

Australian Industry **ozWELD**

WINS!

WTIA National Diffusion Networks Project (NDNP) funded by the Federal and State and Territory Governments and industry



SUCCESS STORY NUMBER RT09: NEW RAIL BRIDGE TEAMS WELDED STEEL AND CONCRETE – *Improving road safety with a well-constructed overpass*

Construction commenced in November 2003 on the approaches for a new \$6 million rail overbridge on the Olympic Highway, south of Gerogery NSW and a contract for construction of the new bridge was awarded in August 2004. The new 140 metre, four-span bridge replaces a rail level crossing. The total project is 1.6 km long including the new concrete and steel bridge. The bridge over the railway significantly improves road safety and travelling conditions.

Contract for the construction of the concrete and steel bridge was awarded to Nelmac Pty Ltd, a Victorian civil engineering firm. The steelwork component of the project was sub-contracted to WTIA member company S&L Steel (NSW) Pty Ltd.

WTIA Role

WTIA's Welding Engineers were engaged to work with S&L Steel, and together with RTA Steel Inspectors, ensured the highest integrity of the welds in the twenty 20 metre-long girders needed for construction

The client for the project, NSW Roads and Traffic Authority (RTA), are members of the WTIA's NDNP Road Transport Industry Sectoral Project, and welcomed WTIA's role as an independent advisor. WTIA is also sponsored in NSW by the Department of State and Regional Development.

Welding Challenges

Achieving full fusion and penetration of welds is a constant challenge for fabricators, and significant work goes into the development of welding procedures that maximise these two criteria, and minimise disruptive back grinding or gouging.

When fusion or penetration are incomplete, the defective material from the back of the weld is removed and replaced, but this is a time consuming and costly procedure which is best avoided.

As an outcome of the NDNP and in consultation with industry, WTIA has created a Technical Guidance Note on fillet welding which addresses these problems and promotes appropriate solutions. The TGN has been promoted to industry, and is available as a free download from the website www.wtia.com.au.

Successful Project

WTIA worked with RTA's Inspectors and S&L to identify welding procedures for Submerged Arc Welding of the web to the flange of the girders that would fully utilise the capabilities of the welding process to give quality fusion and penetration. Each process has different capabilities and the choice of process to be used for any job should match the criteria for that job.

The welding was supervised by WTIA's Sasanka Sinha, with specialised surveillance by the RTA's Ray Marrow, with the emphasis on bevel design to eliminate any need for back grinding or gouging.

Finishing Requirements

Due to the cost of maintaining steelwork, RTA has a rigorous specification for blasting, priming, undercoating and painting the girders before their installation.

S&L was in the process of installing new equipment to satisfy these requirements, thus also improving their capabilities for future work.

Realignment at Gerogery saves 150 year-old red gum tree



For further information contact: The Technology Transfer Coordinator, WTIA PO Box 6165 SILVERWATER NSW 1811 Tel: 02 9748 4443 Fax: 02 9748 2858 Email info@wtia.com.au