

# Tulladunna Bridge, NSW

Uniculvert® modules

Case study



# Precast elements build new bridge in six days

The Australian Rail Track Corporation (ARTC) engaged Humes to supply a cost effective precast modular bridge system to replace the Tulladunna Bridge, which extends over the Namoi River in Tulladunna. The upgrade is part of the Bridges for the Bush Initiative, which is designed to enhance freight productivity in rural NSW, to invest in critical infrastructure to remove significant freight congestion, and to improve the safety and reliability of deteriorating timber bridge structures.

Over an impressive six days and well ahead of schedule, 166 Uniculvert® modules, several kerbs, four freestanding wing walls and 12 prestressed girders were installed to create the new 394 m rail bridge.

Tierney Opus was the chief designer for the project, providing designs for the Uniculvert® modules, bolt-on kerbs and prestressed girders. Humes modified one of the Opus Uniculvert® modules to make it suit existing Humes' mould stocks, which made it more economical for the project. Humes also modified the reo design for the remaining Uniculvert® modules to make the fabrication more efficient for precast production. Opus approved all amendments prior to manufacture.

Experienced remote rail installers, Rhomberg Rail completed the bridge construction in just six days, a reduction of 40% against the planned installation period of two weeks. The use of quality precast componentry, and efficient product design resulted in significant cost savings and minimal disruption to the rail line during the construction of the bridge.

Design engineers and project managers joined resources to incorporate late design changes to ensure the construction schedule was not compromised; the most significant modification included bolt-on kerbs to elevate the culvert height by an additional 100 mm. The culverts were designed to AS5100: 2004 for a 280LA loading. All precast components were manufactured in accordance with AS1597.2, designed to 100 year design life and adhered to Humes quality management plan.

Humes manufactures a full range of box culvert and Uniculvert® modules, (from 300 mm to 4,200 mm), to provide cost effective and practical solutions for waterway, pedestrian, fauna and stock crossings under road and rail applications.

**Humes**  
A Division of Holcim Australia

National sales 1300 361 601 | [humes.com.au](http://humes.com.au)

## Project

Tulladunna Bridge replacement, NSW

## Products supplied

166 Uniculvert® modules,  
166 bolt-on precast kerbs,  
four free standing wing walls,  
12 prestressed concrete girders

