Bridge over Sunday Creek

B7277 Bridge over Sunday Creek

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Location

Northwood Road,, SEYMOUR VIC 3660 - Property No B7277

Municipality

MITCHELL SHIRE

Level of significance

State

Heritage Listing

National Trust

Statement of Significance

Last updated on - April 17, 2008

What is significant? The Sunday Creek Bridge is situated on the former Hume Highway (now Northwood Road) just south of the Goulburn River Bridge, which marks the second crossing of the Goulburn at 'New Crossing Place'. The bridge was erected in 1930 to replace a dilapidated timber beam bridge at a time when the CRB was upgrading main roads to carry increased tonnages of vehicle traffic, both of private cars and trucks. It is a four-span, welded steel Pratt deck-truss bridge with reinforced concrete deck, piers and abutments. The bridge is by the CRB's own reckoning, the earliest welded steel truss bridge in Victoria and was built in a pioneering period of welded construction, contemporary with the Pikes Creek Reservoir Bridge and McKillop's Bridge over the Snowy River.
How is it significant? Sunday Creek Bridge is significant for aesthetic/architectural, historic, and scientific (technical) reasons at a State level.
Why is it significant? Sunday Creek Bridge is of historical significance because it demonstrates the important role played by the CRB in its early decades in developing and upgrading Victoria's main road network. In particular

the use of innovative technology and design in the welded steel truss spans shows how they met the demands put on the road system by increasing volumes and tonnages of traffic.
While the bridge was bypassed in the 1960s and again in the 1980s, and now appears as a relatively insignificant crossing on a small local road, it was once an important link on Victoria's most significant road route. A short distance from the Goulburn River Bridge of 1892, which takes the old Hume Highway into Seymour, the Sunday Creek Bridge provides a reference back to the period when motorised road transport was in its incipient stage.
The bridge is important for its association with the CRB Bridge engineers MG 'Bridgie' Dempster who submitted the plans as Chief Bridge engineer, and I J 'Paddy' O'Donnell who designed the bridge steelwork, and who went on to become Chairman of the CRB.
It is of technical significance as the first fully welded steel truss road bridge built in Victoria and as a technological innovation drawing on experimental welding undertaken by the Railways Department and other public works engineering projects in the early 20th century. As well as being the first, it is one of only eight welded steel truss road bridges in Victoria, and one of 12 steel truss bridges. However, it is the eighth longest steel truss perhaps reflecting its experimental nature. The truss form is often used to achieve large spans over difficult crossings where other girder forms would be highly wasteful of metal due to the very deep web plates required for such long spans.
Evidence from the CRB Annual Reports and the very detailed drawing specifications for the welding suggests that this was to a great extent an experiment on behalf of the CRB in trying out a new engineering technique.
The bridge helps understand the development of bridge design employing welding as a construction technique. Analysis of the detailed design drawings in conjunction with inspection of the variable and sometimes poorly finished welds on the bridge itself can give insight into the development of welding techniques and skills, and their application to bridge and other engineering in the 1930s.
It is of aesthetic or architectural significance as a highly intact 1930 CRB Road Bridge, which while utilising an advance engineering design for the times, still featured traditional parapets and pilasters for the hand rails and guard fencing, and also has the refinement of arched pile piers with tapered legs. While generally utilitarian, the design has resulted in a pleasant appearance.
Classified: 08/09/2004

Hermes Number 71580

Property Number

Physical Description 1

Sunday Creek Bridge is a four-span, welded steel continuous Pratt deck-truss bridge with reinforced concrete deck, piers and abutments. The bridge comprises spans of two lengths; 65 foot on the inner spans, and 52 foot on the outer corresponding to 14 and 12 panels respectively. The panels are a mix of 4' 4" and 4' 7 23/32", while the trusses are 4' 11 3/32" deep. Three lines of trusses are used, with cross-braces at alternative panel points. The cross-braces and horizontal braces are bolted to the truss chords.
The welded truss sections of between 32 and 35 feet were bolted together on site with splices to the horizontal and diagonal members. Up to 20 bolts to each cover plate are used. Bearing plates are welded to the bottom chord of the trusses and panel and cross brace points. The piers are of reinforced concrete with two octagonal sloping columns, arched cross piece and straight lower brace. The cross-heads project beyond the truss line and are finished with octagonal ends. The abutments are also reinforced concrete and include short parallel wing walls surmounted by the parapet. The guard-rails are reinforced concrete post and top rail cast integral with the deck and with small pillars at the abutments and piers. Because of the different span lengths there are 7 panels on the two inner spans and six on the outer spans. Guard fence panels are made from galvanised water pipe and cyclone mesh.
The deck is reinforced concrete, cast in situ over the trusses and cantilevered about four feet beyond the truss line. The lines of the timber formwork between the trusses can be seen on the underside of the deck.
Construction involved the erection of temporary staging from the banks to the river piers (Piers 1 and 2) with the new bridge positioned so that the old timber bridge was immediately adjacent on the upstream side and could be used as a construction platform. Staging was erected around the piers and concrete poured inside small coffer dams. Pier 3 was constructed on dry land.

The old timber piles are just visible in the creek on the downstream side. The embankments are also just discernable parallel with the current road on the southeast? Construction plans show that the new bridge and its approach road was positioned 30 feet (road centreline to centreline) on the upstream side of the existing bridge and road. This may have allowed the old bridge to be used as a crane platform for assisting in construction work.

Intactness

The bridge is remarkably intact with all its structural elements original to the1930 construction date. The panel inserts in the guard fence also appear original. The only evident change is the road surface, which appears to have been re-laid (probably a number of times). Some strengthening also appears to have been carried out to the trusses.