BRIDGES WITH PROGRESSIVELY ERECTED DECKS

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Launching Scaffolding, M70-S, firm BERD, Portugal
(Organic Prestressing System)

Weight of the scaffolding and formwork 840 tons

Bridge across the Hostovsky Creek Valley,
Expressway R1, Slovakia

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Launching Scaffolding, M70-S, firm BERD, Portugal (Organic Prestressing System)

System OPS

Weight of the scaffolding and formwork: 840 tons

Bridge across the Hostovsky Creek Valley, Expressway R1, Slovakia
Launching Scaffolding, M70-S, firm BERD, Portugal (Organic Prestressing System)  
Weight of the scaffolding and formwork 840 tons

Bridge across the Hostovský Creek Valley, Expressway R1, Slovakia
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Design of precast struts

Construction stage

Deflected shape

Construction loads

Bending moment

Buckling shape

Final stage

Deflected shape

Bending moment

Buckling shape (\(\lambda = 93\), \(L_{cr} = 0.38\))

Bridges across the Lazny Creek Valley, Motorway D1, Slovakia

Bending moment

Buckling shape (\(\lambda = 43\), \(L_{cr} = 0.55\))
Bridge across the Lazny Creek Valley, Motorway D1, Slovakia
Precast struts neglected

Precast struts accounted for

Precast struts connected into 3-cell box girder

Bridge across the Lazny Creek Valley, Motorway D1, Slovakia
Structural model - construction sequence

Bridge across the Lazny Creek Valley, Motorway D1, Slovakia

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Structural model - construction sequence

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Structural Model - Construction Sequence

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structural model - construction sequence

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Bridges across the Lazny Creek Valley, Motorway D1, Slovakia
Structural model - construction sequence

Bridge across the Lazny Creek Valley, Motorway D1, Slovakia
Bridge across the Lazny Creek Valley,
Motorway D1, Slovakia

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Structural model - construction sequence

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Structural model - construction sequence

Bridge across the Lazny Creek Valley, Motorway D1, Slovakia

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Stress redistribution (permanent loads)

Section next to support diaphragm

Section at mid-span

Section at the axis of the support diaphragm

Due to the creep of concrete the compressive stress tends to spread from the parts they were originally more stressed (spine girder) towards the parts which received less compression at the time of stressing (external overhangs).
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Bridge across the Lazny Creek Valley, Motorway D1, Slovakia

Bridge across the Stefanovsky Creek Valley, Motorway D1, Slovakia
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Bridge across the Stefanovsky Creek Valley, www.shp Motorway D1, Slovakia
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Bridge across the Lodina Creek Valley, Motorway D1, Slovakia

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Lochkov Bridge, Prague, Czech Republic
Bridge across the Hrabynka Creek Valley, Mokre Lazce, Czech Republic
Bridge across the Kremlice Creek Valley, Mokre Lazce, Czech Republic
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Bridge across the Kremlice Creek Valley, Mokre Lazce, Czech Republic
Bridge across the Hostovsky Creek Valley, Expressway R1, Slovakia

Bridge across the Hrabyňka Creek Valley, Mokre Lazce, Czech Republic