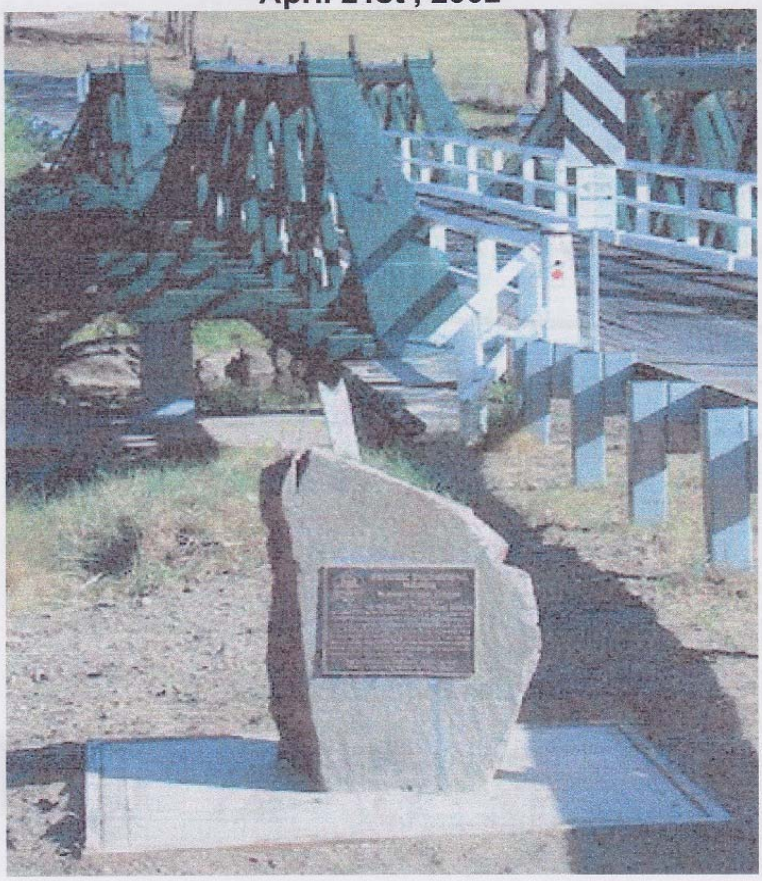
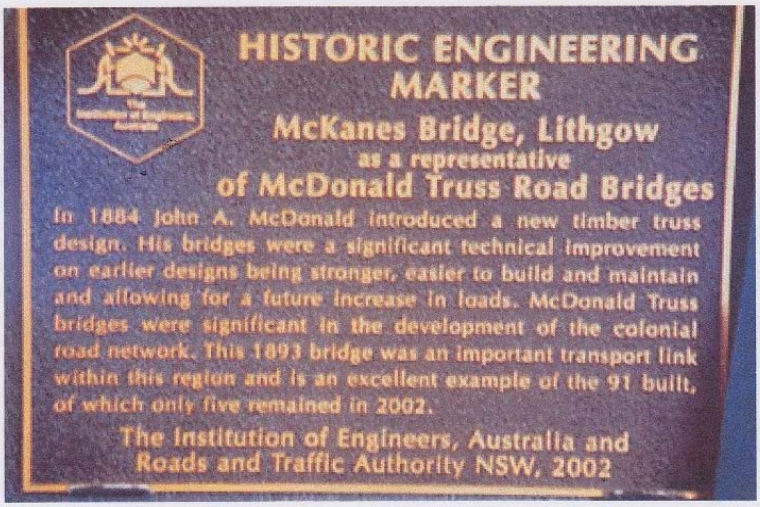
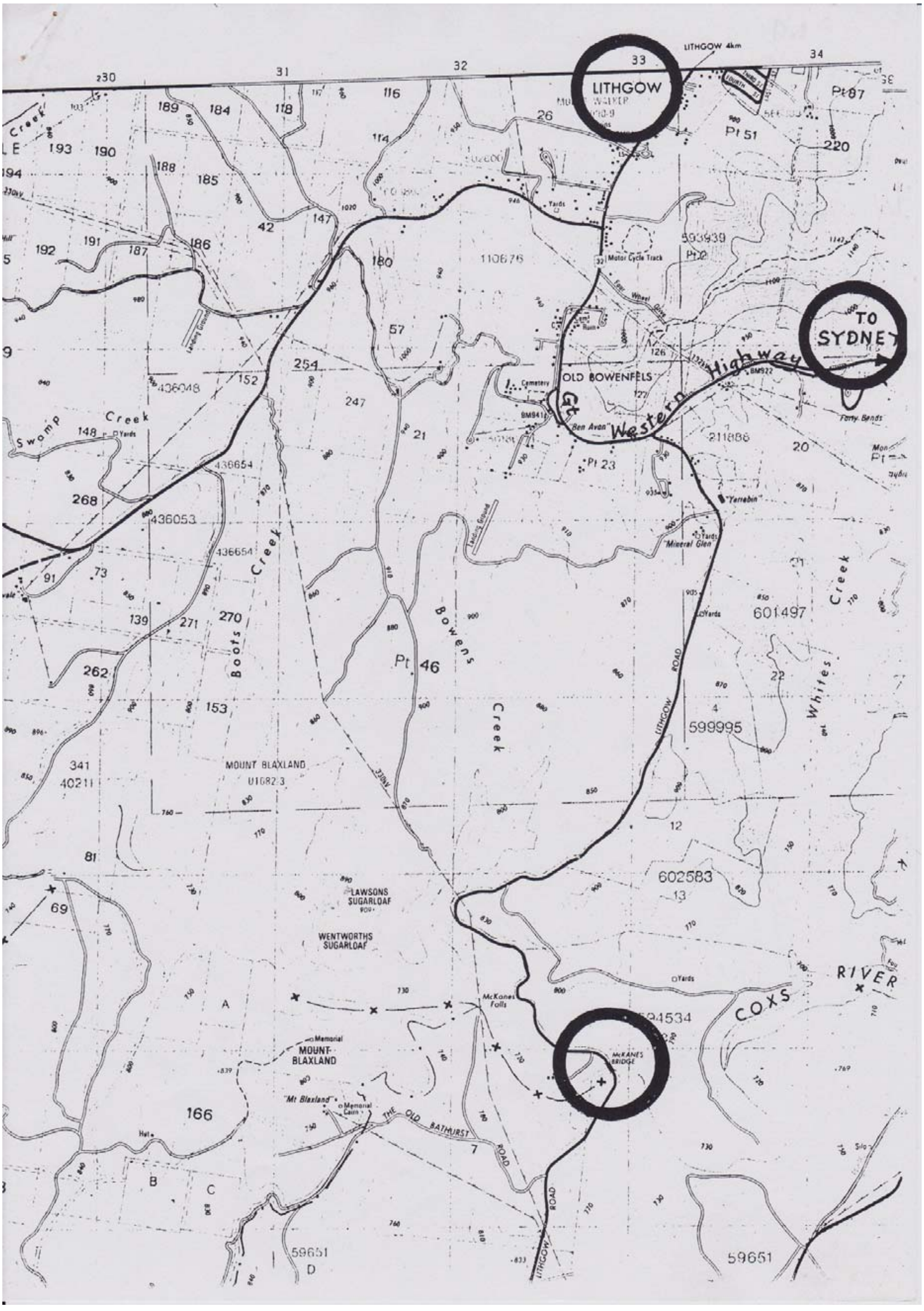
CEREMONY REPORT

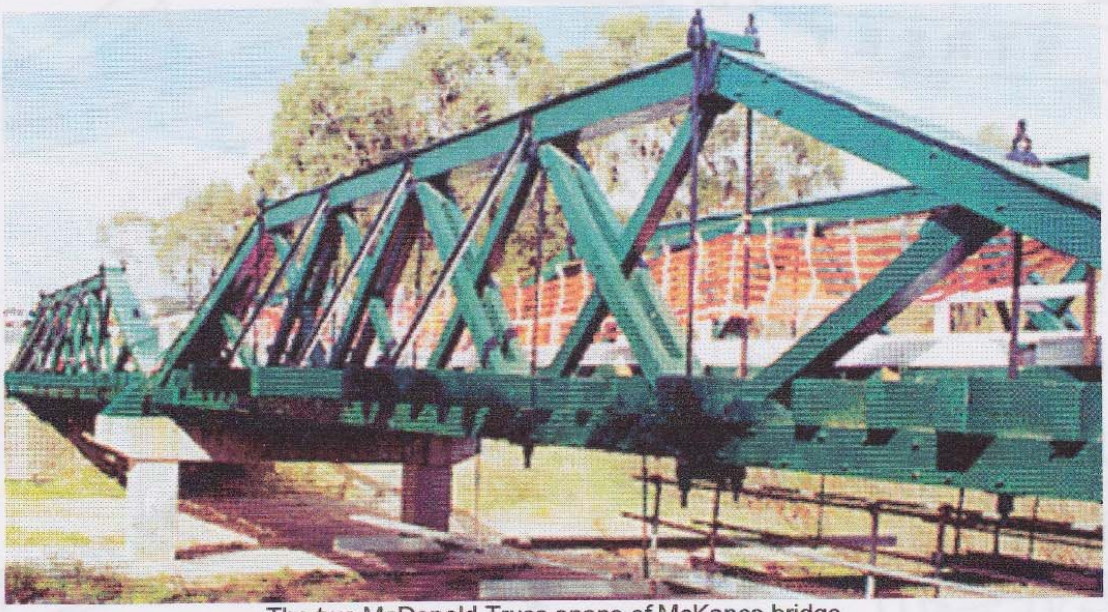
McKANES BRIDGE

COX'S RIVER, BOWENFELS
April 21st , 2002

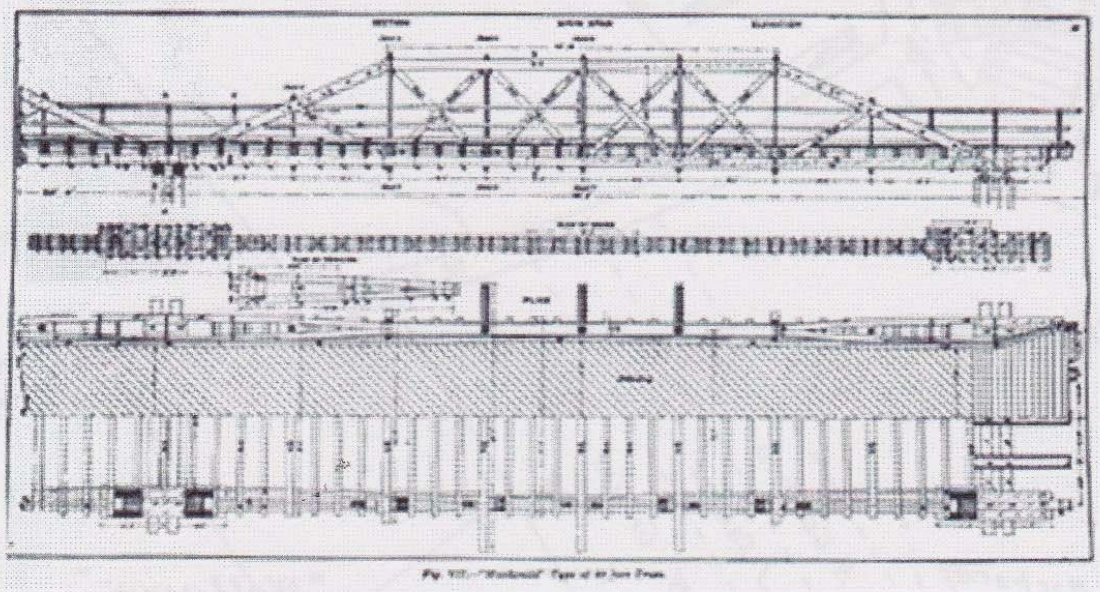





LITHGOW 4km
LITHGOW
TO SYDNEY
Gt Western Highway
OLD BOWENFELS
Cemetery
"Ben Avon"
Motor Cycle Track
"Yarrabin"
"Mineral Glen"
Forty Bends
LITHGOW ROAD
Swamp Creek
Boots Creek
Bowens Creek
Whites Creek
COXS RIVER
MOUNT BLAXLAND
LAWSONS SUGARLOAF
WENTWORTHS SUGARLOAF
McKanes Falls
McKANES BRIDGE
"Mt Blaxland"
Memorial Cairn
THE OLD BATHURST ROAD



The two McDonald Truss spans of McKanes bridge
and below
the standard drawing of a 90 foot McDonald Truss.



John Alexander McDonald, M.I.C.E., M.I.M.E (1856 -1930)

J A McDonald was born in London on 10 January 1856. He studied civil engineering at King's College, London for two years and was articled for three years with Messers Jessop and Appleby Bros. He held a responsible position at their Greenwich works. He was selected by Consulting Engineer, Sir John Fowler, to come to New South Wales to superintend bridges works in Sydney and joined the Department of Public Works, NSW in August 1879. From 1889 to 1893 he was in the senior position of Engineer for Bridges.

He made a significant contribution to bridge design in NSW. His achievements included: redesign of the Old PWD timber truss road bridge in 1884 to produce the "McDonald Timber Truss" bridge; design of sliding bridges at Lismore, Coopernook and Erina c1884; the design of early bascule bridges over some North Coast rivers, and designs for lift bridges such as over the Darling River at Wilcannia and the Murray River at Tocumwal, both completed after he left the PWD in 1893.

Other significant colonial bridges designed by him are the long slender iron lattice road bridges with their distinctive flat curved ends, which were technically sophisticated for the period 1886-1893. There are four in the Hunter region, one over the Snowy River at Dalgety and the last to be built crosses the River Murray at Corowa. The iron arch which carries Smollet Street over Bungambrawatha Creek, Albury shows the versatility of his bridge designs.

However, McDonald's crowning technical achievement in bridges was his pioneering use of the new technology of composite trusses (later taken up by E M De Burgh and Harvey Dare) whereby timber and steel were used to their best purposes. The bulky and relatively lower-strength timbers were best suited as compression members, hence the top chord, end sloping members and the diagonals were timber members. The higher strength of steel made it more suitable for slender tension members, the verticals and the bottom chord. In his design for the three large trusses over the Lachlan River at Cowra in 1893, he demonstrated the potential for composite construction with a span of 160 feet (49 metres), almost double the previous longest span for timber truss bridges. The bridge served 93 years and was replaced in 1986.

After McDonald left the NSW PWD at age 37 he joined the West Australian PWD during 1895-96 as Engineer-in-Charge, Fremantle Harbour Works, under C Y O'Connor of Coolgardie Goldfields Water Supply fame. In 1902 he moved to South Africa where he was engaged in mine surveying in Rhodesia, electric light stations in Capetown and was town engineer in Johannesburg. He returned to Western Australia in 1907 due to his wife's ill-health, and was engaged in water conservation works.

His final move was to Gisborne, New Zealand in 1912 as Engineer and Secretary to the Gisborne Harbour Board for 6 years then 5 years as Resident Engineer and Consulting Engineer to the Gisborne Borough Council. Now aged 67 his health began to deteriorate and sadly he ended his life with bullet to the head on 4 June 1930 aged 74.

John A McDonald is buried in Taruheru Cemetery, Gisborne, New Zealand.

To date, no photograph of him has been found, even from his many employers.

Version July 2003.
by Don Fraser
Engineering Historian
Sydney.

Attendees for McKanes Bridge plqauing

MC Ken McNally, RTA

Ian Rufus, Lithgow City Council.

Richard Woodburn, RTA Parkes.

Bruce Howard, President, Sydney Division, I E Aust.

The McDonald brothers whose father worked on building McKanes Bridge.

Official Party to unveil McKanes Bridge plaque.

Bruce Howard and the McDonald brothers.