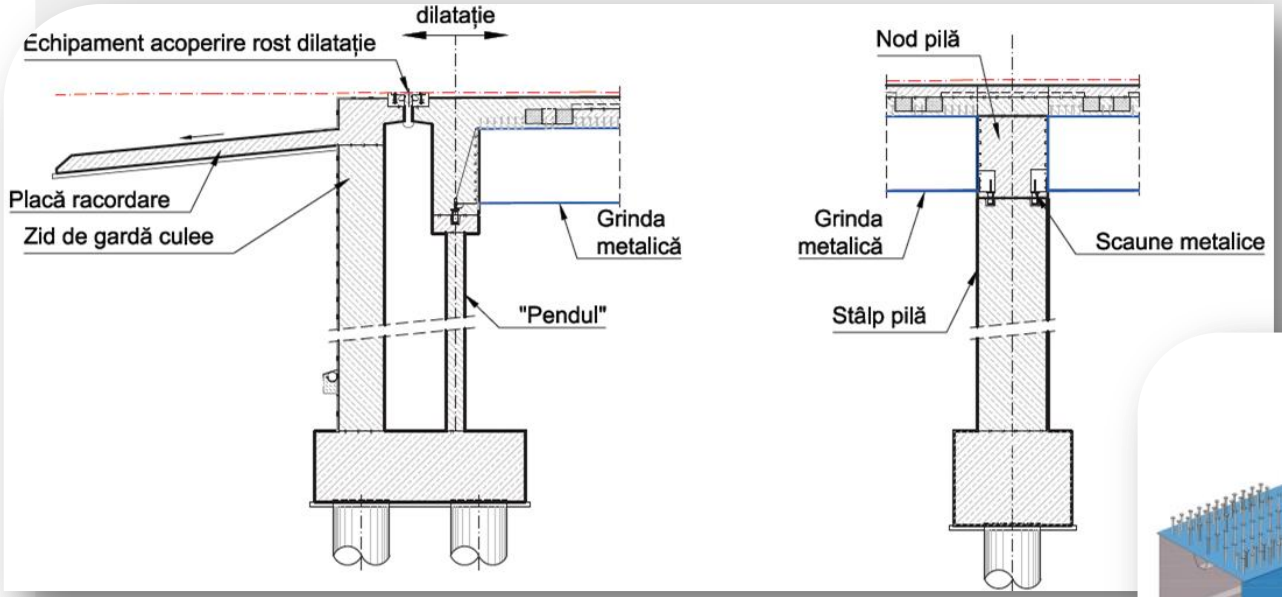
2021 Motorway overpass on Sebeș -Turda, L= 217m

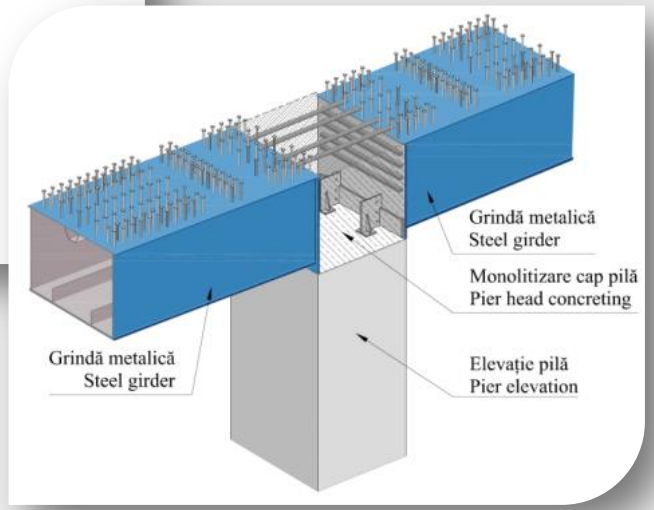




VTR in Romania

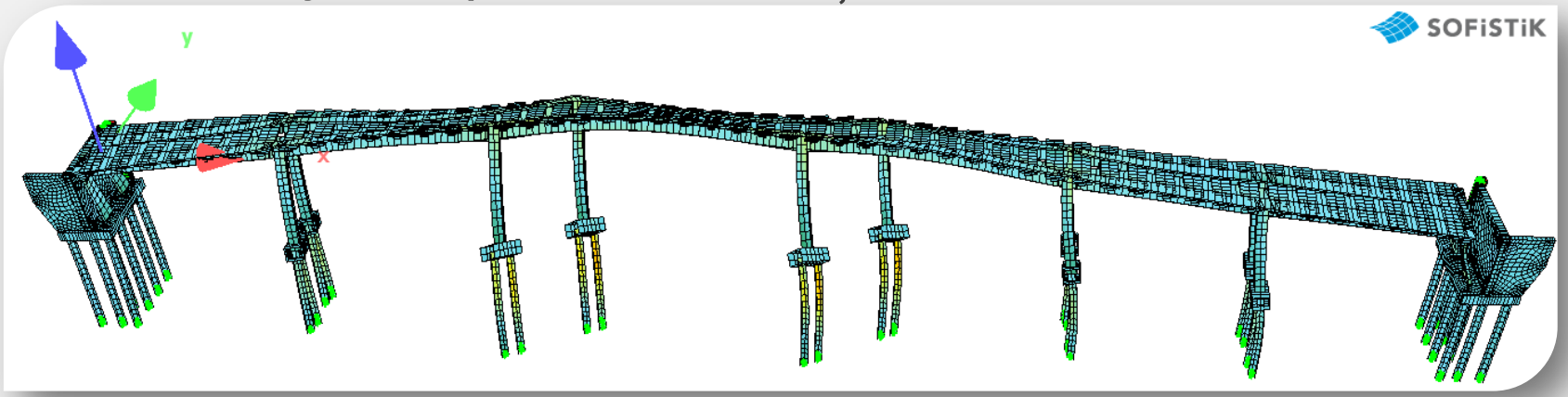
2021 Motorway overpass on Sebeș -Turda, L= 217m



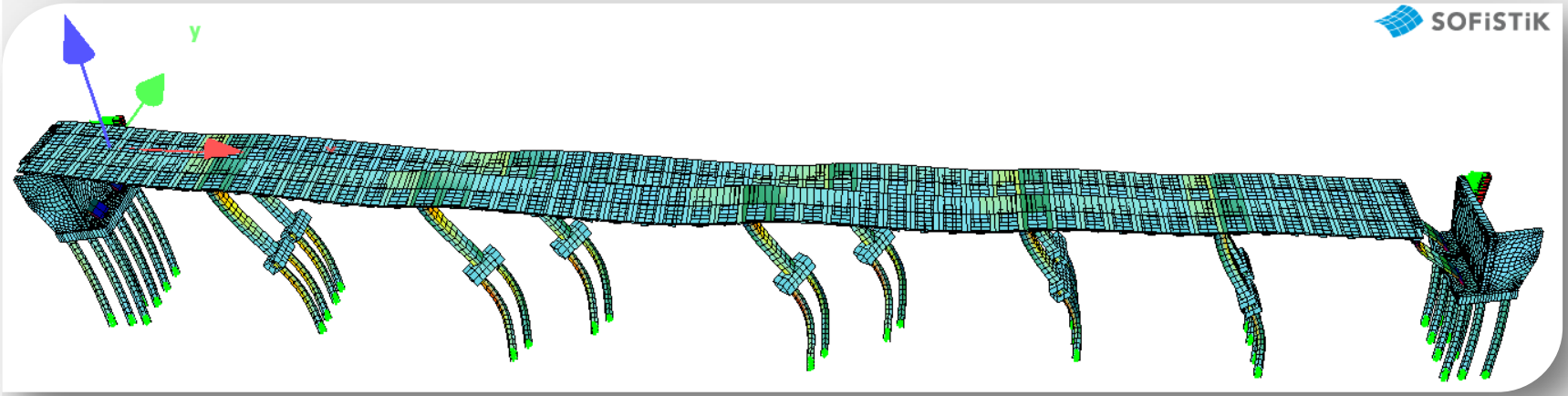


VTR in Romania

2021 Motorway overpass on Sebeș -Turda, L= 217m



1st Eigenform in transversal direction



2nd Eigenform in longitudinal direction

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VTR in Romania

2021 Motorway overpass on Sebeș -Turda, L= 217m

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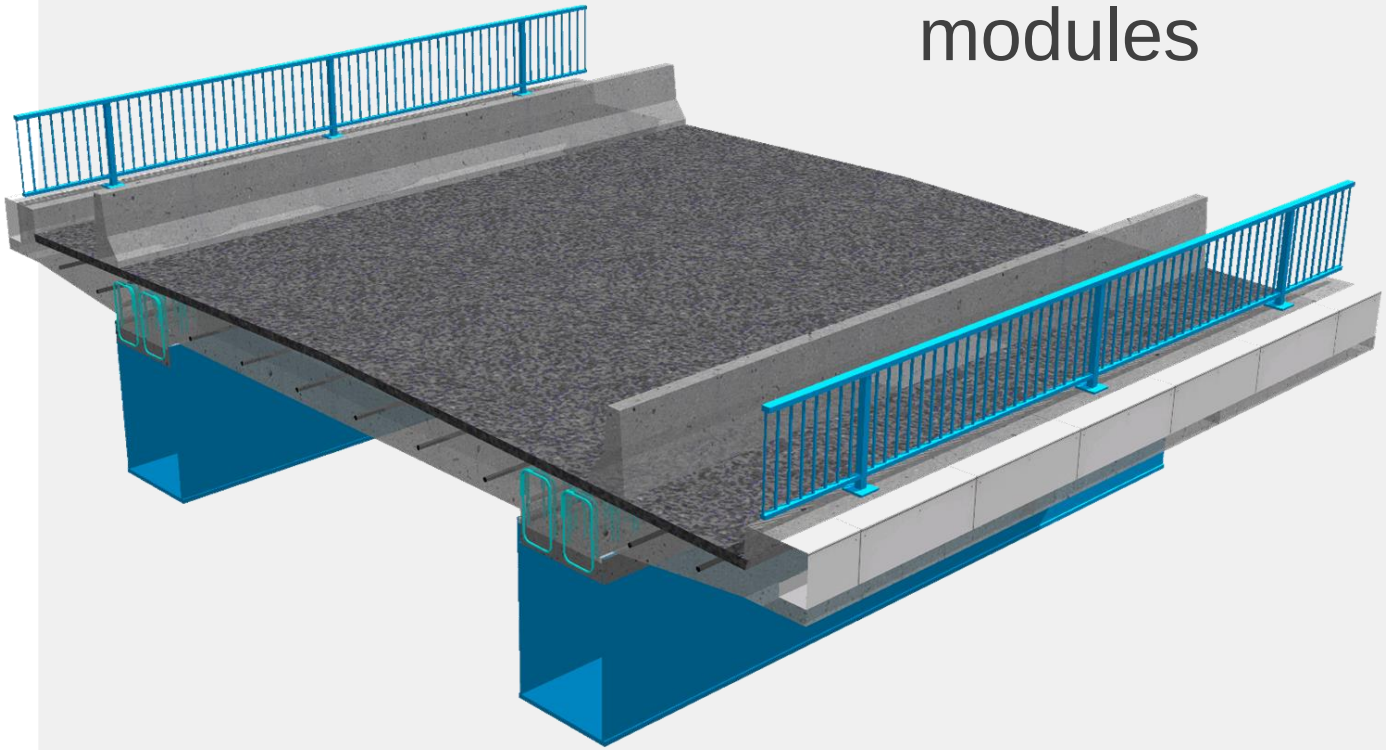
VSM System

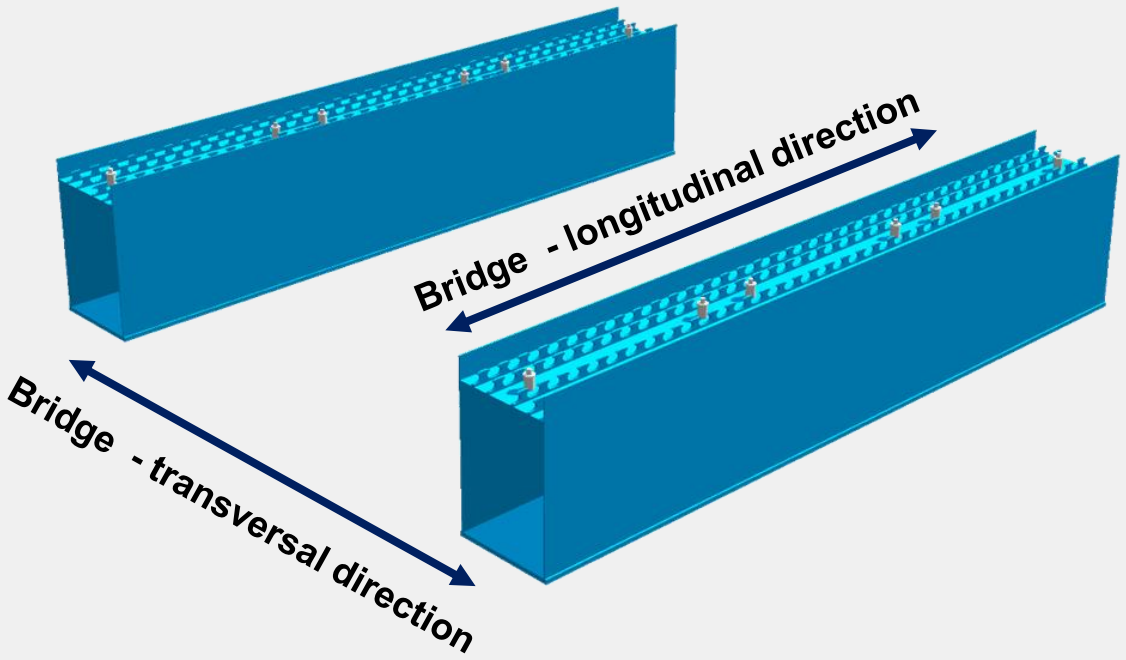
Verbund-**S**egment-**M**odul

Composite segment modules



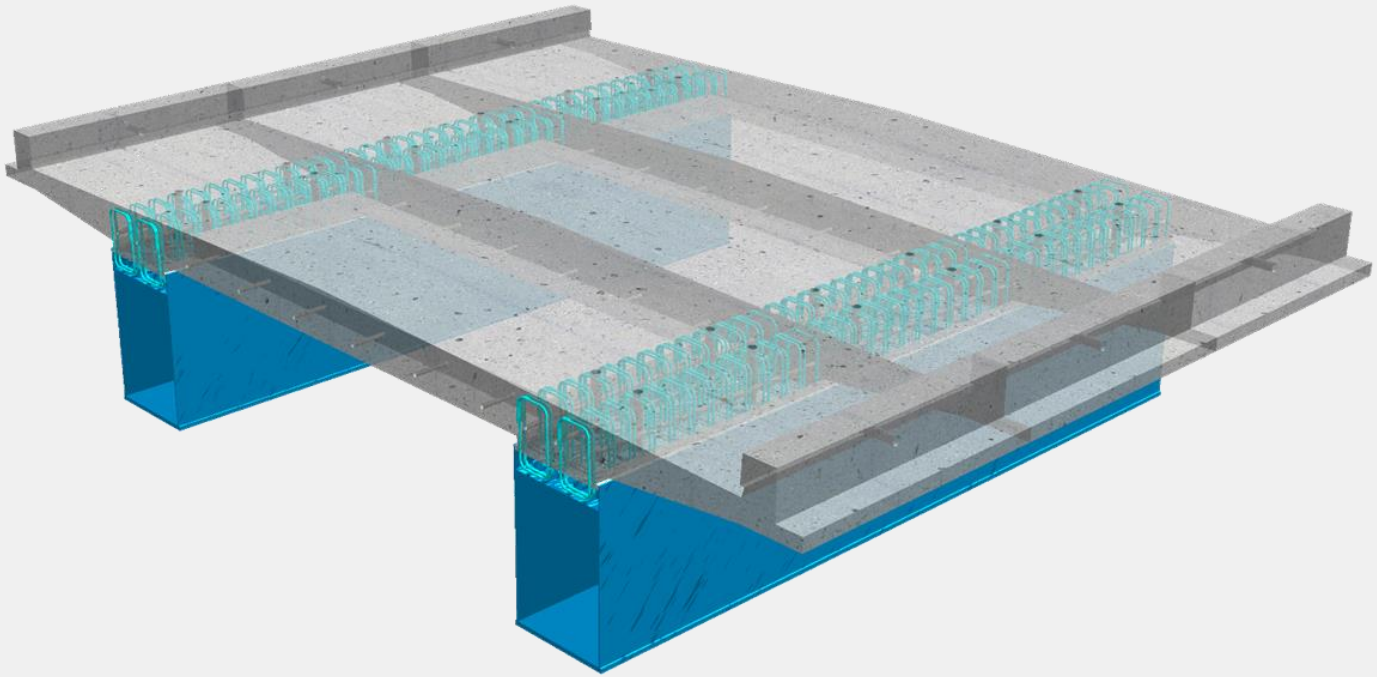
VSM System

1. Steel main girders



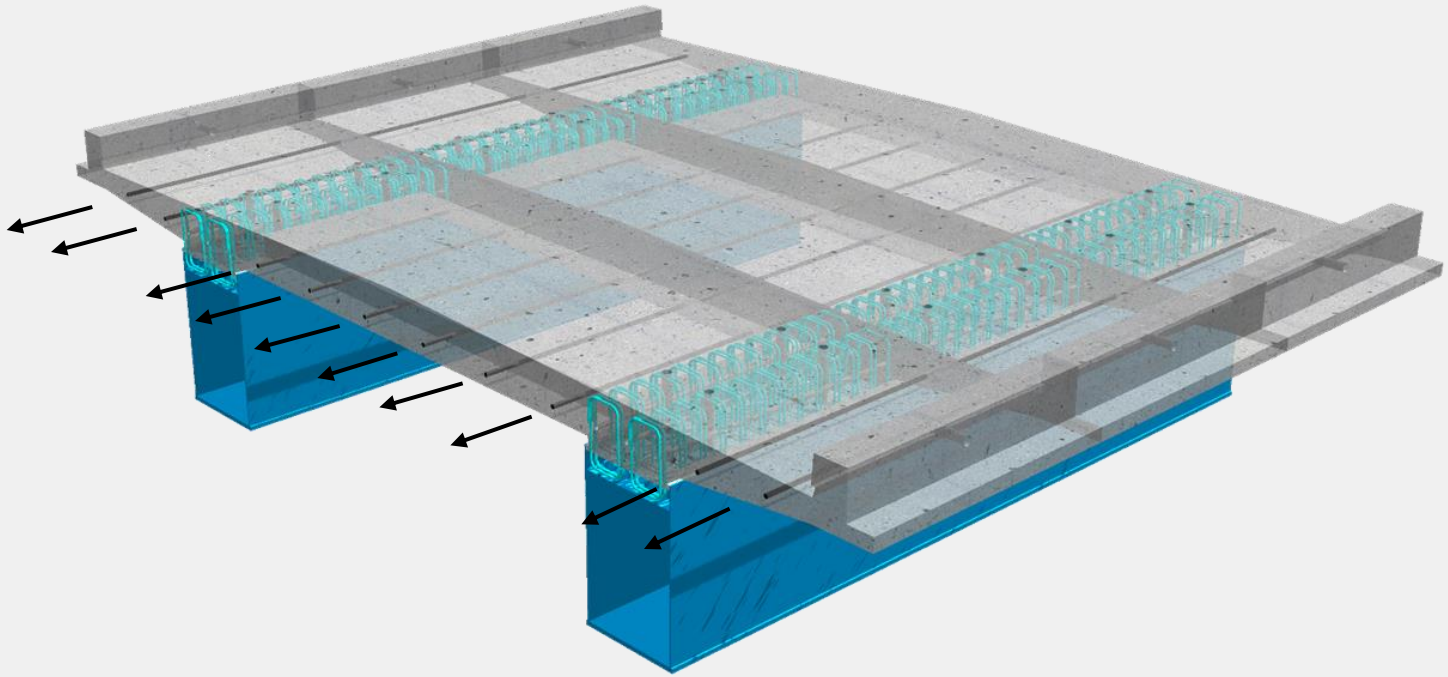
VSM System

2. Prefabricated pre-stressed deck segments



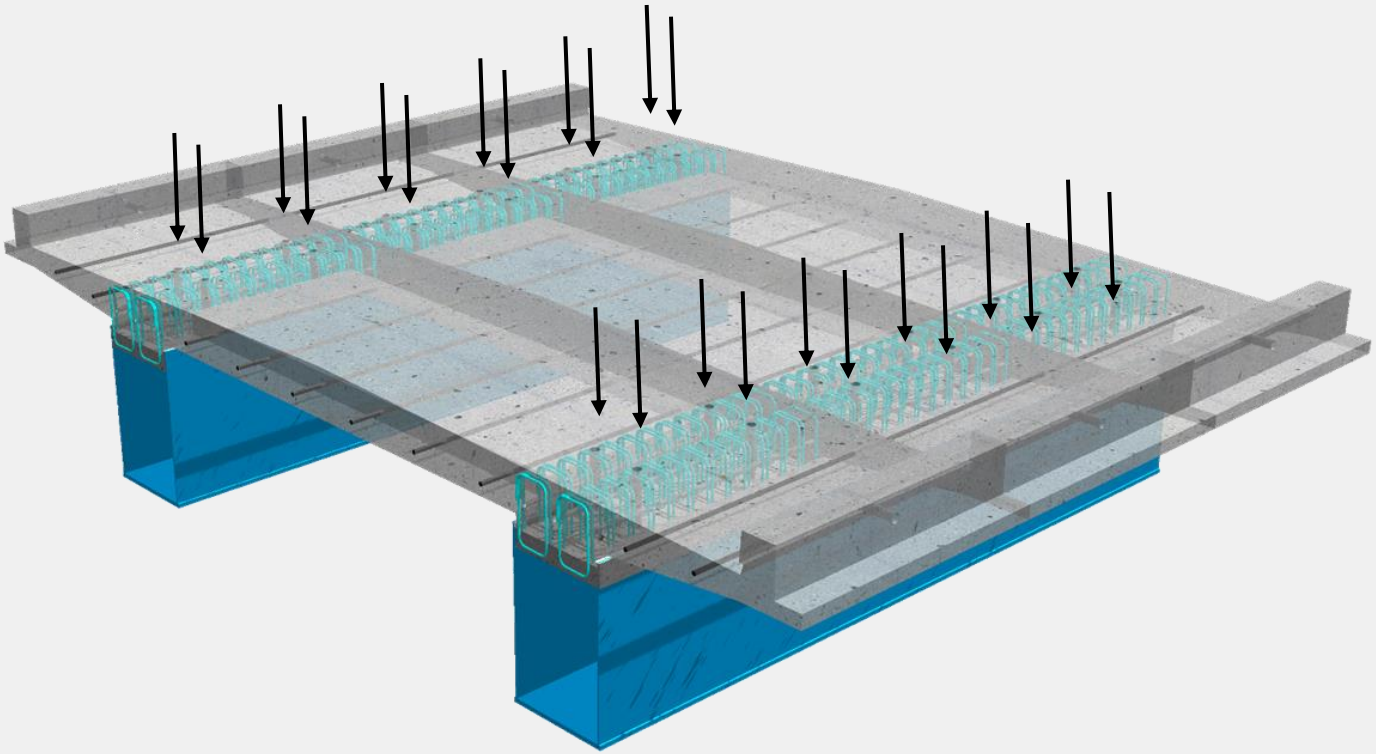
VSM System

3. Pre-stressing in longitudinal direction



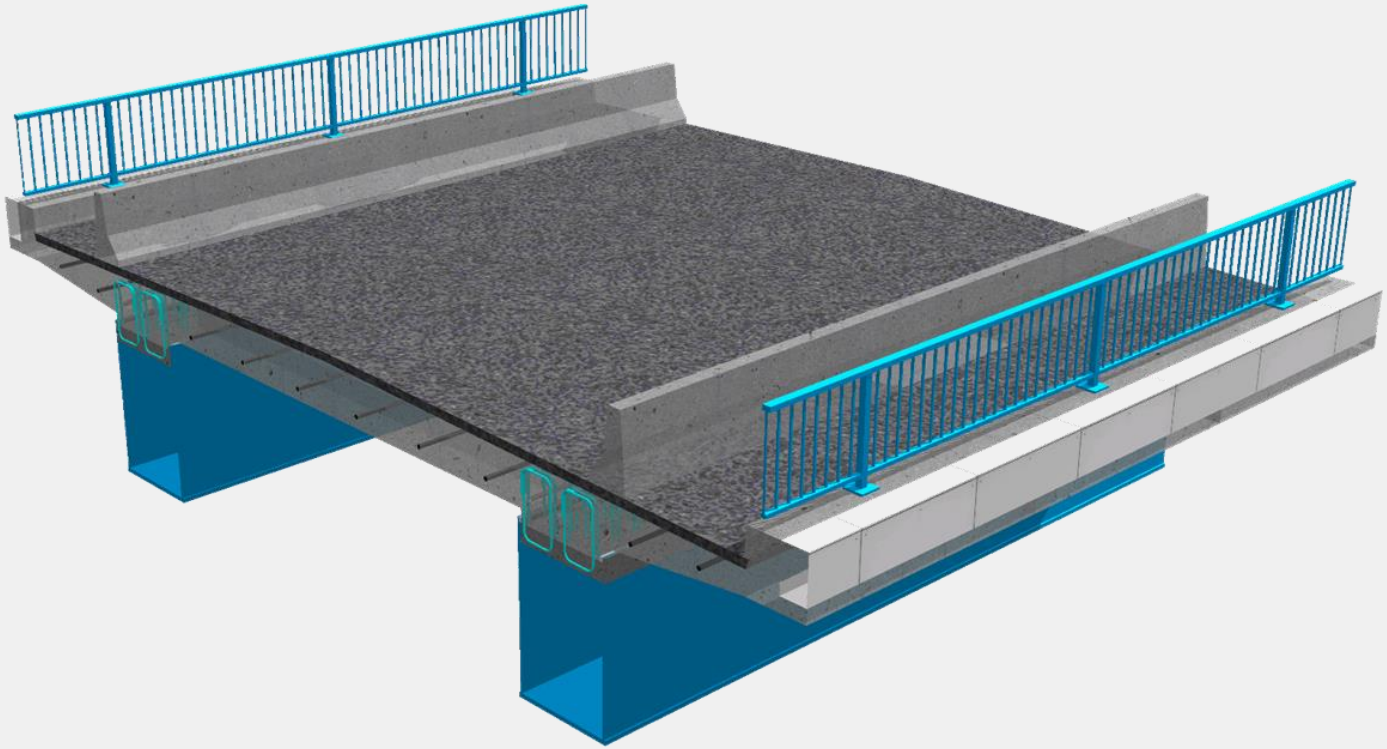
VSM System

4. Self compacting concrete



VSM System

5. Bridge equipment



Modularitate

Modularitate

Segmente

Segmente

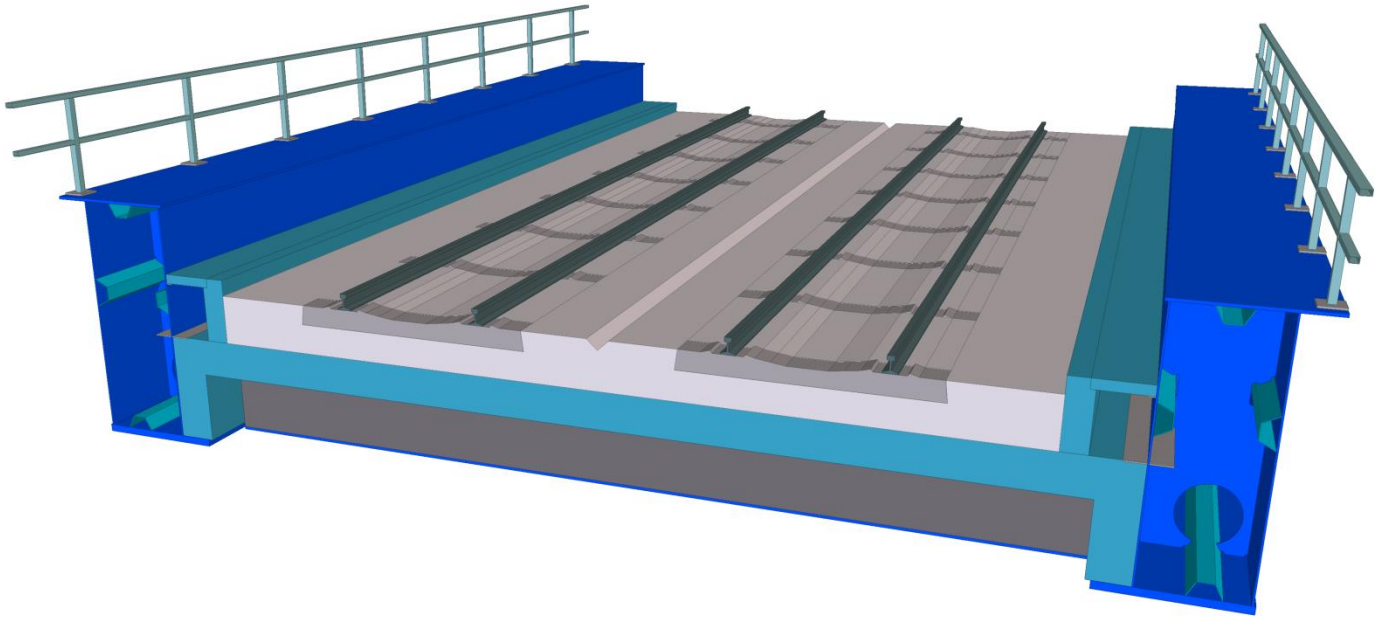
Segmente

Exemplul 1 / VTR Rail

Pod – SABAR I + II

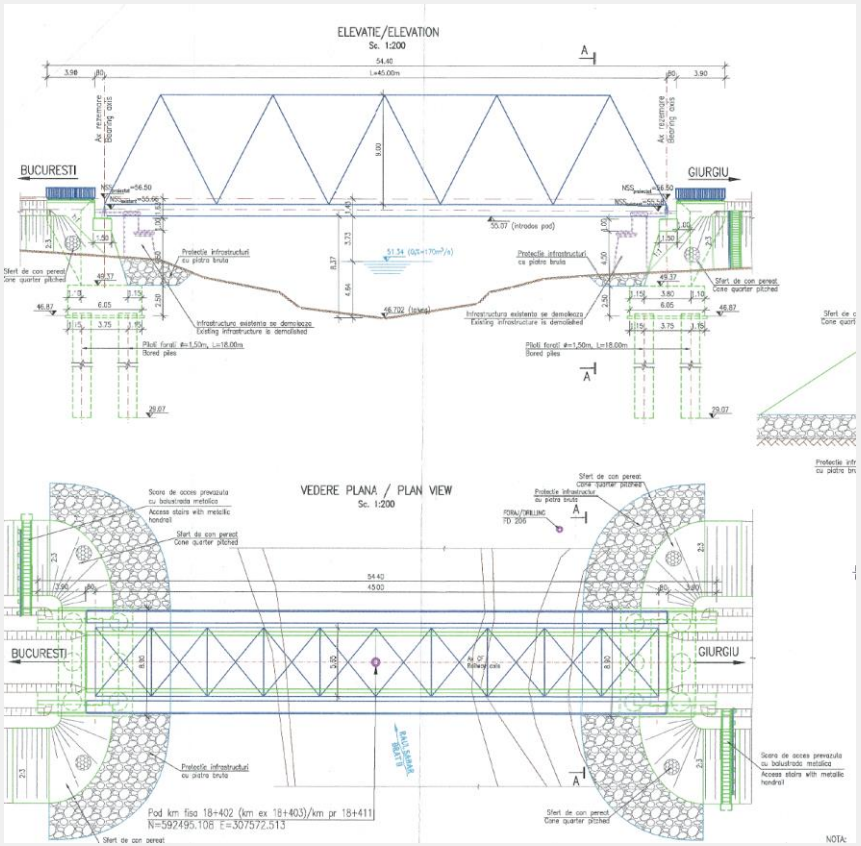
MODERN STRUCTURAL CONCEPT for RAILWAY BRIDGES

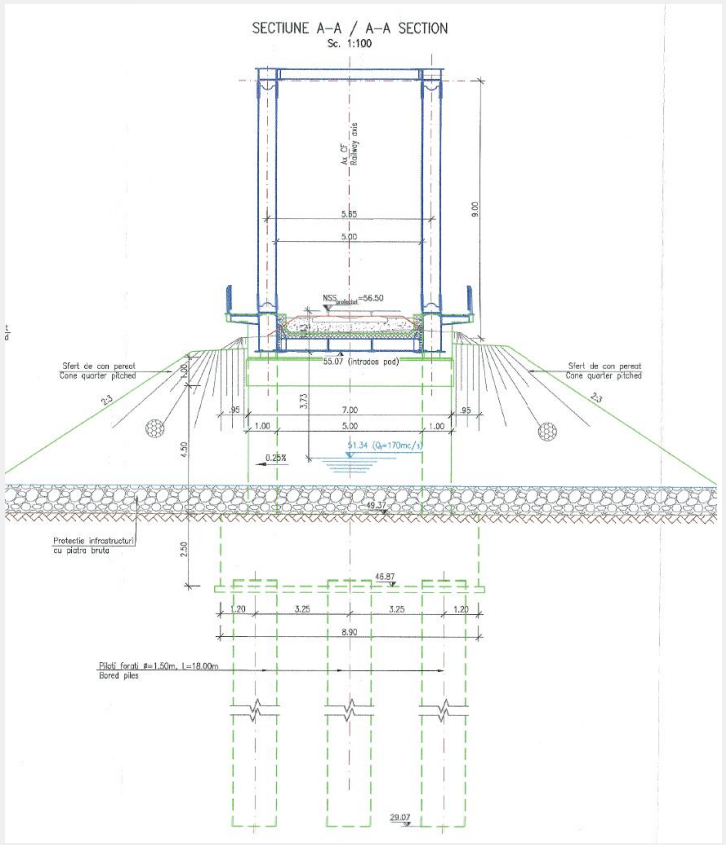
The present tendency and concept for a railway bridge is, in a way, very similar to that for a road bridge!!!



Exemple CF

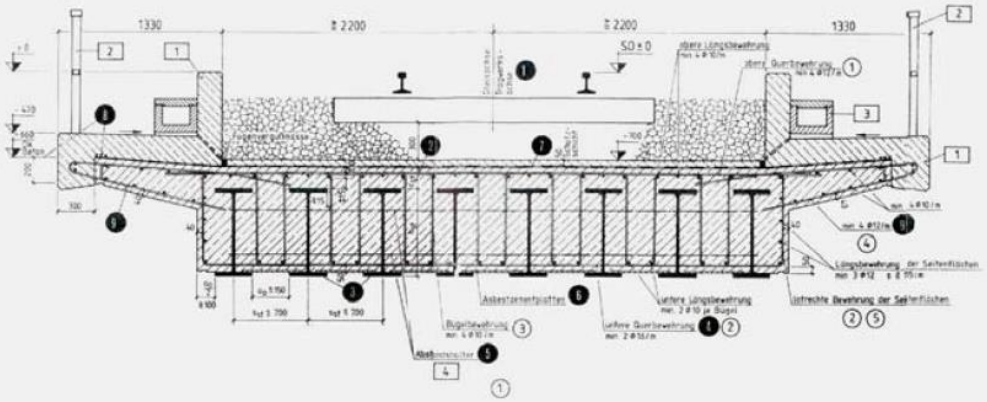
Pod km 18+411 – SABAR II





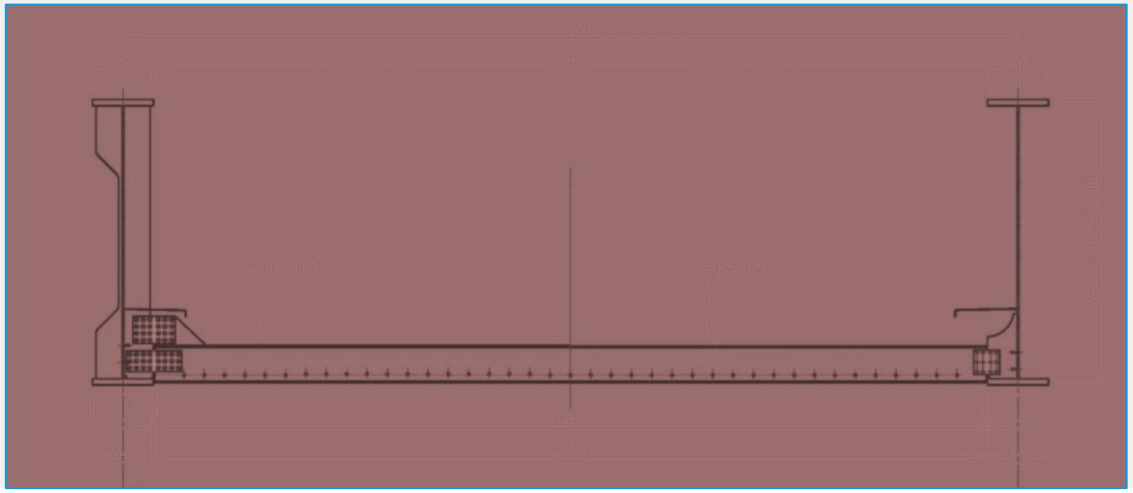
Railway bridges

- longitudinal

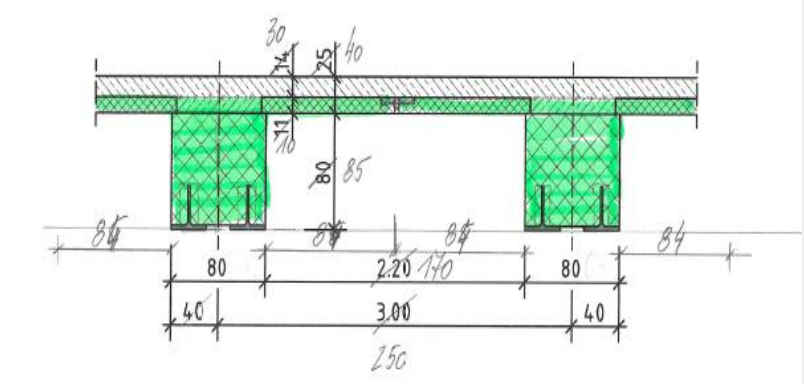


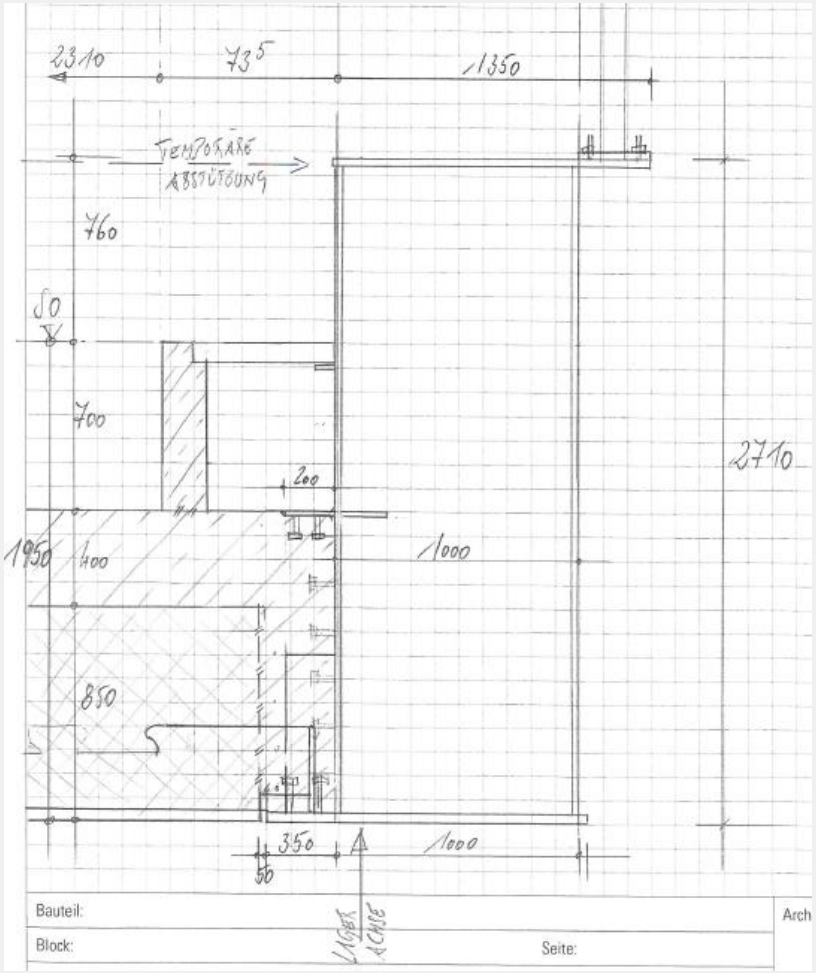
- transversal

Railway bridges

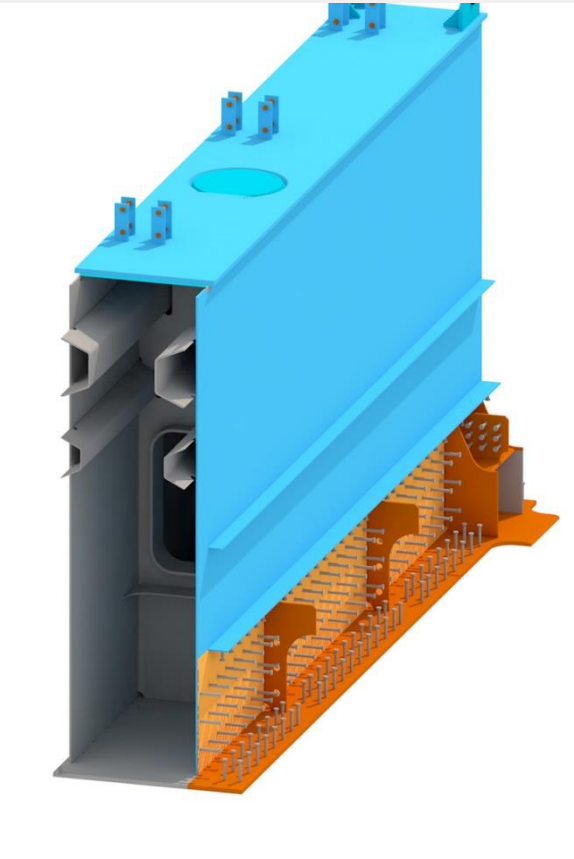


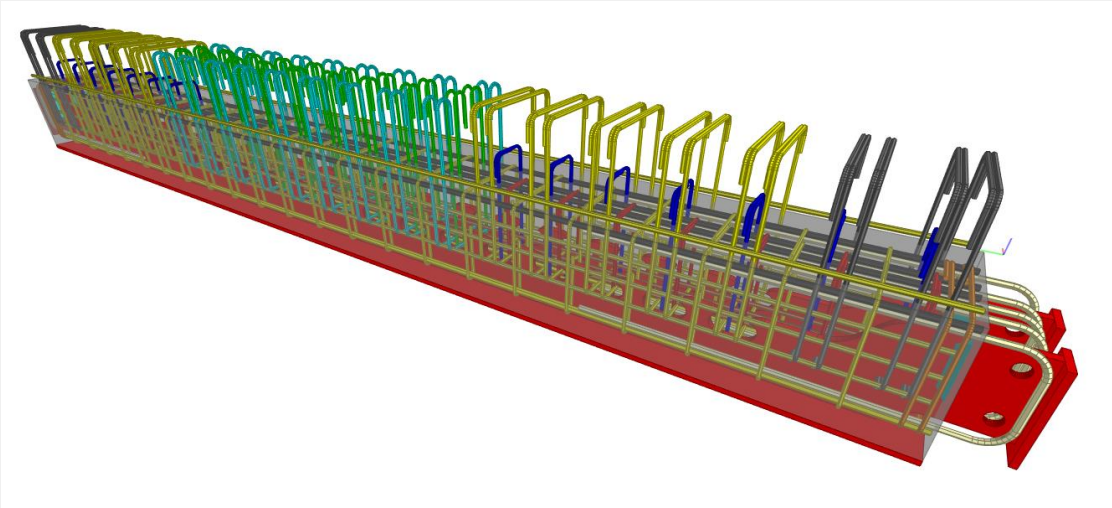
VTR Rail


30
14
25
40
11
10
80
85
84
80
2.20
170
80
40
3.00
40
250

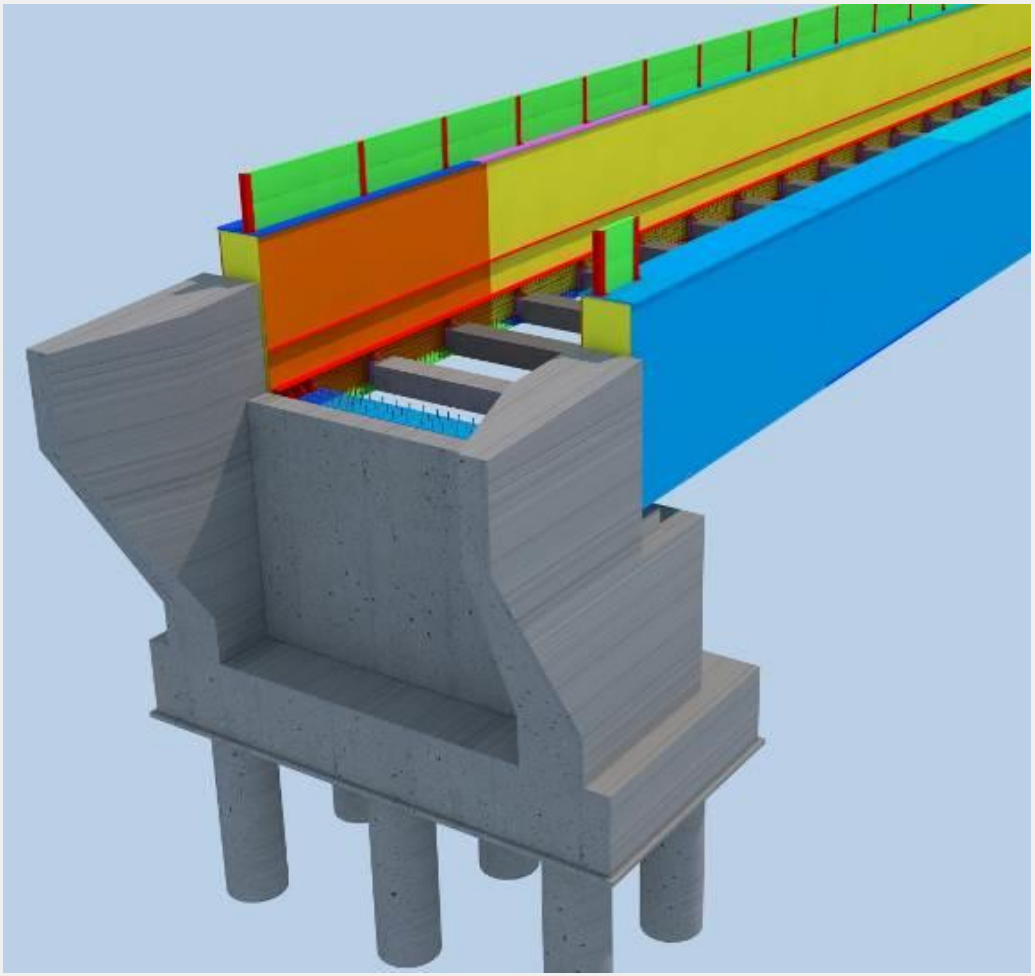

2310
735
1350
TEMPORÄRE ABSTÜTZUNG
760
50
700
200
2710
1950
400
1000
850
350
1000
50
Bauteil:
Block:
Seite:
Arch

VTR Rail

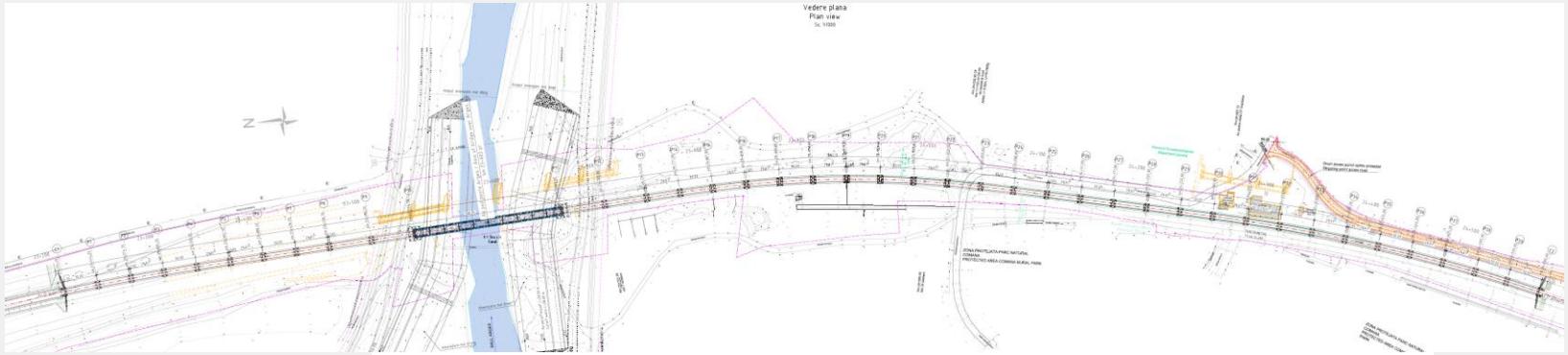


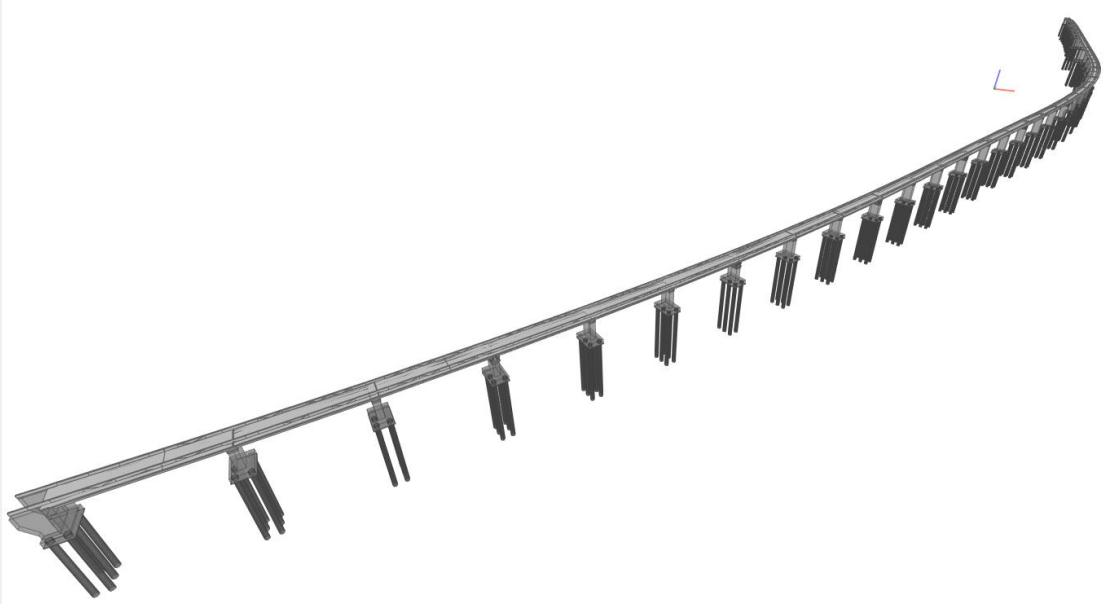


VTR Rail

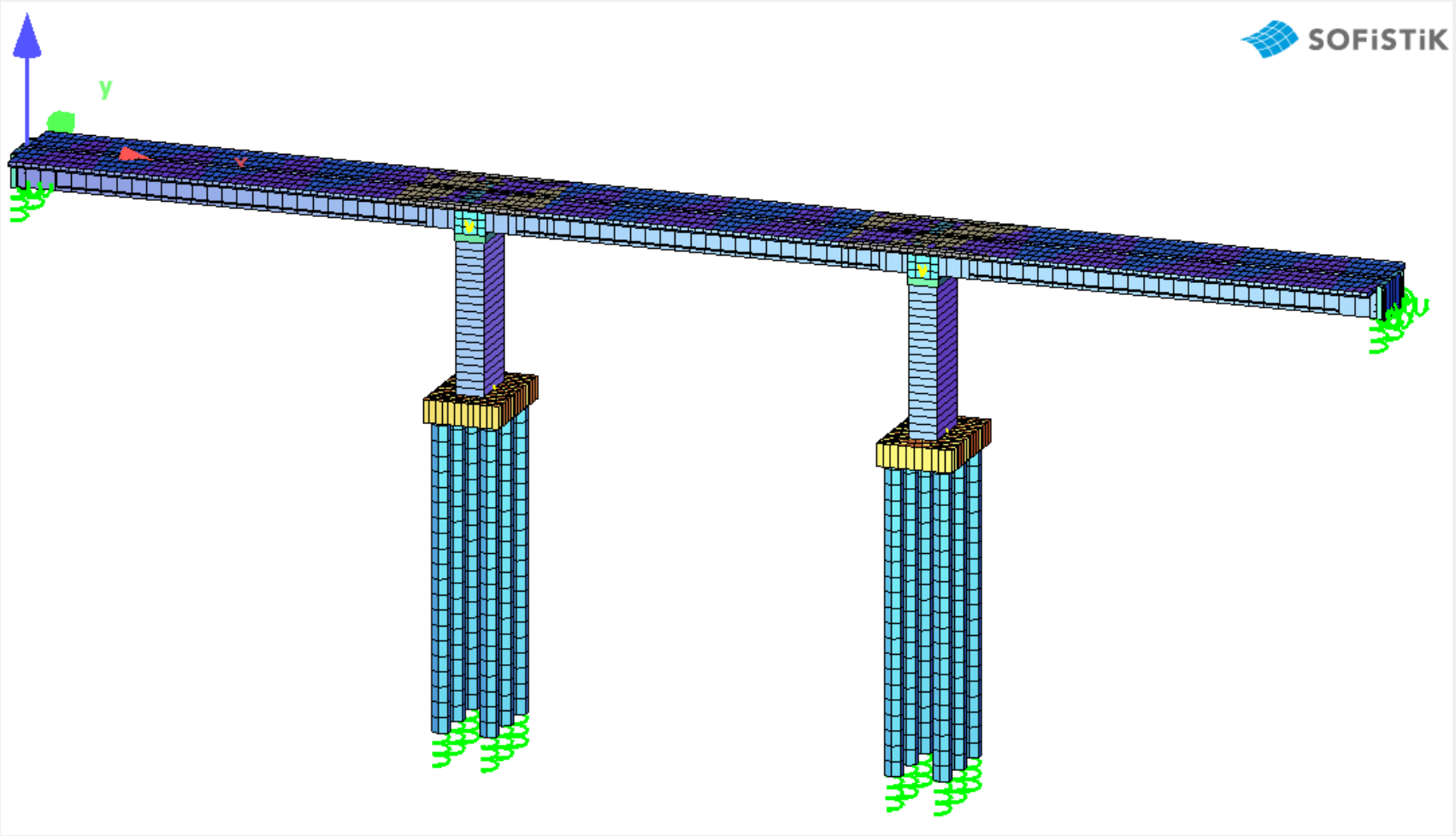


Viaduct CF

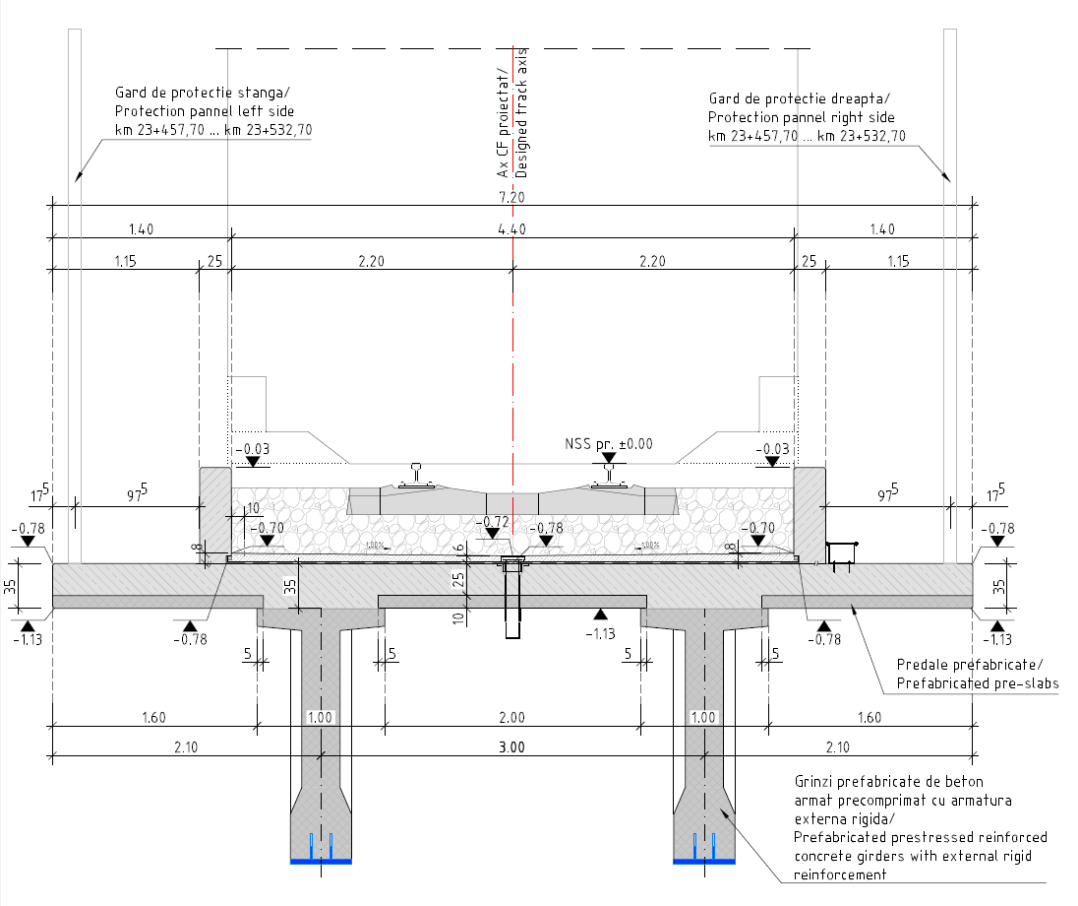




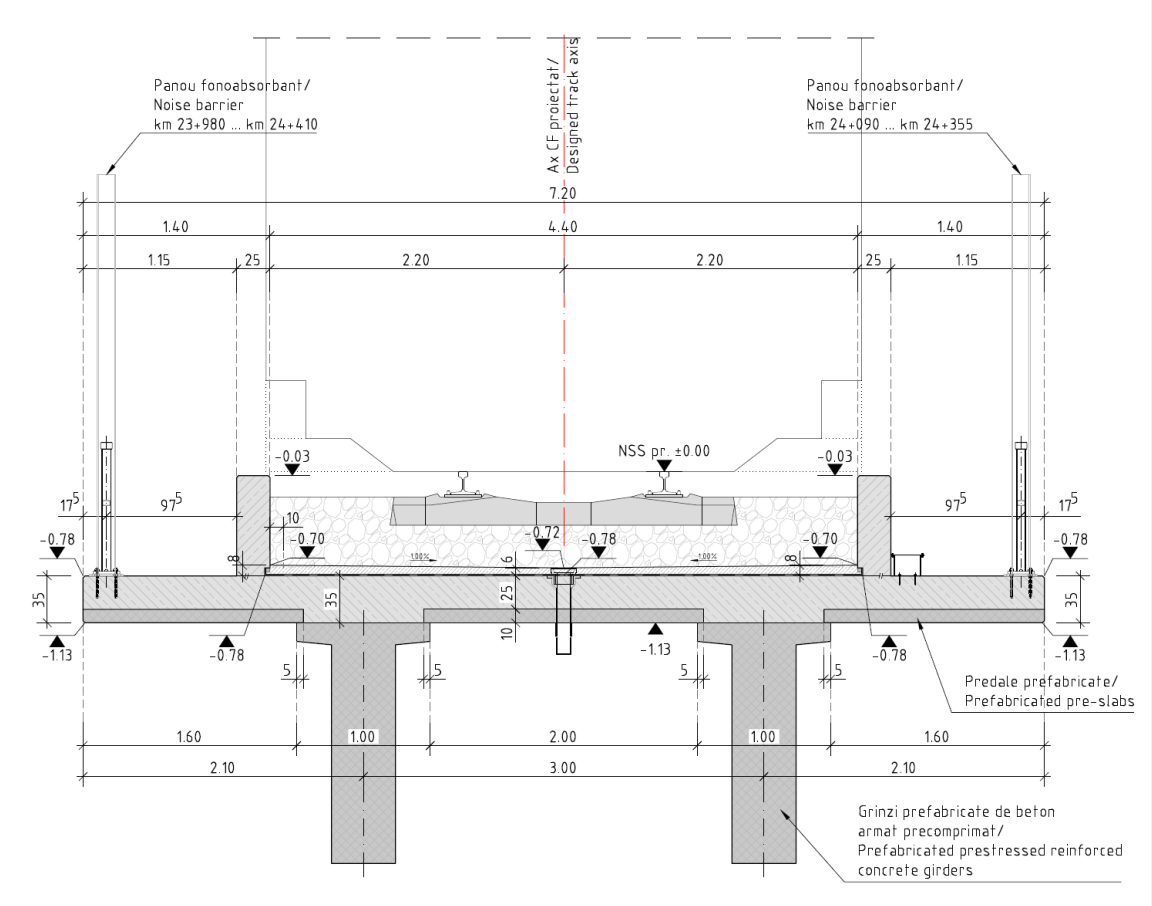
Viaduct CF



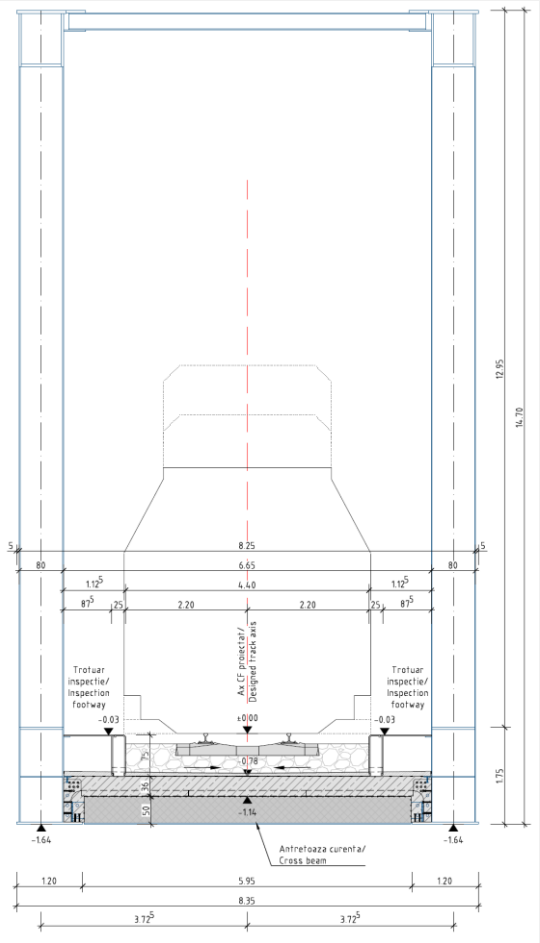
Viaduct CF

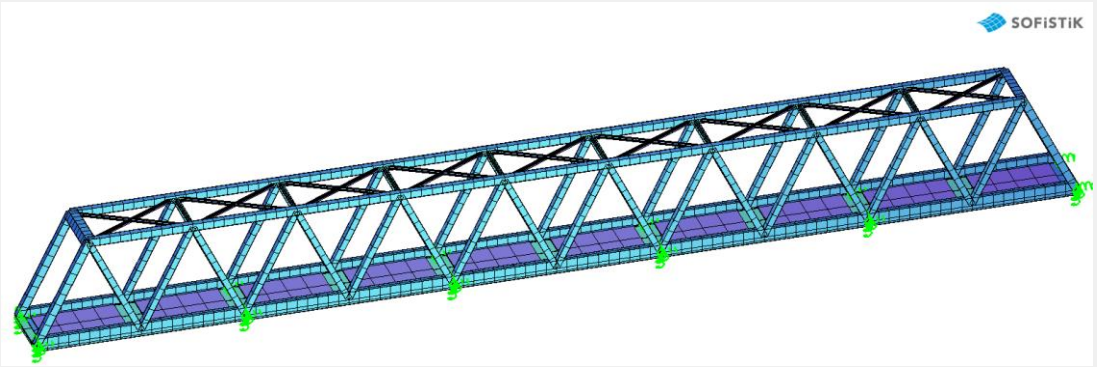

Gard de protectie stanga/
Protection pannel left side
km 23+457,70 ... km 23+532,70
Ax CF proiectat/
Designed track axis
Gard de protectie dreapta/
Protection pannel right side
km 23+457,70 ... km 23+532,70
7.20
1.40
4.40
1.40
1.15
25
2.20
2.20
25
1.15
NSS pr. ±0.00
-0.03
-0.03
17.5
97.5
97.5
17.5
10
-0.70
-0.72
-0.78
-0.70
-0.78
-0.78
35
35
25
10
-1.13
-0.78
-1.13
-0.78
-1.13
5
5
5
5
Predale prefabricate/
Prefabricated pre-slabs
1.60
1.00
2.00
1.00
1.60
2.10
3.00
2.10
Grinzi prefabricate de beton
armat precomprimat cu armatura
externa rigida/
Prefabricated prestressed reinforced
concrete girders with external rigid
reinforcement

Viaduct CF


Panou fonoabsorbant/
Noise barrier
km 23+980 ... km 24+410
Ax CF proiectat/
Designed track axis
Panou fonoabsorbant/
Noise barrier
km 24+090 ... km 24+355
7.20
1.40
4.40
1.40
1.15
25
2.20
2.20
25
1.15
NSS pr. ±0.00
-0.03
-0.03
-0.78
-0.70
-0.72
-0.78
-0.70
-0.78
-1.13
-0.78
-1.13
-0.78
-1.13
Predale prefabricate/
Prefabricated pre-slabs
1.60
1.00
2.00
1.00
1.60
2.10
3.00
2.10
Grinzi prefabricate de beton
armat precomprimat/
Prefabricated prestressed reinforced
concrete girders

Viaduct CF


Trotuar inspectie/ Inspection footway
Ax CF proiectat/ Designed track axis
Trotuar inspectie/ Inspection footway
Antretoaza curenta/ Cross beam
8.25
6.65
4.40
2.20
2.20
5.95
8.35
1.20
1.20
12.95
14.70
1.75


SOFiSTiK

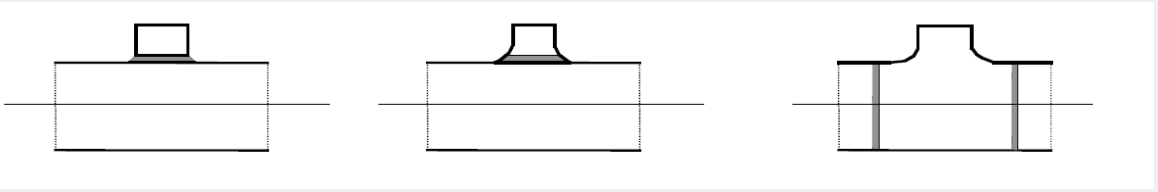
ECCS – TC6

ECCS – TC6

ECCS – TC6

ECCS – TC6

ECCS – TC6

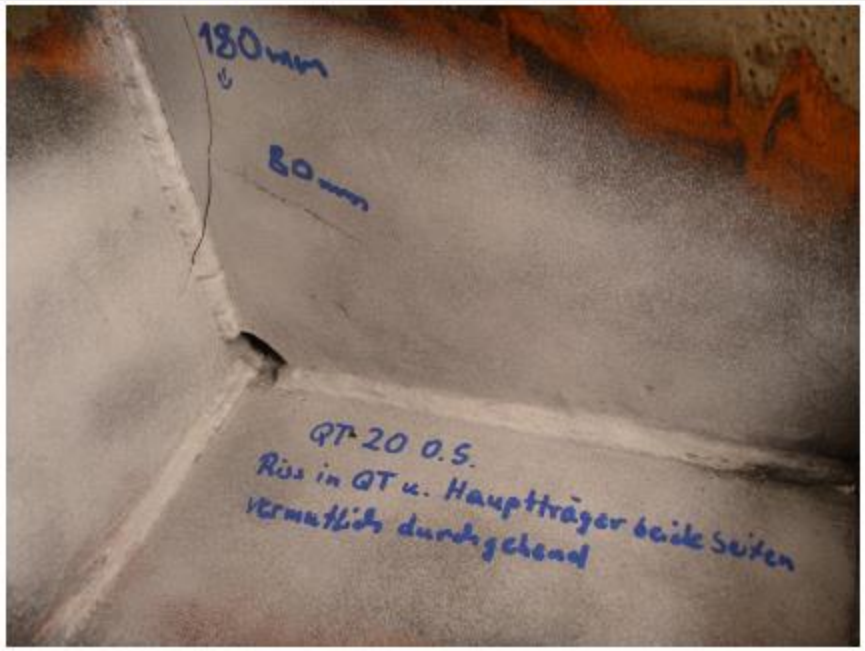


ECCS – TC6

ECCS – TC6 Rheinbrücke Leverkusen

Rheinbrücke Leverkusen

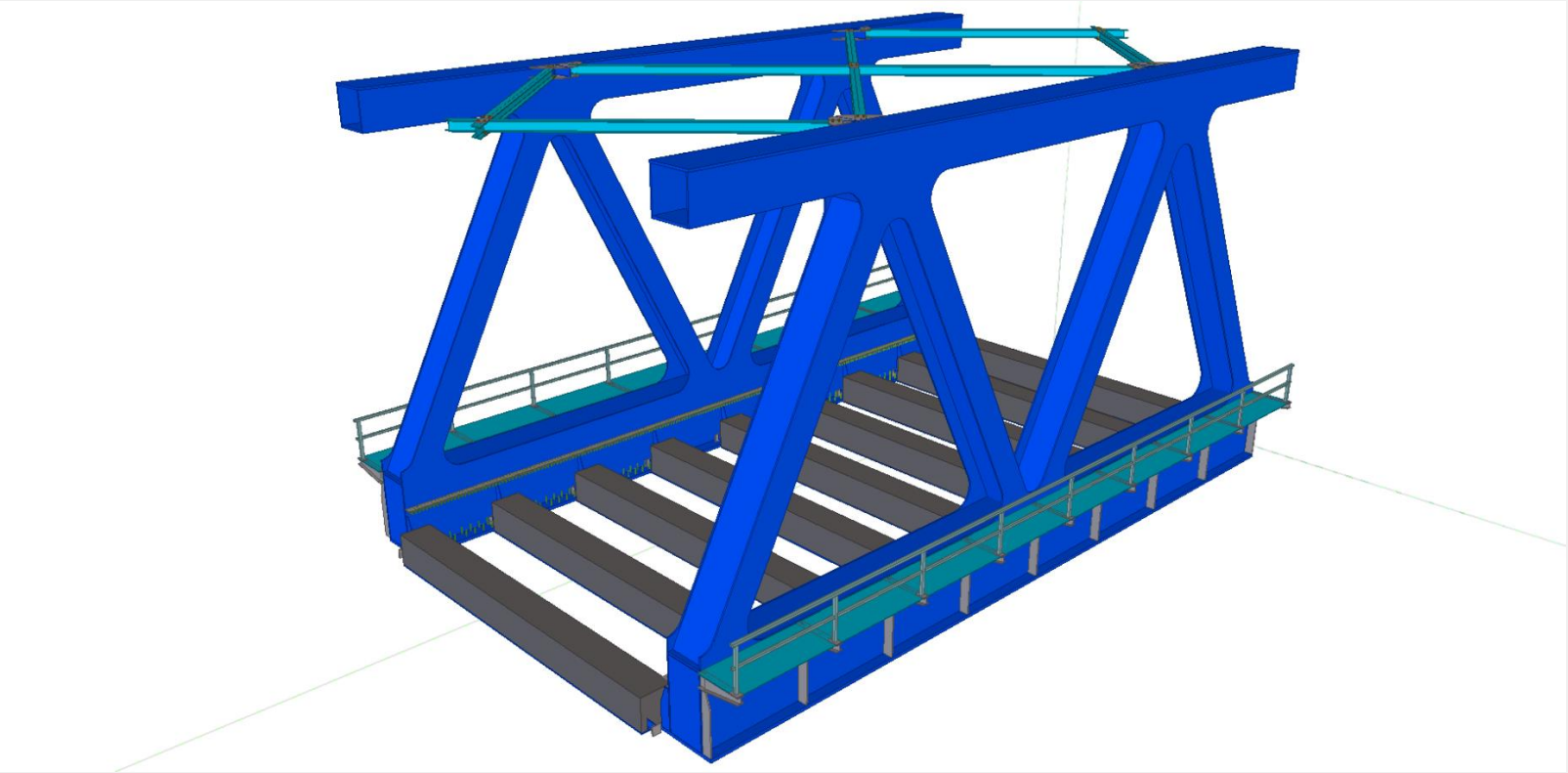
Anul construcţiei: 1965 !!!!



Rheinbrücke Leverkusen

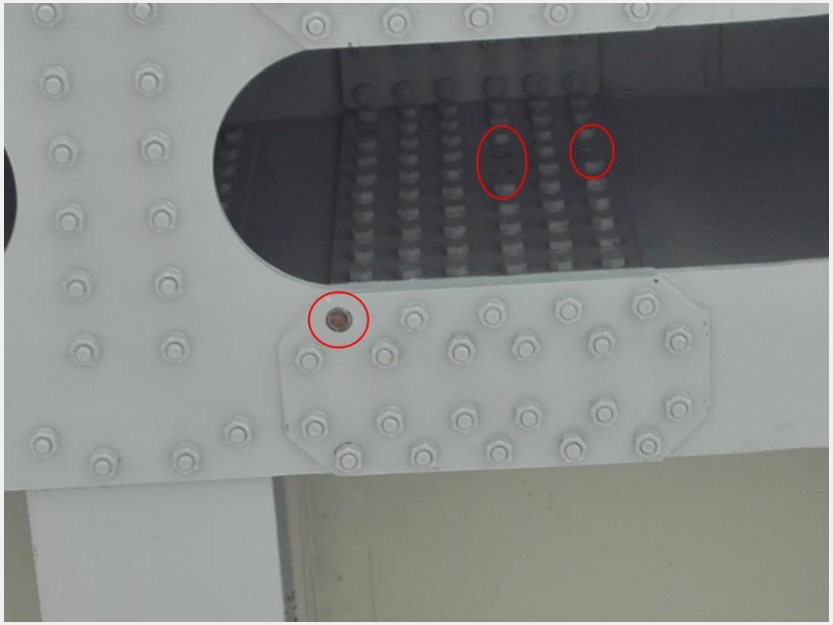
Rheinbrücke Leverkusen

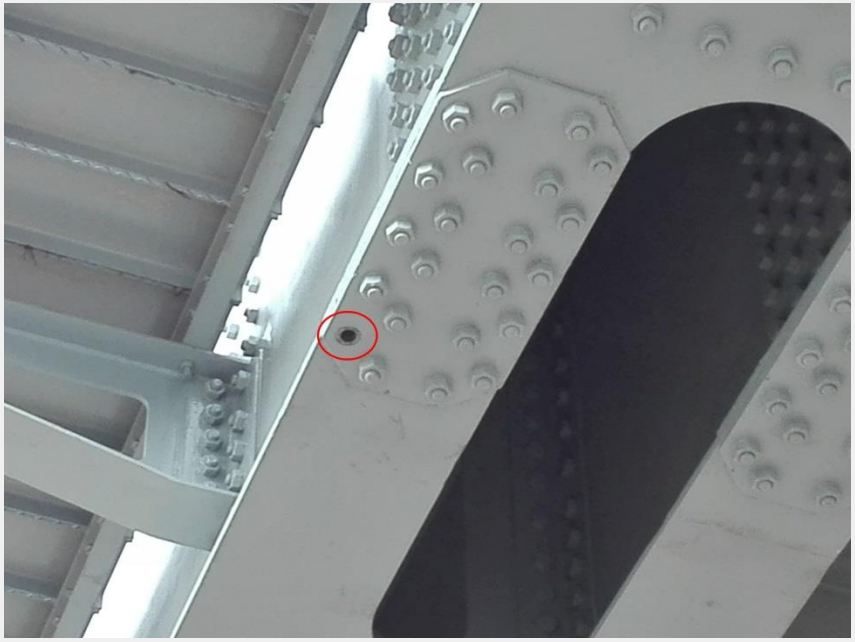
ECCS – TC6



ECCS – TC6

ECCS – TC6





ECCS – TC6

ECCS – TC6

SSF-Kaprun-190720-0080-01.tif

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SSF-Kaprun-190720-0128-01.tif

SSF-Kaprun-190720-0134-01.tif

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SSF-Kaprun-190720-0143-02.tif

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Edward Petzek
Radu Băncilă *Editors*

Economical Bridge Solutions based on innovative composite dowels and integrated abutments

Ecobridge

Economical Bridge Solutions based on innovative composite dowels and integrated abutments

This book is an outcome of the research project "**ECOBRIDGE** – *Demonstration of* ***ECO****nomical* ***BRIDGE*** *solutions based on innovative composite dowels and integrated abutments* – RFCS – CT 2010-00024", which has been co-funded by the Research Fund for Coal and Steel (R.F.C.S.) of the European Community.

The main topics of the book are the following: design of integral bridges, innovative composite dowels for the shear transmission, construction of bridges, structural analysis of bridges and monitoring. The book joins the technical experience and the contributions of the involved research partners. The technical content of all the papers is present-day in the field of the design, construction and monitoring of innovative composite bridges. The efficient design and construction improve and consolidate the market position of steel construction and steel producing industry. In addition, the advanced forms of construction are contributing to savings in material and energy consumption for the structure during production and maintenance. All time savings in construction and maintenance result in large benefits for the bridge owners but also for the community as less disturbance of the traffic will occur.

The Editors

Assoc. Prof. Dr.-Ing. Edward PETZEK teaches at the "Politehnica" University of Timişoara (Romania), Faculty of Civil Engineering and starting with the year 2006 he leads the design office SSF-RO Ltd. Mr. Petzek is an ECCS member in the Bridge Committee and in the Commission TC6.

Prof. Dr. Ing. Radu BĂNCILĂ is Professor for Steel Constructions at the "Politehnica" University of Timişoara (Romania), Faculty for Civil Engineering.

Thank you for your kind attention !

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