

Bruce Highway Upgrade V2C Townsville, QLD

Case study – Prestressed deck units, Prestressed piles, Large box culverts and SRCP



Precast solutions meet tough marine environment in north Queensland

Working to tight timeframes dictated by the Queensland wet season, Humes supplied a wide range of precast components for the Transport and Main Roads Bruce Highway Upgrade - Vantassel to Cluden, in Townsville.

The project involved duplicating a 7km section of highway at Townsville's southern approach from two lanes to four lanes. The complex \$137.5M project was undertaken to provide flood immunity for the road while improving safety for road users and reducing travel times, as the old section of highway often flooded during the wet season.

Humes supplied 148 precast piles directly to TMR prior to the project contract being awarded to Lend Lease to ensure the project could meet construction timeframes.

Key elements of the project included supply of 34 prestressed bridge decks for a bridge over Stuart Creek, 540 pipes for a 30 cell pipe structure at 'Cluden Bend' and 105 prestressed bridge decks and large box culverts for a four lane railway overpass. Humes supplied all elements of the project on time and within budget

The high salinity environment and low level topography of the area presented unique challenges for Humes, with a special Xypex C5000 mix used for the piles, in order to address the aggressive saline/marine environment.

The 30 cells of DN1800 Class 3 pipe (540 pipes in total), is one of the largest volume pipe structures ever constructed in Queensland. For the railway overpass Humes supplied its widest box culverts, 3600 mm span, which had to be custom designed to withstand massive pressure due to more than nine metres of fill being placed on them.

Exposure class C concrete was used for the pipes and culverts to ensure a 100 year lifespan for the products in an aggressive marine environment.

Humes
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Project

Bruce Highway Upgrade,
Vantassel to Cluden,
Townsville

Principal

Queensland Transport and
Main Roads

Contractors

Lend Lease

Product supplied

148 Prestressed piles
139 Prestressed deck units
100 x 3600 span box culverts
50 x 3600 span Linkslab® units
350 x 2700 span box culverts
540 DN1800 SWC pipes

