

Construction of Hume Dam, 1919-1936

Part 6: The Bethanga Bridge

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Work began in January 1927, with a temporary bridge erected across the Murray which flowed at approximately mid-point of the flood plain. The rail from the quarry was extended, allowing material, men and equipment to be delivered along the entire site. Electricity was generated for pumping water and presumably mixing and hoisting wet concrete. Bethanga Bridge was opened to traffic without ceremony on August 9, 1930 at a cost of £194,500.

The bridge is 752m long and stands 37m above the river bed. There are nine spans of 82.3m each, weighing 1,600 tons. They sit on eight twin hollow, double reinforced concrete pylons, four in NSW and four in Vic. Each was 3.05m in diameter and 600mm thick. The footings for five sit on bedrock, the remainder had concrete piles driven to support their foundation. Including the end buttresses, 5,583 cubic metres of concrete was used.



Four pylons on the Victorian side under construction c1928 showing the temporary bridge over the river.

Building the twin pylons was done by raising the formwork 300mm at a time, up the green concrete. In summer, two shifts, working literally from dawn to dusk allowed for an almost continuous pour to take place throughout the working day. Hot water was used in mixing the concrete, causing an acceleration in drying. The stabilising bars in the photo were vital, but removed as each pylon cured.

The bridge was designed by NSW road engineer Percy Allen. On his retirement in 1926, Vincent Packer finished design and supervised construction.

The riveted steel components were manufactured in Melbourne by CE Ruwolt and railed to the worksite at Mitta Junction. From there they were hauled by horses across the river and stockpiled near the northern end of the bridge. Components for each span were undercoated in a different colour for identification.

On February 1, 1929, water first flowed through the valves at the spillway, providing a partially regulated river, resulting in the weir beginning to fill. All nine spans were subsequently installed with several metres of water around the pylons. With some forethought, Mr WH Thompson of Melbourne who had the contract to install the steel, had a number of wooden piles driven along the line of the bridge, allowing oregon construction towers to be attached. Three were used, providing stable platforms between the pylons on which the trusses were assembled and hot riveted together. A creeper crane placed the various components into position. Divers were used to attach, then disconnect the three towers which were then floated to the next span to repeat the process.

The bridge was raised 300mm with a concrete deck replacing the original brush box planking in 1961.