Erection of the

Deh Cho Cable Stayed Bridge

Eduardo Fernandez de la Pradilla, P.Eng

Director of Construction Engineering Services

Buckland & Taylor Ltd.

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Project Details

Location:	Mackenzie River near Fort Providence North West Territories, Canada
Owner:	Government of the Northwest Territories Department of Transportation
Prime contractor:	Ruskin Construction Ltd.
Design Engineer:	Infinity Engineering Group
Erection Engineering:	Buckland & Taylor Ltd.

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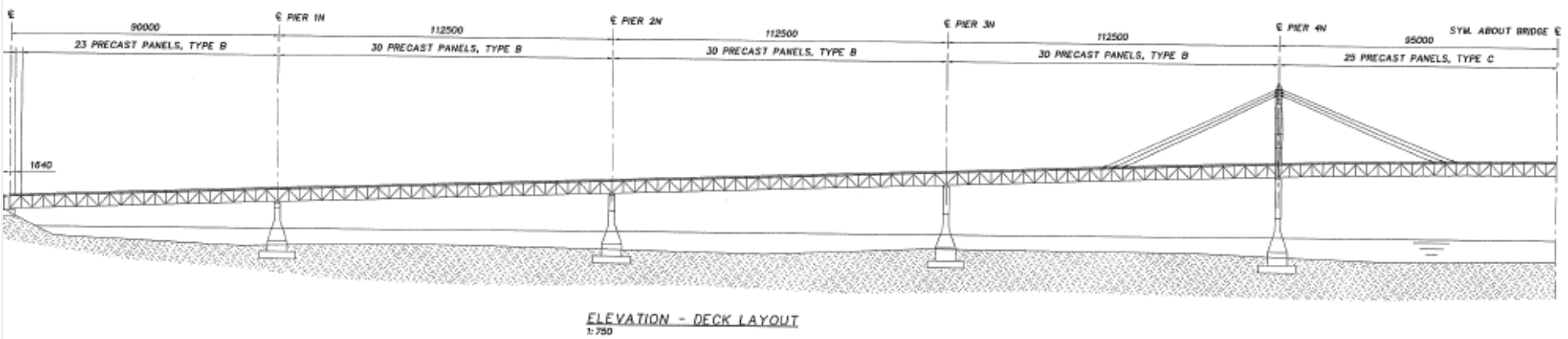
Bridge Configuration



Spans: 190m (608') main span / 1045m (3344') total length

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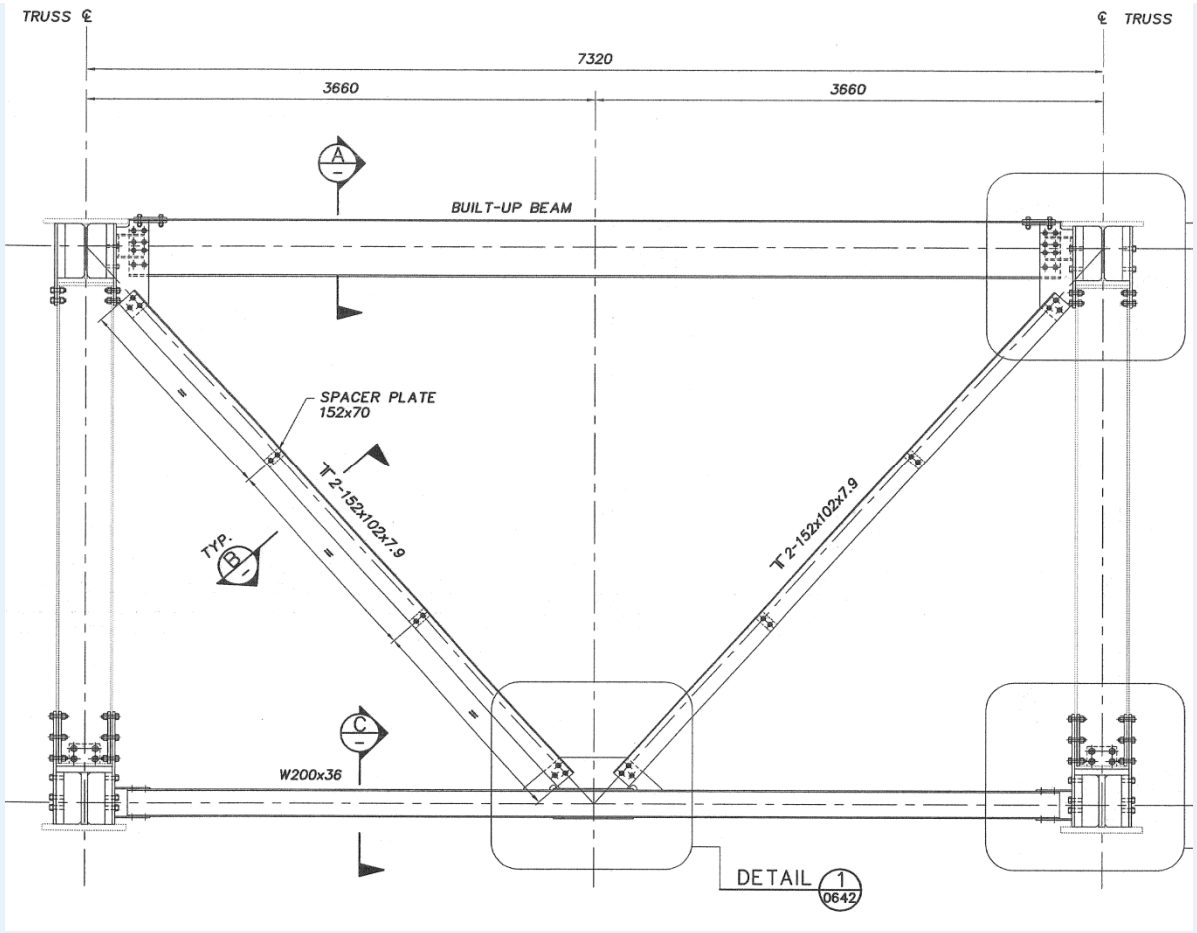
Bridge Configuration



Section: Steel truss 7032mm (277") by 4094mm (161")

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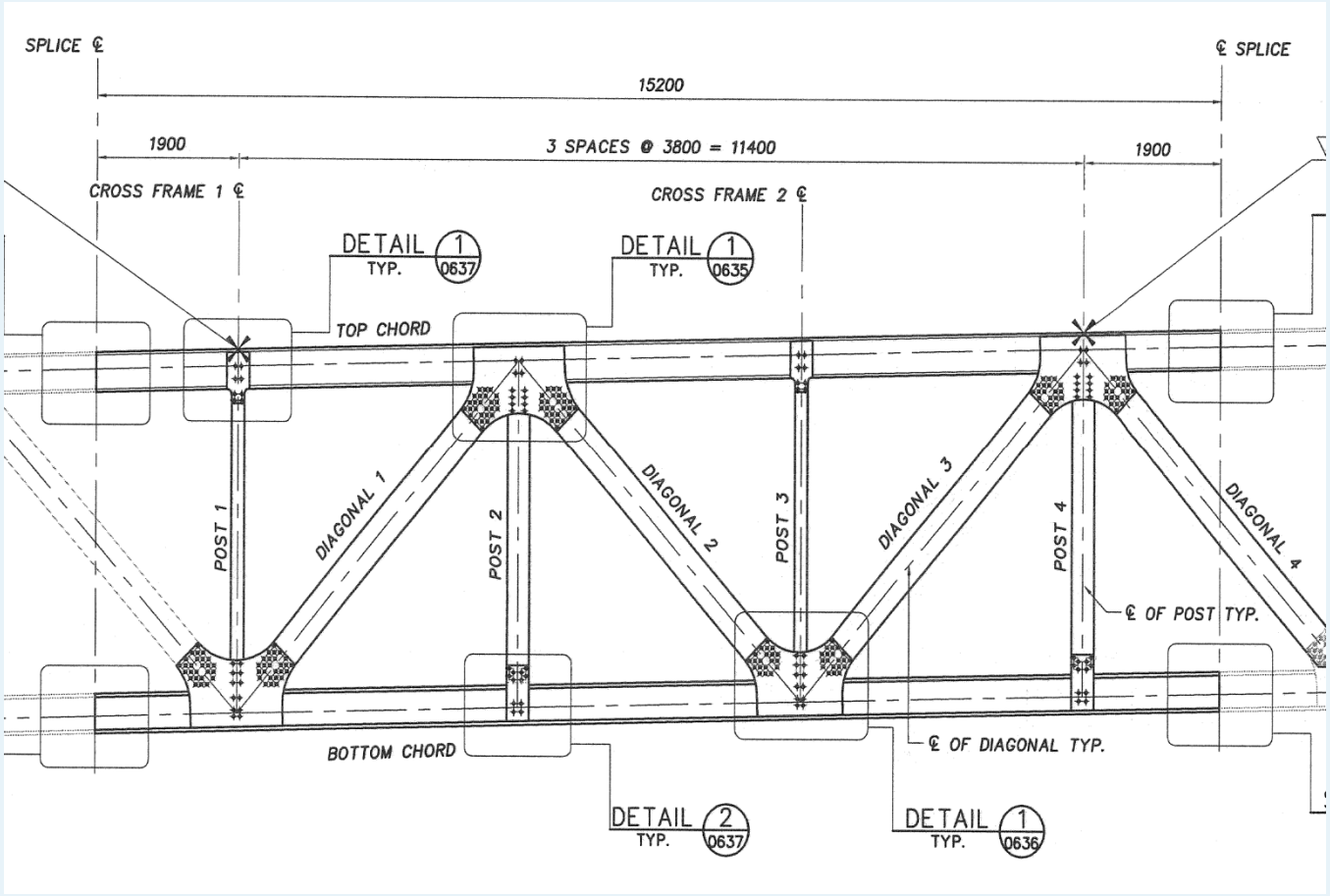
Bridge Configuration



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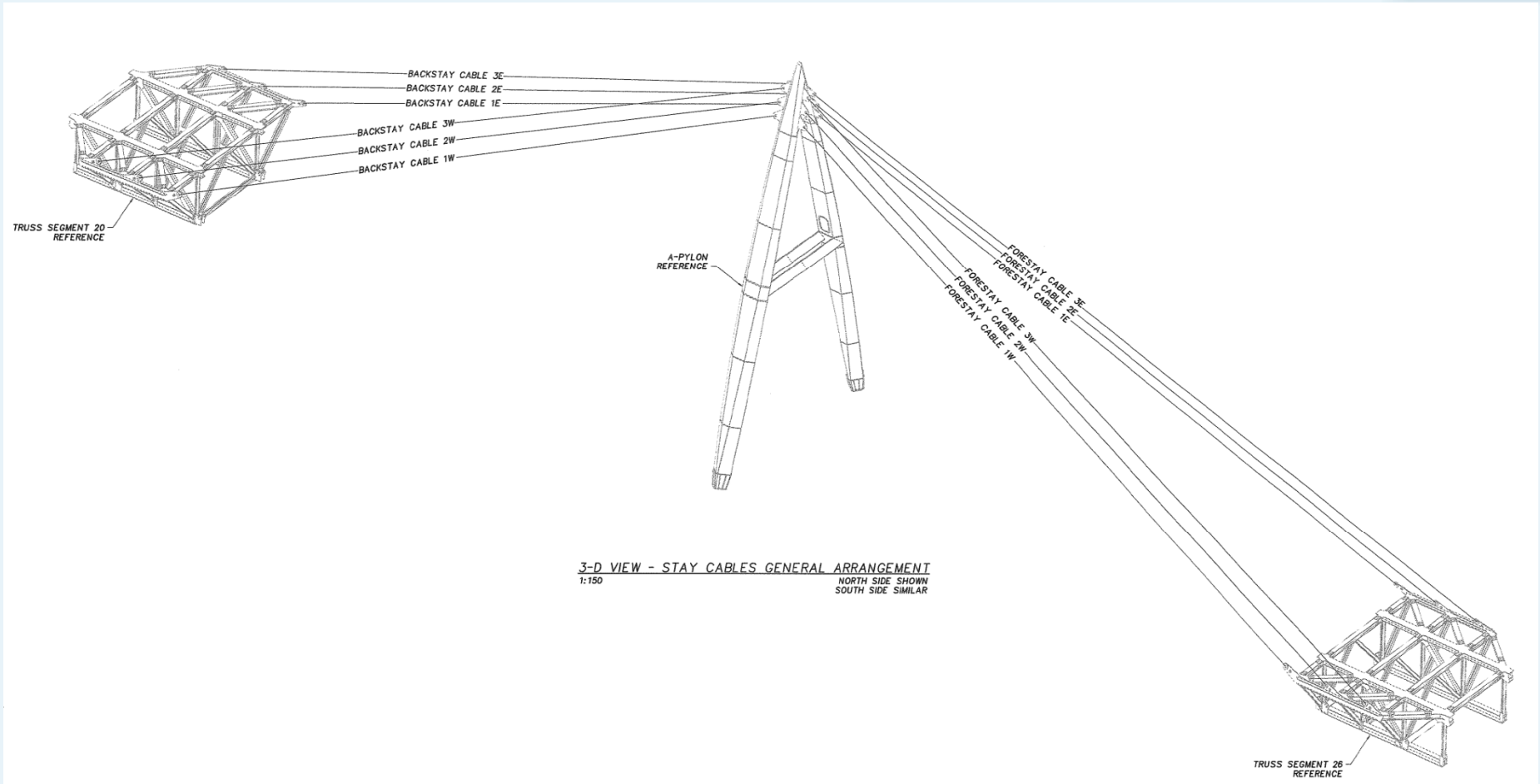
Bridge Configuration



Stay cables & Pylon: 2 pylons - 6 pairs of cables per tower

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Artistic Renderings

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Project Location

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Project Location

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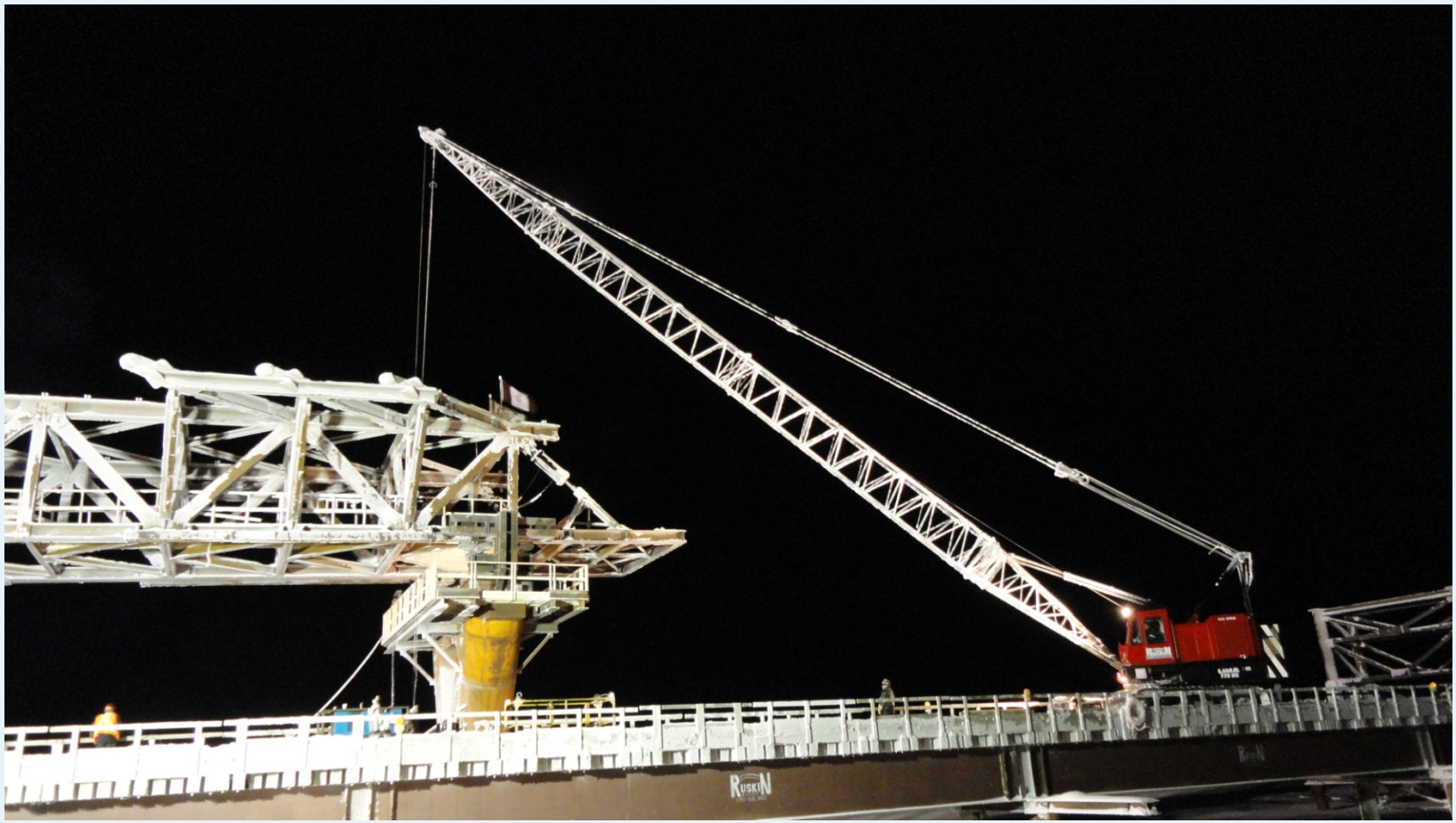
Challenges due to location

Weather



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Weather

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Challenges due to location

Isolation

- Long lead times for delivery of materials
- Nearest hardware store over 2 hours drive
- Self sufficient camp site

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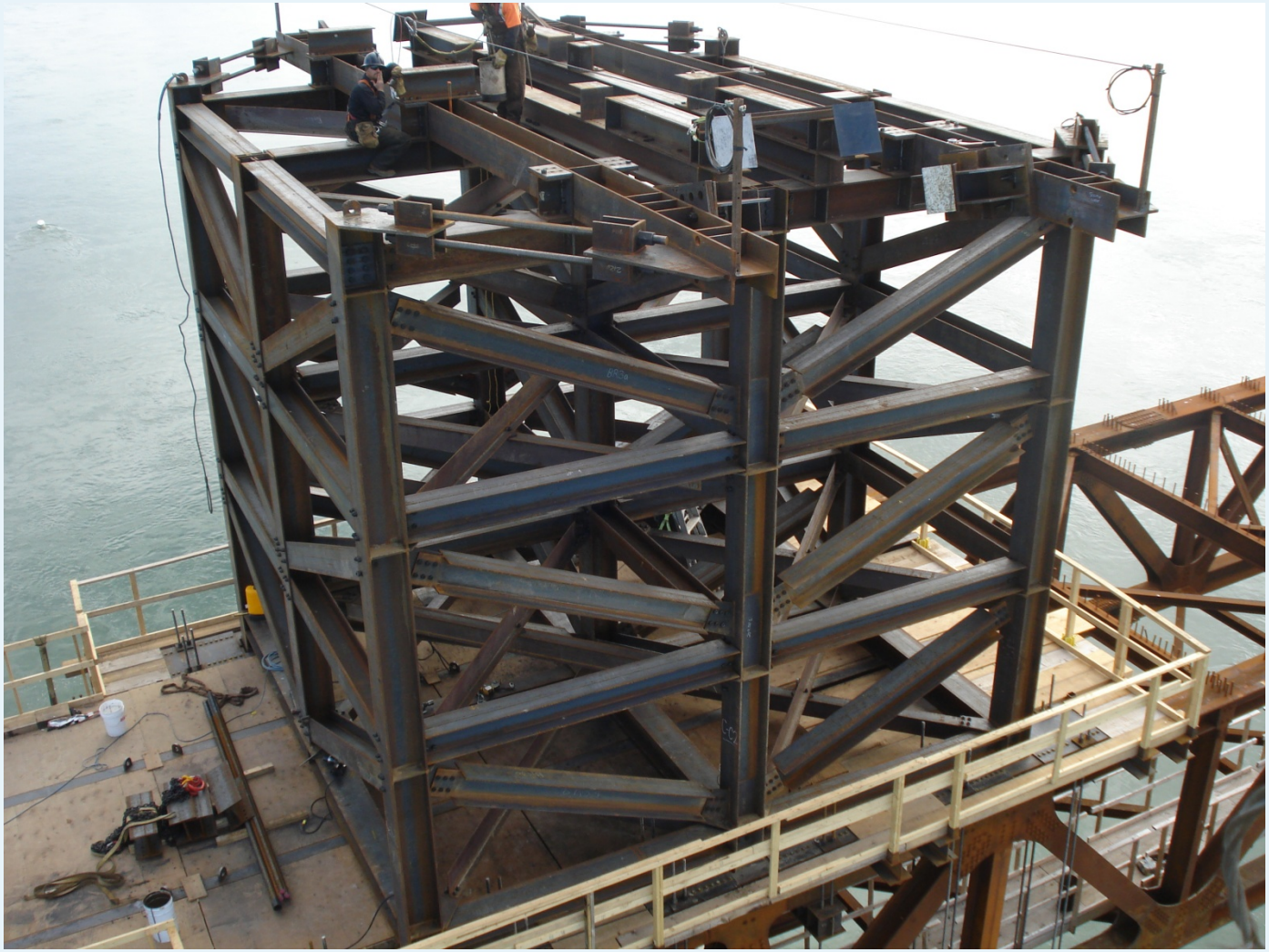

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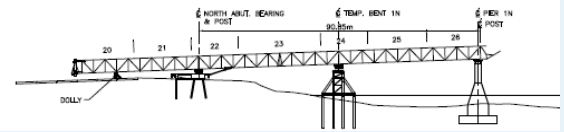
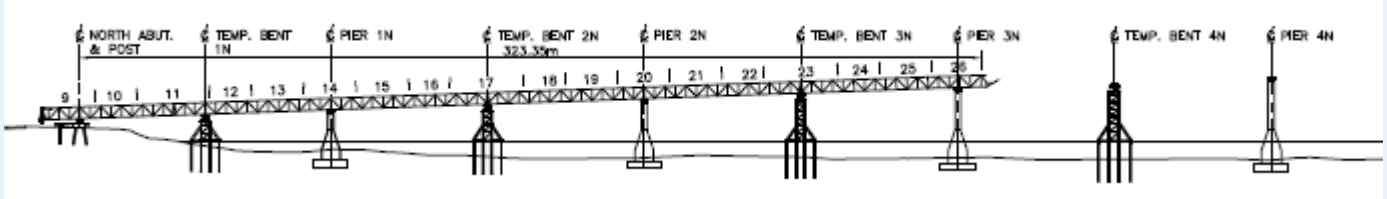
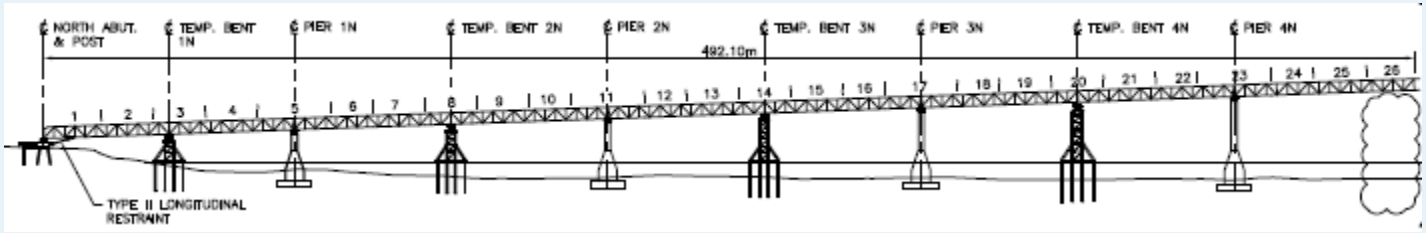
Launch Scheme







Launch North half of the bridge

Assemble truss behind the abutment

Use temporary Piers

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Launch Scheme

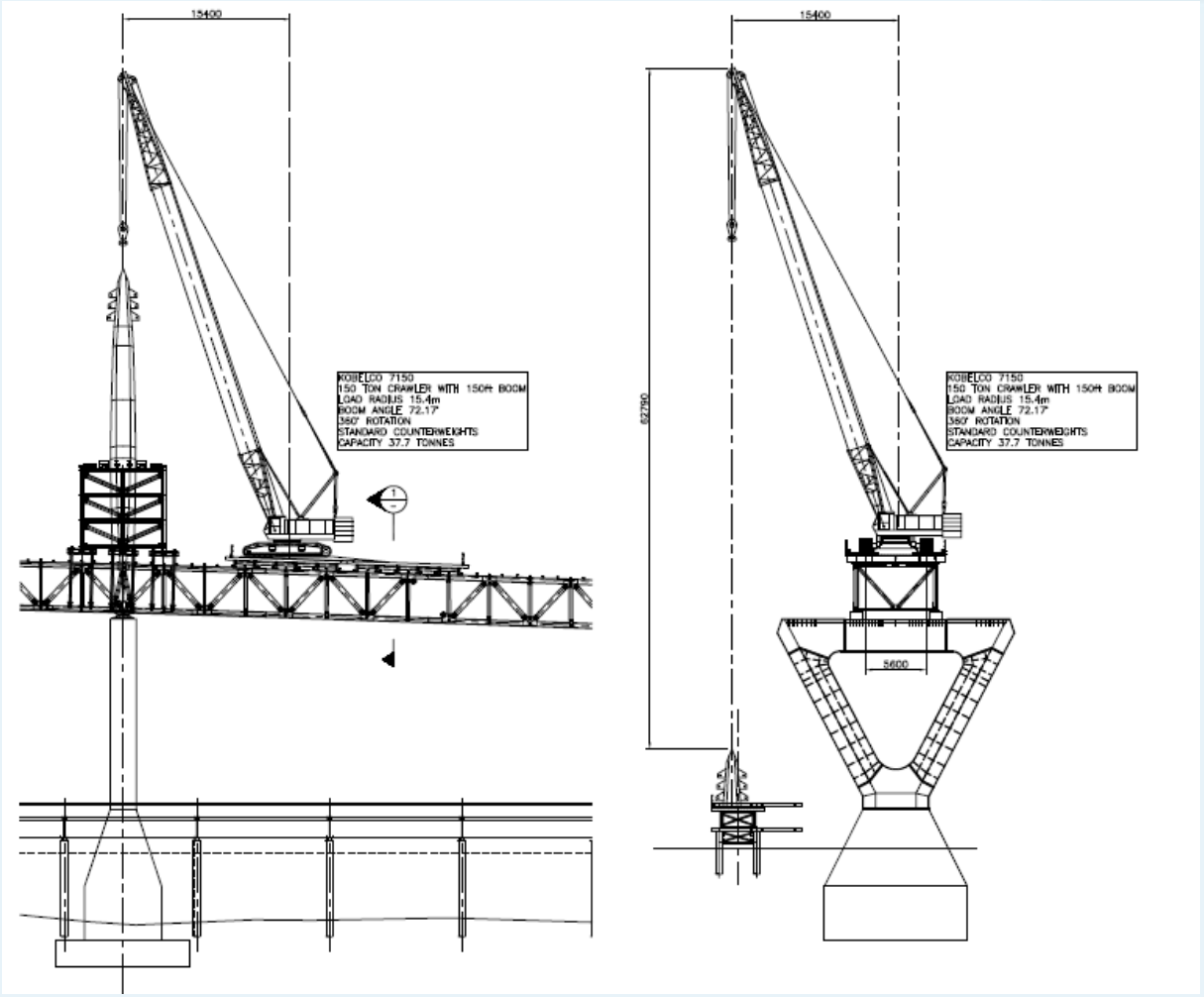
Remove temporary piers

Lower truss on piers 1-3

Install North pier Pylon

Install cables

Lower truss on pier 4



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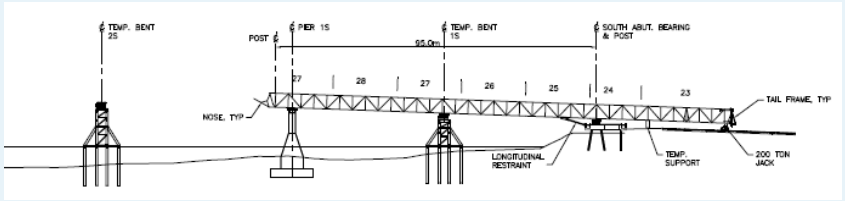
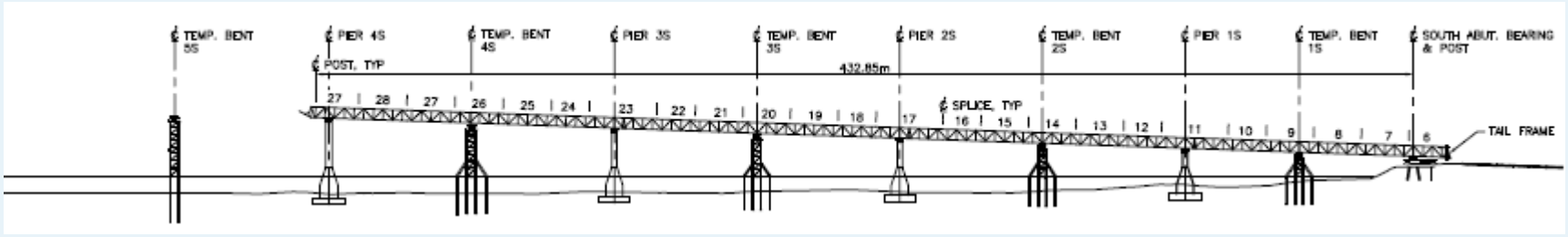
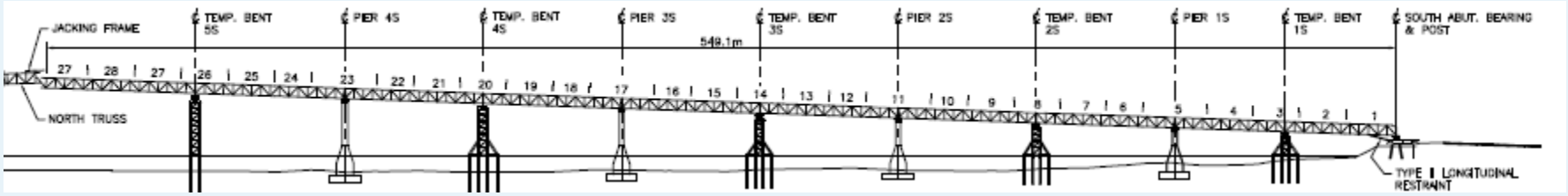
Launch Scheme







Launch South half of the bridge

Use temporary Piers

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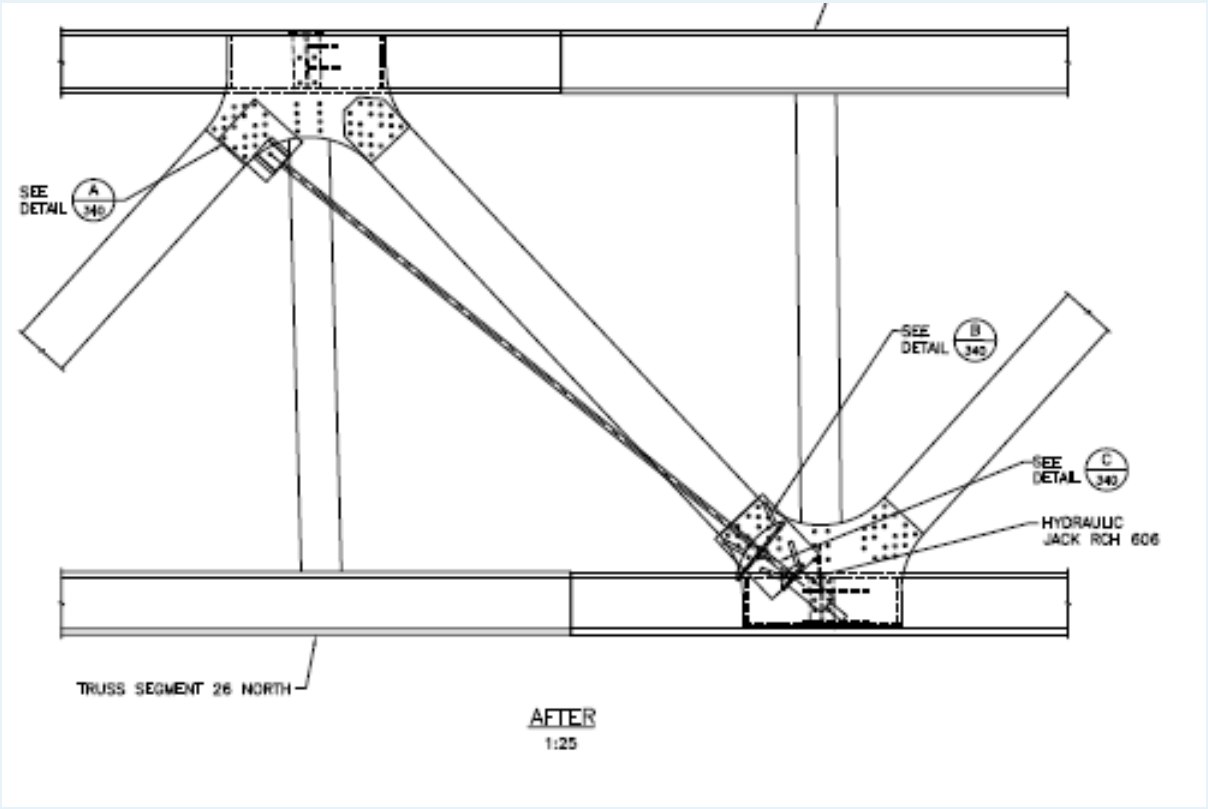
Launch Scheme



Connect North and South Trusses

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Launch Scheme

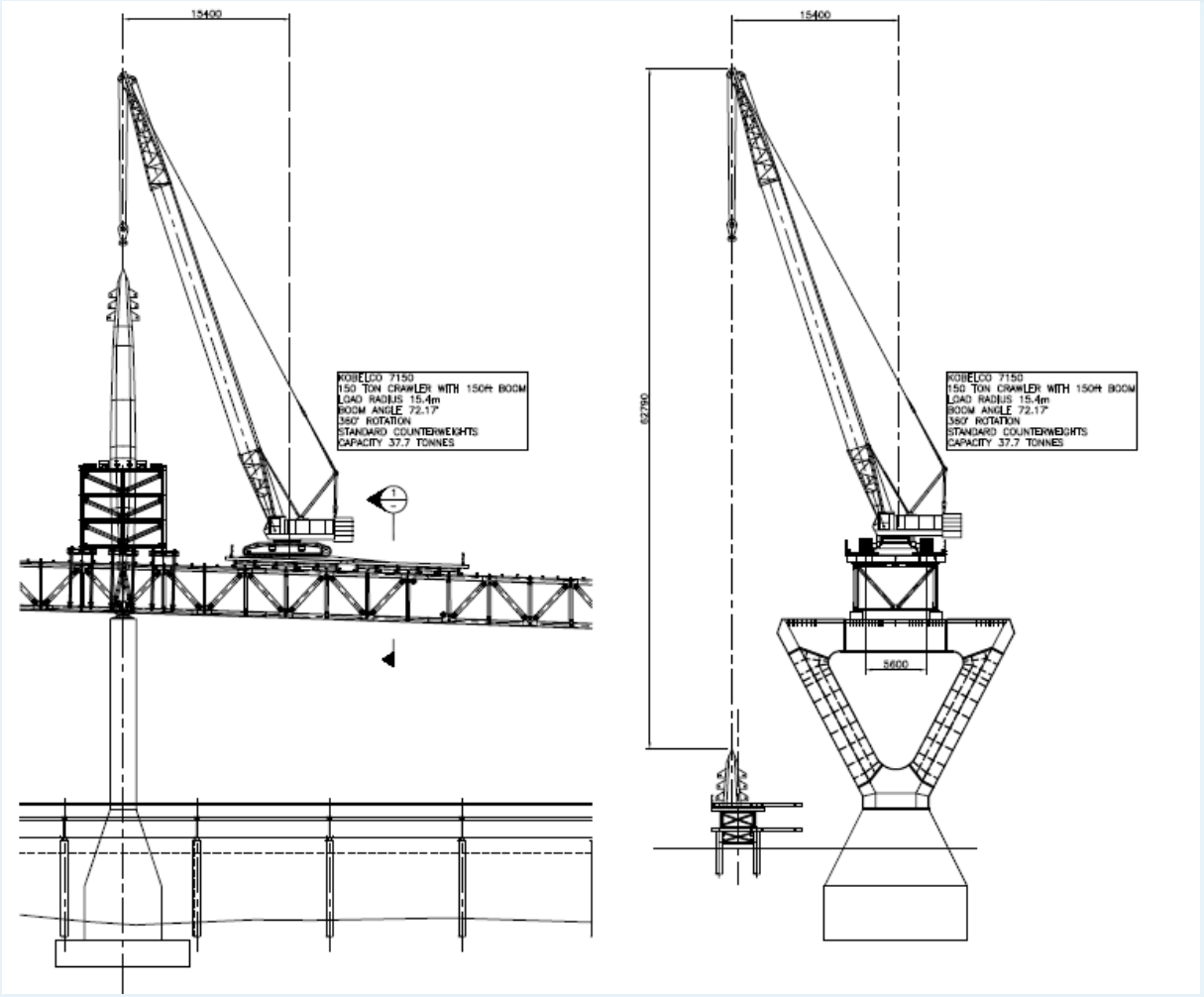
Install South pier Pylon

Remove temporary piers

Install cables

Lower on all piers

Install pre-cast Deck



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Temporary work bridge

Main pier view

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Launch Elements

- Supports on Hilman Rollers
- Lateral restraints
- Nose
- Temporary Towers

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Challenges

- Truss stiffeness
  - Camber
  - Uplift
- Large deflections – Nose selection
- Construction loads & sequencing

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THANKS!

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