

technical memorandum



road safety hardware series

Buried in Backslope End Treatment

TM-2004

December 2011

Purpose

To advise on the recommended practice for the design and installation of a Buried in Backslope end treatment.

Background

A Semi-Rigid barrier system comprising either W-Beam or Thrie-Beam steel guardrail on timber or steel posts requires anchorage at either end of an installation, to achieve the required longitudinal ribbon strength. This may be achieved through the anchorage of a compliant end terminal or a Buried in Backslope end treatment, as listed in NZ Transport Agency Specification M23: Appendix A.

A Buried in Backslope end treatment, comprising a buried concrete anchor block and the appropriate transition, should be the end treatment of choice where a natural backslope is reasonably close to the beginning or end of the semi-rigid barrier system. The correct design and installation of this end treatment will provide full shielding of the hazard, and eliminate the further hazard of an end terminal.

Recommended practice

The standard practice is to connect a W-Beam steel guardrail system to a Buried in Backslope concrete anchor block as shown in Figure 1 (NZ Transport Agency Standard Drawing RSB-1) through the TL-4 transition shown in Figure 2 (NZ Transport Agency Standard Drawing RSB-5). The NZTA Standard Details must be used for state highway installations.

A Buried in Backslope end treatment can also be used with semi-rigid Thrie-Beam barrier systems where it is connected to the standard TL-4 transition at Post 9.

The anchor block should be either completely buried or buried to the extent that there are no exposed faces that could snag a vehicle. The installation should also take in account the potential for future erosion that may expose the anchor block. This can create a snagging hazard and an ongoing maintenance issue. The approach grading should provide an unobstructed guardrail contact face at the correct height. The grading through the transition length should not ramp the vehicle. The standard transition should be substantially exposed to at least Post 2, and present the correct barrier height of 610 mm to the centre of the guardrail.

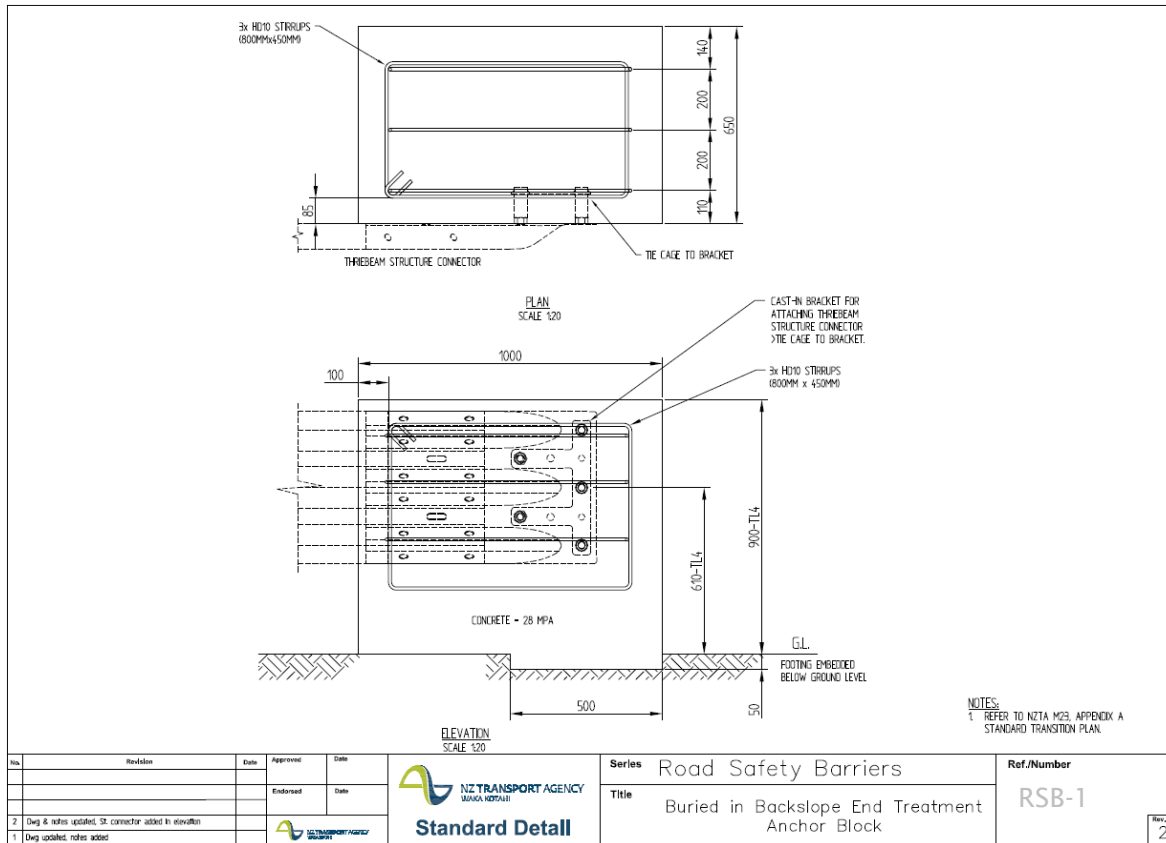


Figure 1 - NZTA Accepted Detail Buried in Backslope Anchor Block

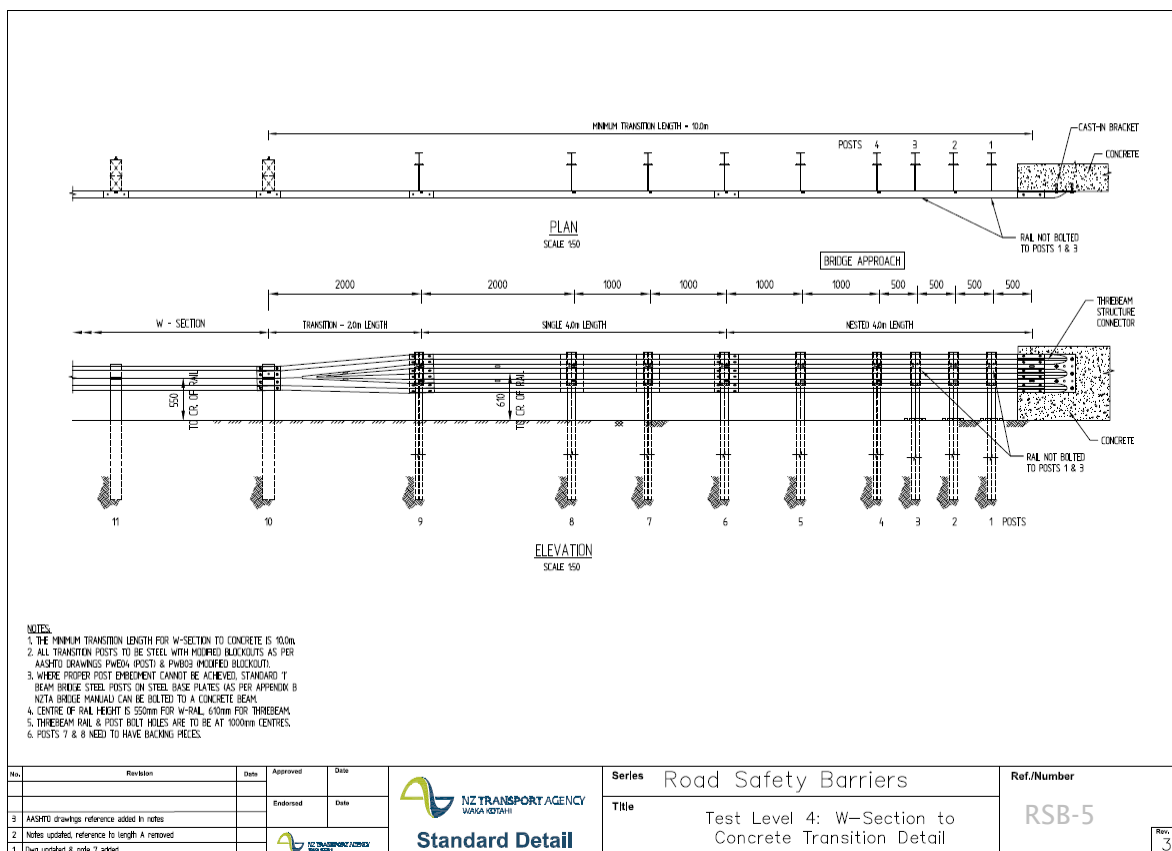


Figure 2 - NZTA Accepted Detail TL-4 W-Section to Concrete Transition