Project:

V1 Veloway Bridge Gantry

Principal:

TMR/ Queensland Bridge and Civil

Location:

The gantry was Stage D of the V1 Veloway Bikeway Project and creates access over Juliette Street and a section of bikeway from Cornwall Street to O'Keefe Street.

Overview of Project

The V1, once completed, will run from Brisbane City to the Gateway Motorway off-ramp at Eight Mile Plains. The 17km connection will provide the missing link within existing cycleway network and ensure a safe and dedicated commute for cyclists.

Scope of Works

Neumann Contractors were awarded the supply, manufacture and heavy transport of the steel bridge gantry including aluminium powder coated screen frames, handrails, balustrades and bridge bearings. Overall, there was approximately 170T of fabricated steel required to comply with TMR MRTS78 Specification for Fabrication of Structural Steelwork. The gantry was divided into three fabricated sections at 45meter in length per section and on completion of galvanising was outfitted prior to transport with powder coated handrails, aluminium screen frames and concrete deck formwork in Neumann Contractors yard located at Currumbin, Queensland. The structure required approximately 9,200 workshop manhours to complete.

Challenges

The length of each gantry section required the gantry to be fabricated in 10-meter half sections so that steelwork could fit in the galvanising kettle. Due to this restriction, each gantry was fabricated in 5 five truss sections with each section consisting of an upper and lower truss that would be bolted and fully tensioned after galvanising.

Challenges

The design of the gantry presented several challenges to the fabrication team as follows:

- Each truss required camber after galvanising and this was introduced through the assembly and welding of half sections in the yard after protective coating.
- The fabricated trusses were heavily restrained in various crucifix joins which presented a risk of lamellar tearing during and after welding. This risk was minimised through detailed weld procedures.
- The gantry trusses were 45 meters long and 4 meters wide requiring specialised jinker transport that was completed at night.

Outcome

- The project timeline required 24-hour fabrication of the steelwork and an experienced construction team to ensure yard assembly of the truss sections continued progressively through to site delivery and erection deadlines. The size of Neumann Contractors laydown yard allowed assembly of the large trusses to be completed adjacent to fabrication works with easy and unrestricted access to the M1 motorway for heavy transport.

PROJECT PROFILE