



A patented modular steel bridge construction system

UNIBRIDGE[®] Mining Solution Advantages:

- Savings on transport costs, downtime, vehicle wear and tear
- Increase the efficiency of bulk transport
- Very quick installation on pre-built abutments and piers
- Easily dismantled for use in other locations

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A UNIBRIDGE[®] road solution built in Bagdad in 2010. The UNIBRIDGE[®] Mining Solution will use the same principle for the abutments and piers.

UNIBRIDGE[®] Mining Solutions have been developed to maximise delivery of minerals from satellite mines via road to the crusher, utilising road trains.

Moving loads from satellite mines to the main deposit is expensive and time consuming. Once large crushers are installed at the main deposit of a mine, the ore from satellite mines needs to be hauled to the crushers at the main deposit. The distance can be up to 80km and is usually done using dump trucks.

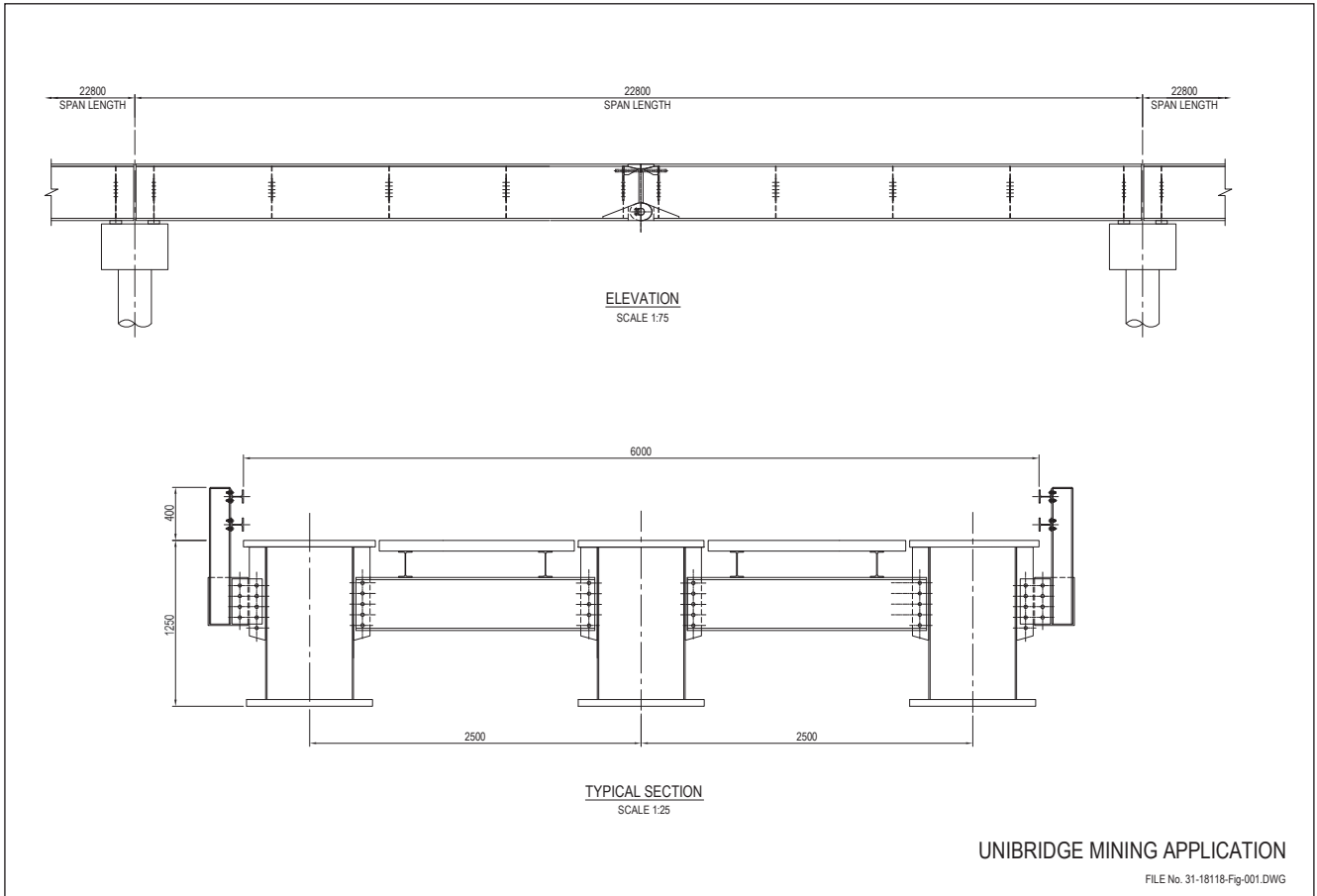
Dump trucks of up to 250 tonnes capacity require wide roads able to support very heavy loads, notwithstanding the speed and poor efficiency of such a solution. Another method for this operation is now available based on road trains, commonly used in northern Australia, and the Unibridge[®] mining solution.

Road trains (eg the "Hydrapede" from J. Smith and Sons*) can transport a pay load of up to 400 tonnes at a maximum speed of up to about 65km/h. To optimise the efficiency of a road train it is paramount to reduce the variation of gradients on the track and therefore reduce the wear and tear on drive tyres, power trains, brakes and connectors.

UNIBRIDGE[®] Mining Solutions can

- easily integrate into the road design to minimise the variation of gradients
- decrease the width of the roads
- increase the efficiency of the system
- allow heavier pay loads and faster transit times
- decrease road construction costs.

Improve efficiency • narrower roads • faster speed • heavier payloads



UNIBRIDGE® MINING SOLUTIONS

The drawing above explains the principle of this bridge based on several isostatic sections of $2 \times 11.4\text{m} = 22.8\text{m}$. able to carry the weight of the vehicles described at a speed of $\pm 65\text{km/h}$. For example a site requiring a bridge of 110m will require 5 sections of 22.4m each, two abutments and 3 piers. In this instance the length of the deck will exceed the length required and the abutments will need to be adjusted accordingly.

The basic design for the abutments and the piers can be easily pre-engineered and adapted to the specific geotechnical details of the site.

Once the capacity of the satellite mine has been exhausted, the UNIBRIDGE® Mining Solution can be easily dismantled and used again in another location, giving long term return on investment.

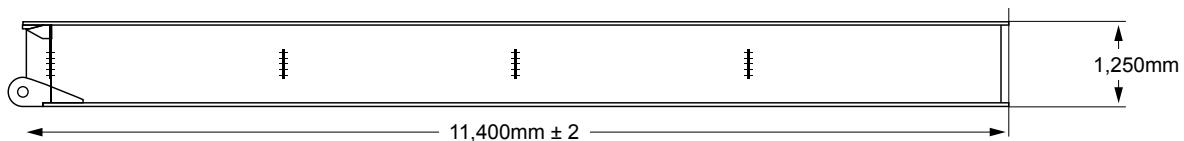
Basic Module (11.4m)

Two fabricated box girders of same length and type (Single Connection or Zero Connection) 11.4m, fully painted and ready for assembly with spacers, nuts and bolts, plus connecting pins and anchorage pads.

Box Girder

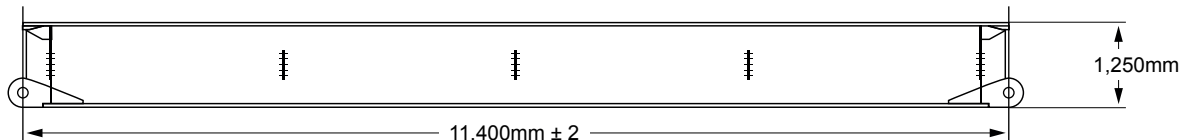
Single connection box girder

RD BM 114 SC



Double connection box girder

RD BM 114 DC



Weights

Some examples of component weights for single connection 11.4m girders and modules

- Standard Box Girder H 1.25m L 11.4m*: 10,925kg (24,086lbs)
- Standard Box Girder H 1.25m L 6.0m: 5,800kg (12,775lbs)
- Complete Module Single Lane H 1.25m L 11.4m*: 29,850kg (65,808 lbs)
- Complete Module Single Lane H 1.25m L 6.0m: 16,025kg (35,439 lbs)

NOTE: Two fabricated box girders of same length and type (Single Connection or Double Connection) 11.4m, fully painted and ready for assembly with spacers, nuts and bolts, plus connecting pins and anchorage pads.

For more information about Unibridge[®], visit
www.unibridge.net.au or email info@unibridge.net.au