Frederikssund Fjord Link

The Work of Structural Engineers
DTU - 27. October 2016

Henrik Vincentsen

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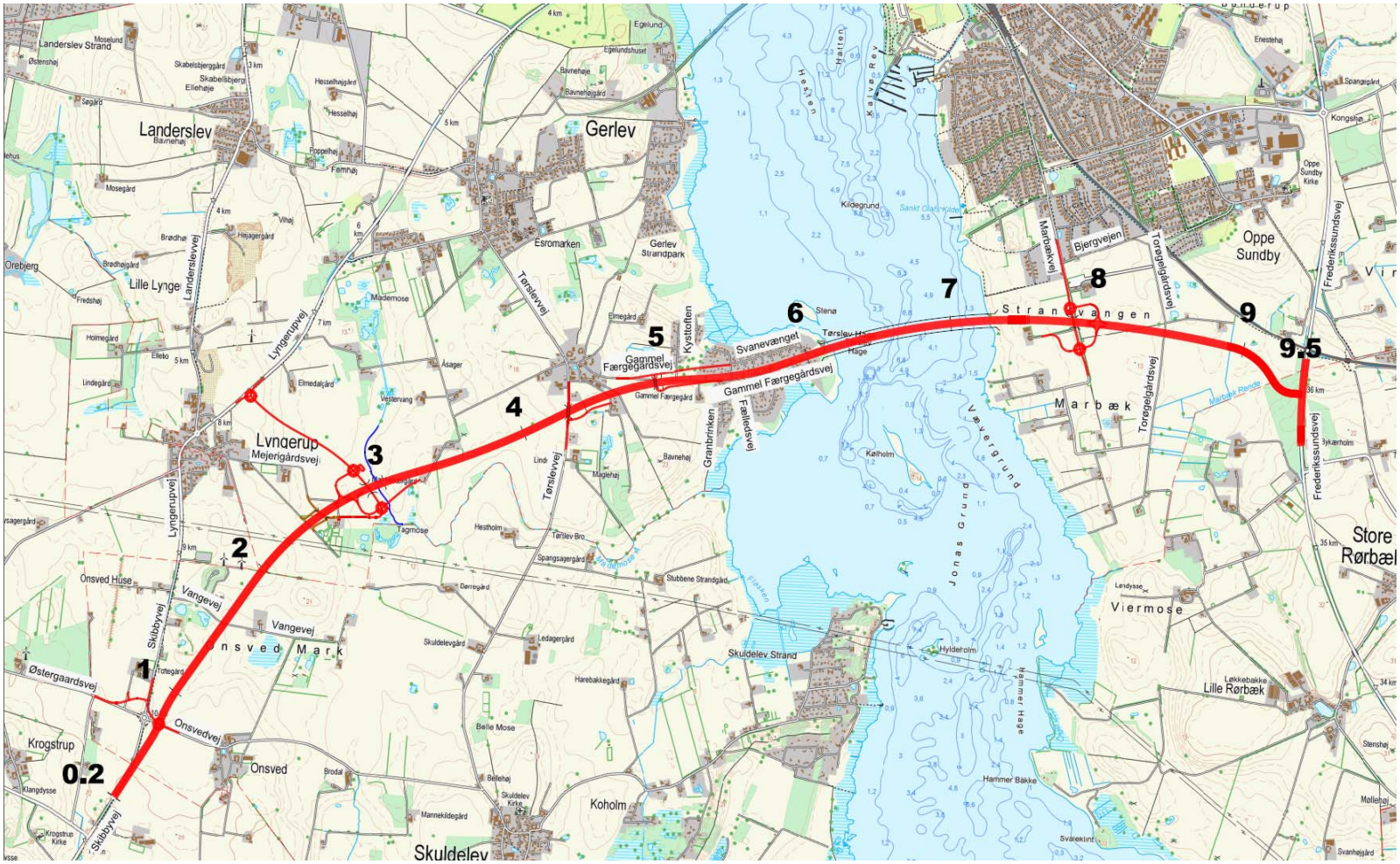
Frederikssund Fjord Link

9,5 km Dual carraigeway including a High Bridge



East of Fjord

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High Bridge – 1,4 km

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High Bridge, V-shape piers

Højbroen, set fra Tørslev Hage mod øst

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High Bridge, abutment set back.

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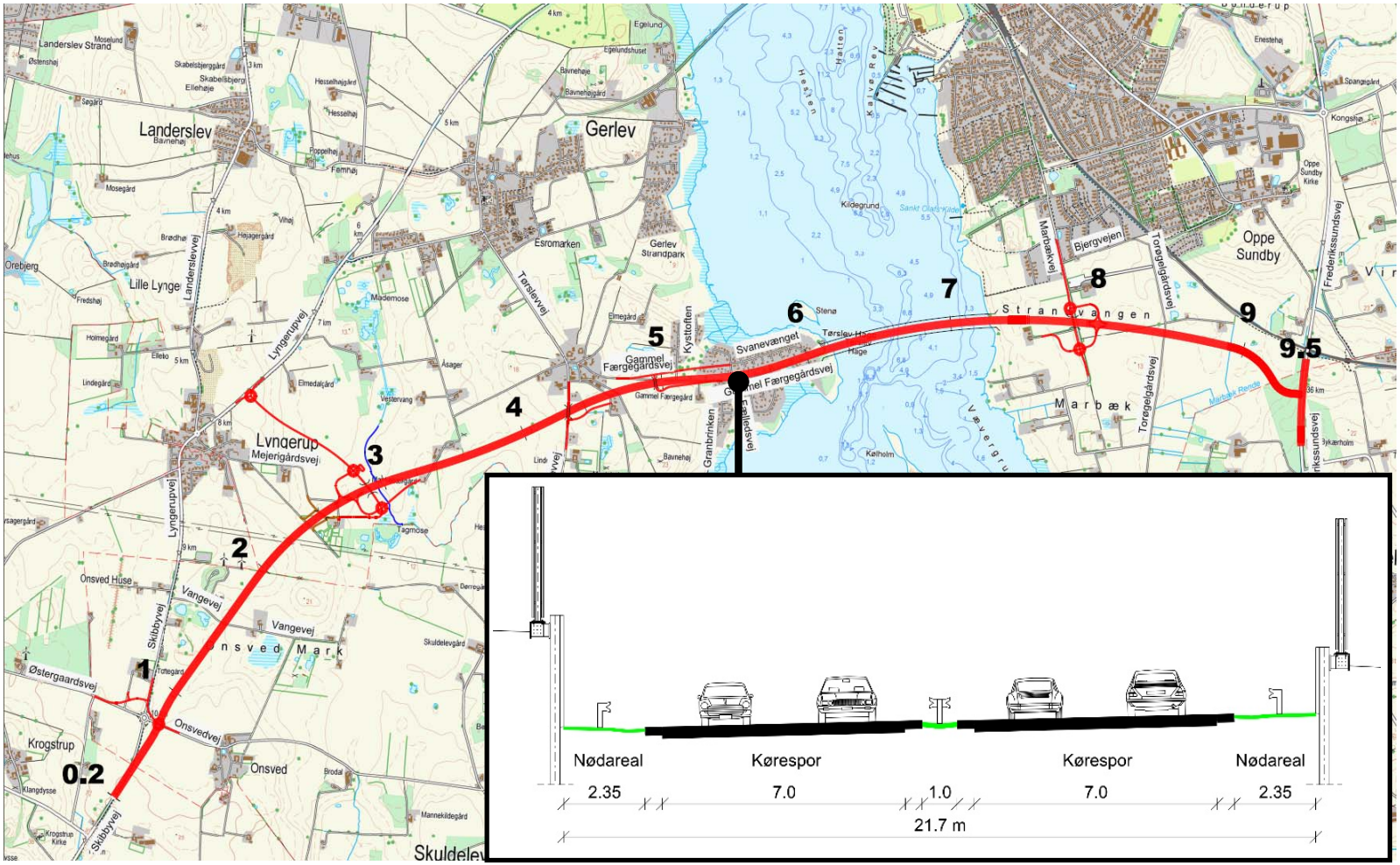
Typical cross section - Tørslev Hage



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View from Tørslev Hage towards east

Vejanlæg og støjskærme på Tørslev Hage, set mod øst

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View from Tørslev Hage towards west

Vejanlæg og støjskærme på Tørslev Hage, set mod vest

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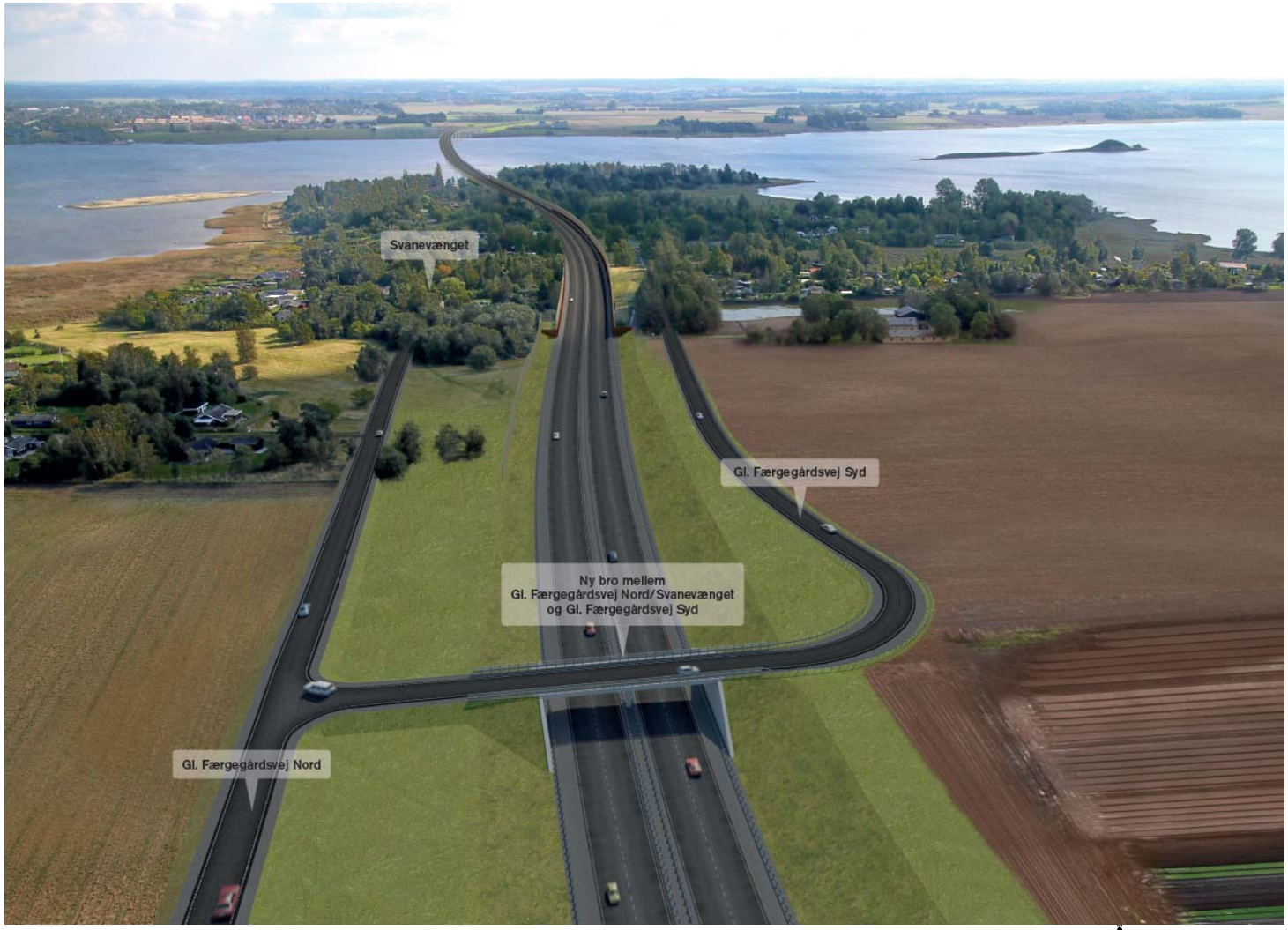
Overview, Tørslev Hage



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Dual carriageway, western section

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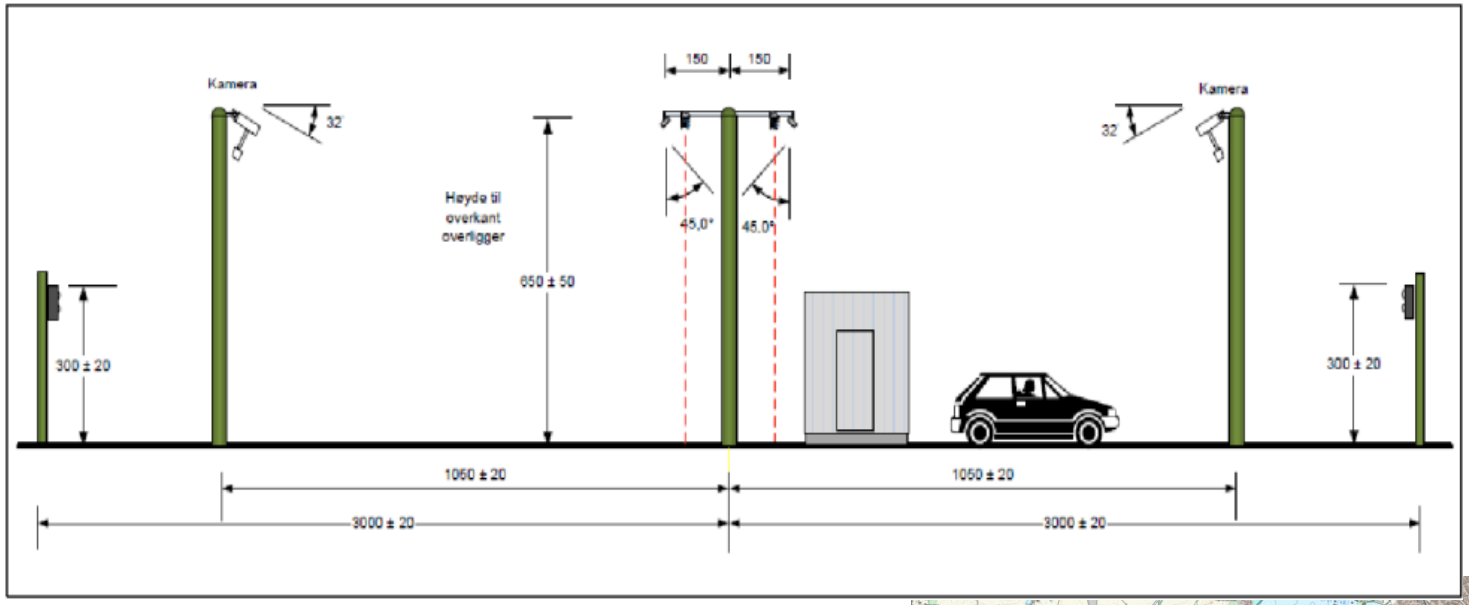
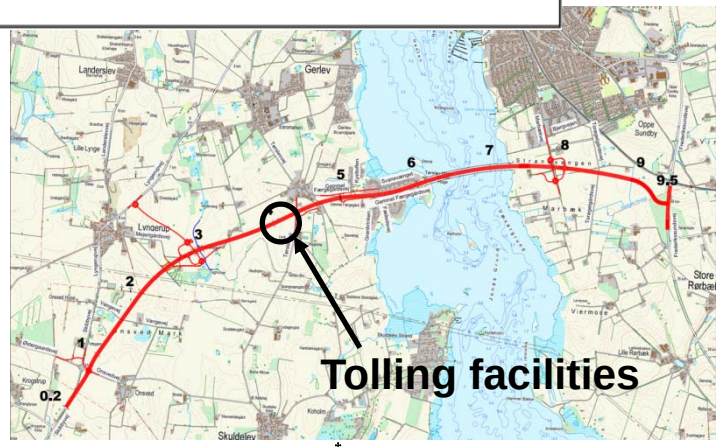
Tolling system (Free flow principal)



Fares according to the construction law:

- Passenger cars, one way - 14 DKK.
- Lorries/Busses, one way - 41 DKK.
- Vehicals above 3,5t are permitted from crossing Crownprins Frederiks Bridge



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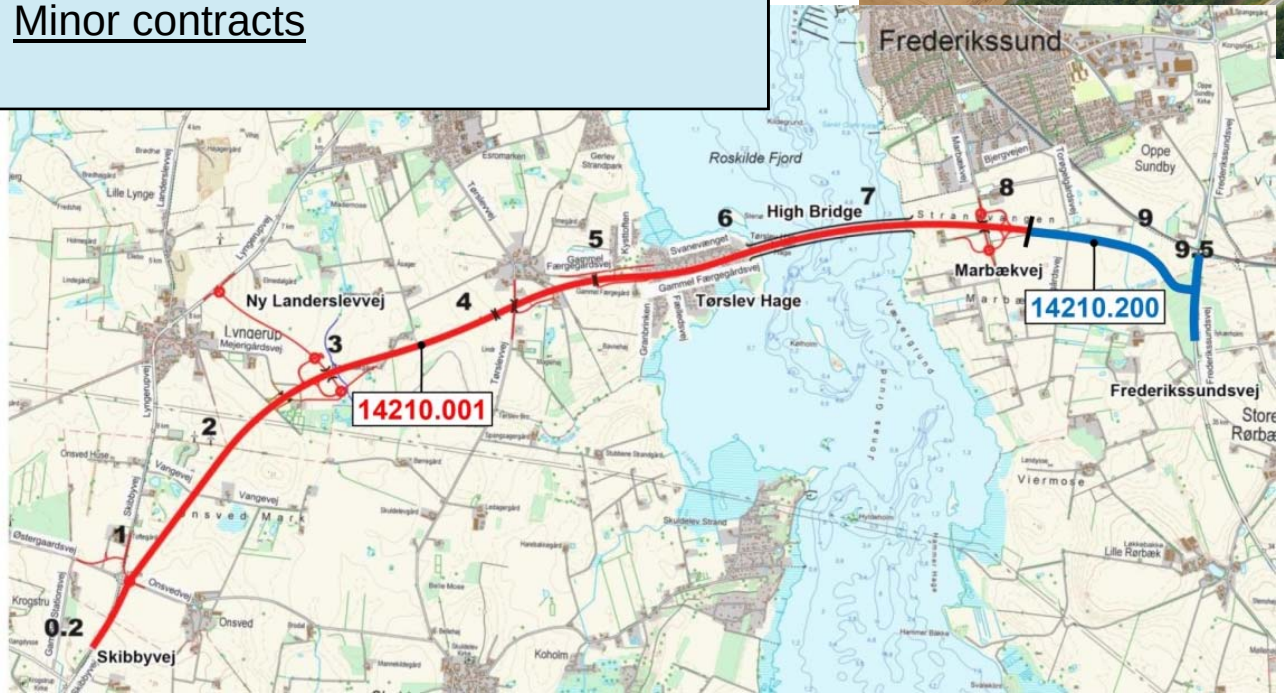
Contracts

- Contract 001 – Turnkey contrackt
- Contract 200 – Access road
- Contract 100 – Grade separated junction east
- Tolling System
- Minor contracts



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Procurement of Turnkey Contract

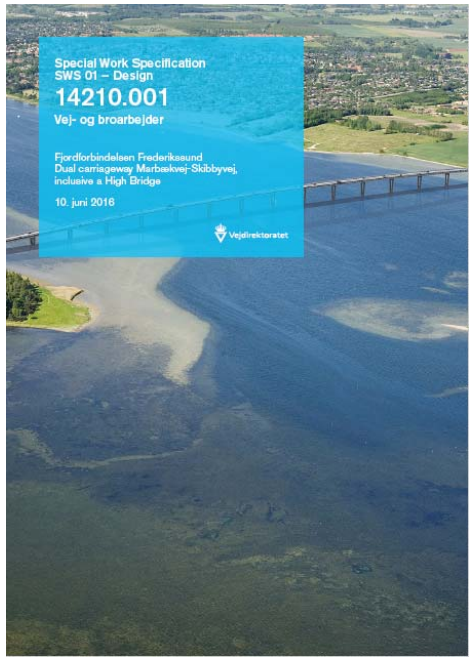
Competetive Dialogue

Objective

- Reduce cost
- Optimization of design and construction methodology
- Reduce risks
- Clarification of requirements

Programme

- Release of Tender Material, 1st edition (December 2015)
- 2 dialogue rounds (February-May 2016)
- Release of final Tender Material (June 2016)
- Contractors final submission (July 2016)



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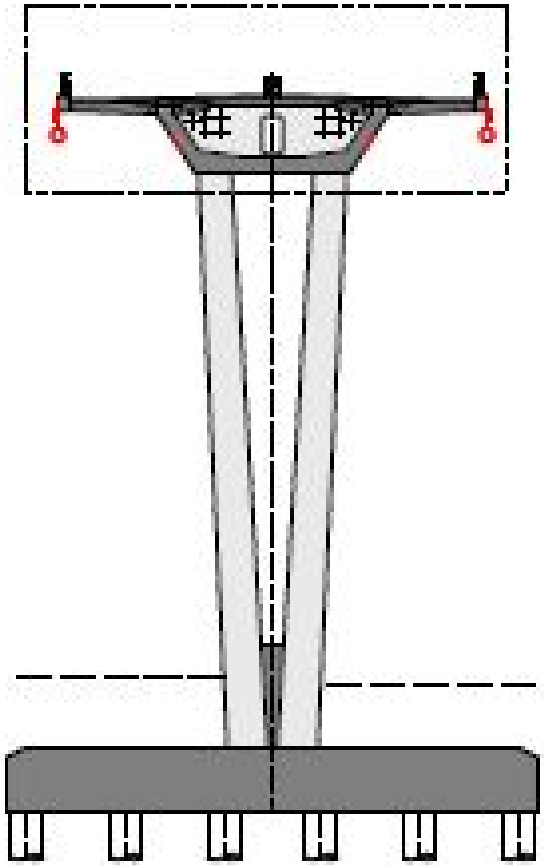
Optimization of design and Construction Methodology



Tradeoff Matrix

- Superstructure design
- Pier design
- Foundation and Pile design

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Optimization of Design and Construction Methodology

High Bridge – Superstructure

Construction Methodology

- Prefab. Segmental
- MSS
  Movable Scaffolding System
- Incremental Launching

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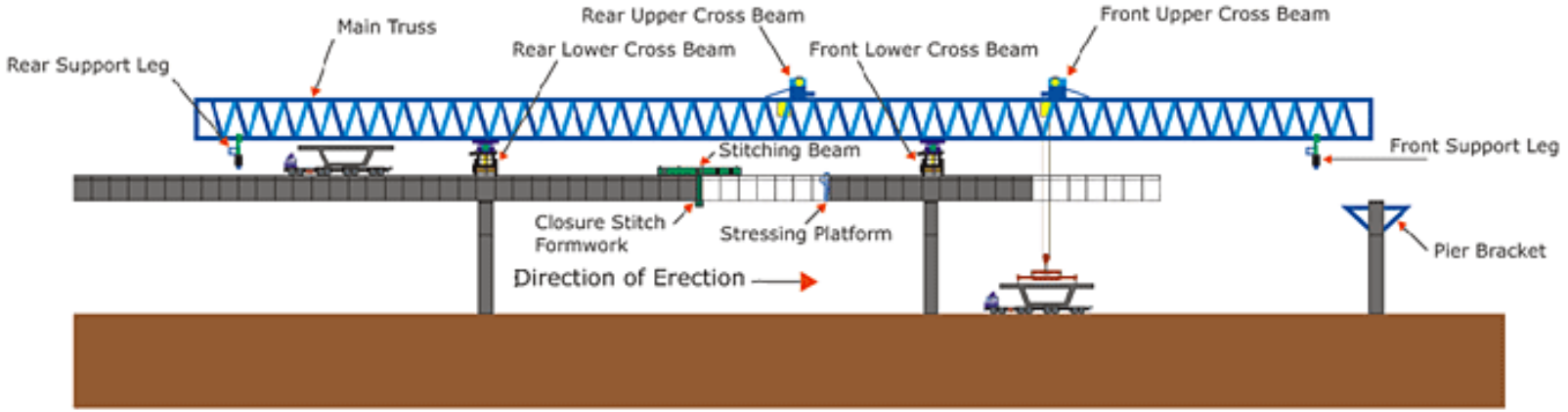
Prefab Segmental Balanced Cantilever Method (Alternative:Progressive placing)



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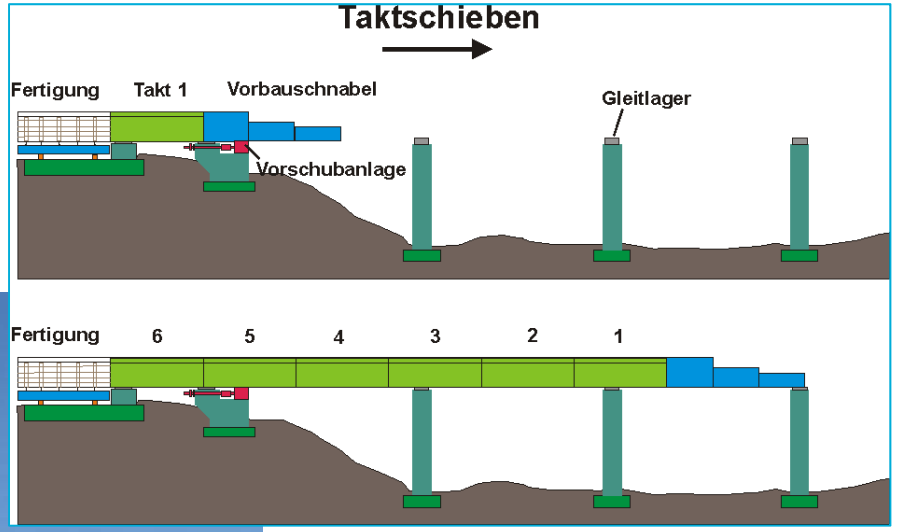
Incremental Launching



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MSS – Movable Scaffolding System

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Optimization of design and Construction Methodology

Tradeoff Matrix

	Benefits	Limitations
Prefab Seg.	Casting quality	Transportation
	Logistics	Equipment
Incremental L.	Casting quality	Span length
	Equipment	Alignment/geometry
MSS	Design case	Insitu casting
	Equipment	Construction time

Questions?

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