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Temporary Steel Bridge Maintains Traffic Over Active Rail Track

Modular solution rapidly installed, on schedule, during bridge reconstruction in Scotland

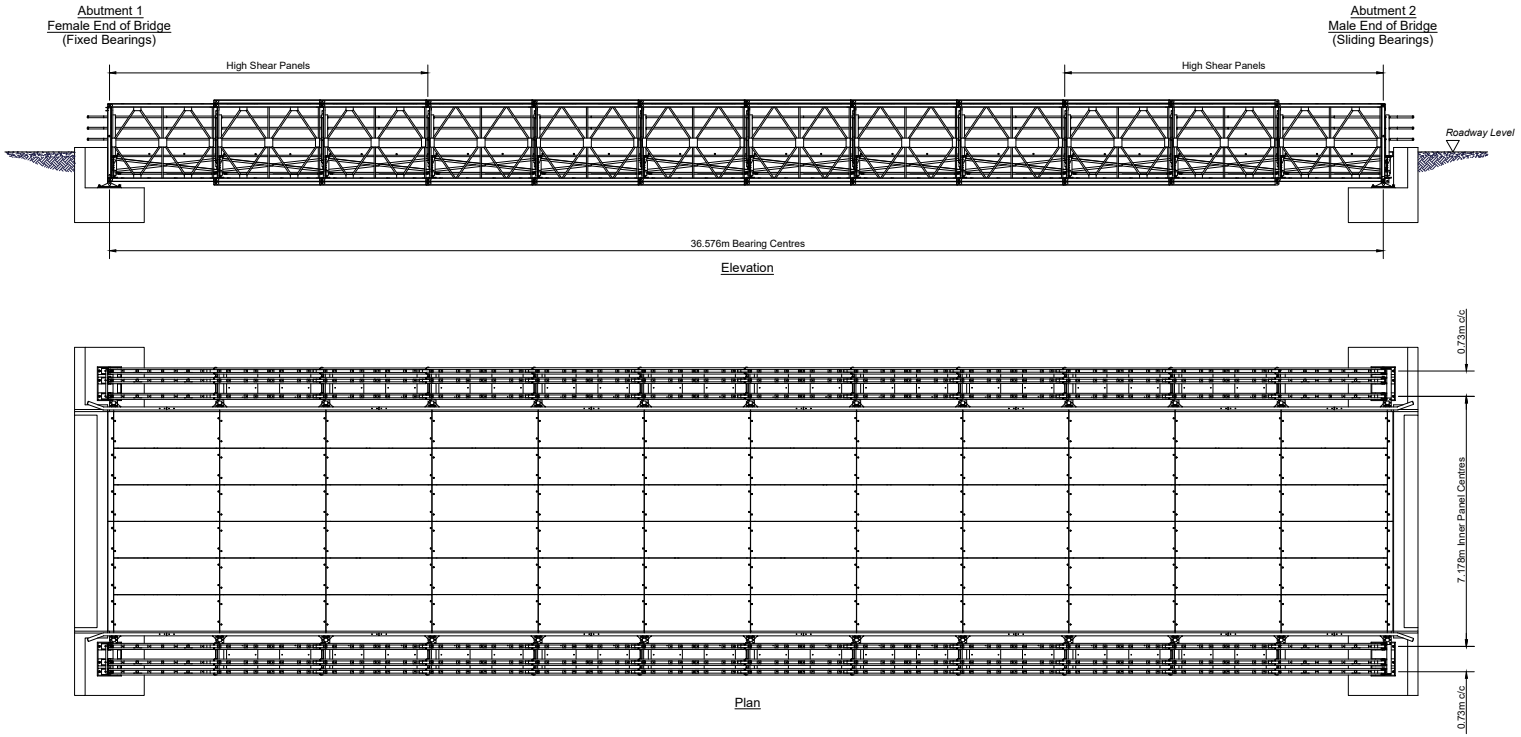
An old road bridge over the rail route on the A814 Dumbarton Road in Old Kilpatrick, Scotland, had deteriorated and was deemed inadequate for the volume of traffic using it daily, and was consequently scheduled for replacement. A complete bridge rebuild would take some time and minimising interruptions on the busy route was a priority - so a modular steel structure was commissioned to 'overbridge' the existing one to provide a reliable and safe diversion for traffic.

A 12-bay Mabey Compact 200® (C200®) bridge, 36.58 metres long and 6.3 metres wide with anti-skid decks, was selected for the project, partly for its modularity and strength, but also because of its speed of assembly and installation. It was to be installed on two new concrete foundations, set back from the old bridge, eliminating the need to introduce further weight restrictions. New approach ramps would be built at either end, with the road realigned to allow better sight lines.

The active rail track below the old road bridge required work to be completed during a possession, so a closely timed, well-controlled process was established with all stakeholders to ensure deadlines were achieved safely. Assembly of the bridge took less than one week, despite delays from two major storms.

Using the temporary structure ensured the quickest, safest and most efficient method to keep route closures to a minimum and it remained in place for approximately 18 months until the reconstruction of the old bridge was completed. Once dismantled, the components were reused for a permanent overbridge at another location, in Knagshill.

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Specifications

Bridge length:

36.58m

Roadway width:

6.3m

Parapets:

P2 parapets

Deck surface:

Anti-skid epoxy aggregate

Bridge erection method:

Crane lift in

Design load:

HA+30HB

Mabey C200® bridge finish:

- All major components galvanized to BS EN ISO 14713 and BS EN ISO 1461
- All bolts are spun galvanized to BS EN 1461
- All pins are electro-plated in accordance with BS EN ISO 2081

Mabey C200® bridge specification:

(A) Panel components to BS EN 10025 Grade S450J0 and Grade S355J2

(B) Transoms to BS EN 10025 Grade S460M or Grade S355J2

(C) Deck components to BS EN 10025 Grade S355JR and BS EN 10149 Grade S460MC

(D) Ancillaries to BS EN 10025 Grade S275JR minimum

(E) Panel pins to BS970 Grade 709M40 or 708M40

(F) Bolts to BS 3692, BS14399, DIN 912, DIN 267, DIN 931, BS1083, EN8, EN3, EN15 and ISO898

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