Victorian Heritage Database Report

Harper's Lane Bridge over Melbourne - Bendigo Railway

Location:
Harpers Lane, off Lauriston Reservoir Road,, KYNETON VIC 3444 - Property No B7319

Heritage Status / Level of Significance:
State

Heritage Inventory (HI) Number:
Listing Authority: HI

Statement of Significance:
What is significant? The Harpers Lane Bridge is a bluestone and wrought iron road over rail bridge situated on the Melbourne Bendigo Railway at Kyneton. It was built in 1862-4 and is one of a group of similar bridges on this line.
How is it significant? The Harpers Lane Bridge is significant for aesthetic/architectural, historic, and scientific (technical) reasons at a State level.
Why is it significant? The Harpers Lane bridge is of historical and technical significance as one of the oldest extant metal plate girder road bridges in Victoria in original form. The association of the bridge with the Melbourne Mount Alexander and Murray River Railway is significant, not only because of the large scale of public works associated with the construction of this line and its importance to the economic development of the colony, but also because of the key role that this project played in introducing the use of riveted wrought-iron plate girders to Victoria for both railway and road bridge construction. Prior to 1870 there were very few metal road bridges of any type built in Victoria and of the surviving examples attributed to this period which appear to retain their original riveted wrought-iron plate girders, all were associated with the construction of either the Melbourne-Bendigo, Ballarat-Geelong,or Melbourne-Brighton Railways.
The Harpers Lane Bridge, being the earliest of the form, may well be the prototype for other bridges along the line further north, which although varying in detail, follow a very similar pattern. The development of composite masonry and wrought iron bridge construction as demonstrated in this bridge may also reflect the crisis of the stone mason's strikes of 1858-61 and a subsequent change in bridge design which this event may have caused.
The Harpers Lane Bridge is similar to several other metal road bridges over the same line.

These are significant as a group, which represents an outstanding historical event and engineering achievement. The very intact condition and early date of the Harpers Lane Bridge provide the potential to yield important information about the introduction of this style of bridge on the Melbourne Mount Alexander and Murray River Railway and the to the whole of Victoria more generally.
It demonstrates the high engineering standards and fine workmanship which are characteristic of the Bendigo Railway and provides a marker for the importation and adaptation of British engineering and technology, based on the wealth of the gold rushes and increasing political and financial power of the new Victorian Colonial Government. The combination of masonry abutments and metal girders in the design of the bridge is characteristic of the Bendigo Line which was engineered to British main-line standards under the influence of Andrew Clarke and given the stamp of approval by the British Inspecting Engineer Isambard Kingdom Brunel, one of history's most famous and most influential engineers. The bridge and the rail route are of historical significance as part of the first main country trunk route linking the goldfields with the ports of Geelong and Melbourne (the other line being the contemporary Geelong-Ballarat line). The provision of access across this line was subject to political debate and often resulted in bridges of a very high engineering standard serving little used roads and private access. The case of Harper's Lane, the bridge did serve an important local route, giving access to an early crossing place of the Campaspe river at the foot of Mill Street. With the new station reorienting the town settlement, the Kyneton-Trentham Road became the more important crossing.
The Harpers Lane Bridge is of aesthetic significance for the finely detailed and balanced execution of the design, which successfully blends the disparate materials of wrought iron and bluestone on a difficult sharp skew angle. The design solves the challenging problems for early bridge engineers and designers of incorporating metal girders and results in a unique design solution which uses string courses to define structural components such as the foundation plinths and girder sills, and balances the relatively slender girder with parapet walls of a similar scale. The curved and tapered brackets of the handrails offer a delicate detail to balance the solidity of the rest of the structure. The string courses also carry the horizontal lines of the girders and handrails through the length of the structure, abutments and wing walls. In its original form the corrugated galvanised iron balustrade panels would have created a more solid profile to the structure.
Classified: 30/04/2005

Description

A single span, riveted, wrought iron girder and bluestone bridge with high, steeply ramped approach embankments on a sharp skew angle, crossing the Melbourne Bendigo Railway. The abutments are constructed of axe-cut or rock faced bluestone masonry in regular 360mm deep courses up to two courses below bearing level, and 300mm above. String courses extend across the abutments and wing walls, which have varying outward splays, at different arcs related to the acuteness of the skew angle. Two 360mm deep string courses and a substantial projecting capped balustrade with quarry faced top, provide linear continuity with the base of the girders, the deck level, and the top of the iron handrail.

The abutments are detailed with pilasters on the sides and both quoins and string courses have drafted margins. Coping stones project over the wing walls. The six deep, riveted wrought iron plate girders are supported on a sill of larger bluestone blocks which provide a recess into the top of the abutments. Cross bracing is provided by plates at each end. Transverse timber decking is laid and bolted to the top flange of the girders and an asphalt road base has laid over these since about 1960.

The bridge has a maximum span of 11 metres and deck length of 10 metres and is 4.5 metres wide, allowing a single lane of traffic. The bridge super-structure consists of six riveted plate wrought iron girders approximately 800mm deep and at 900mm centres, with a noticeable positive camber. Each girder is built up out of wrought iron plates in the web and flanges joined in their length with plate connectors and made into a simple "I" beam with angle iron joiners. Four web stiffeners on the sides of each girder are made up from rolled T section wrought iron, cut and bent at the ends to allow continuity in the angle iron joiner between the web and flanges. The girders rest on a continuous bearing sill of bluestone.

Clearance above the two tracks is 4.5 metres. Side clearance for trains is quite tight, showing the close

tolerances of the original design. The deck is of transverse hardwood (6x4inch) with a gravel road surface over. The guardrail spanning between the heavy stone balustrades consists of T section rolled wrought iron uprights with riveted plates at the bottom connecting them to the timber of the kick rail, with a top rail of wrought iron angle originally capped with a timber hand rail. The originalbracing, which remains on both sides of the bridge, consists of elegant swan-neck curved brackets bent from square section wrought iron with bent plate connections to the uprights and the cantilevered ends of the deck. The fence is now filled with chain mesh wired through small holes in the angle iron frame - the original infill of corrugated iron sheets having been replaced in the late 1920s.

The bridge appears to be intact apart from replacement of the decking timbers (to what appears the same configuration) and modifications to the up side handrail. The original corrugated iron fence panels have been replaced with chain mesh.

Heritage Study / Consultant	
Construction Date Range	
Architect / Designer	
Municipality	MACEDON RANGES SHIRE
Other names	
Hermes number	71649
Property number	B7319

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