

Supplement

Manual of Uniform Traffic Control Devices (MUTCD)

Part 2: Traffic Control Devices for General Use

May 2016

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4 Treatment between intersections

4.6 Treatment of approaches to structures and obstructions

4.6.2 Bridges

4.6.2-1 Signing and linemarking for narrow bridges / structures

1 Purpose

This supplement outlines the recommended application of signing and linemarking on approaches to narrow bridges or structures. The criteria set out in this supplement must be read in conjunction with Part 2 Section 4.6 of the *Manual of Uniform Traffic Control Devices (MUTCD)*. Where recommended treatments differ from that stated in the MUTCD, treatments outlined in this supplement shall be adopted as the preferred application.

2 Background

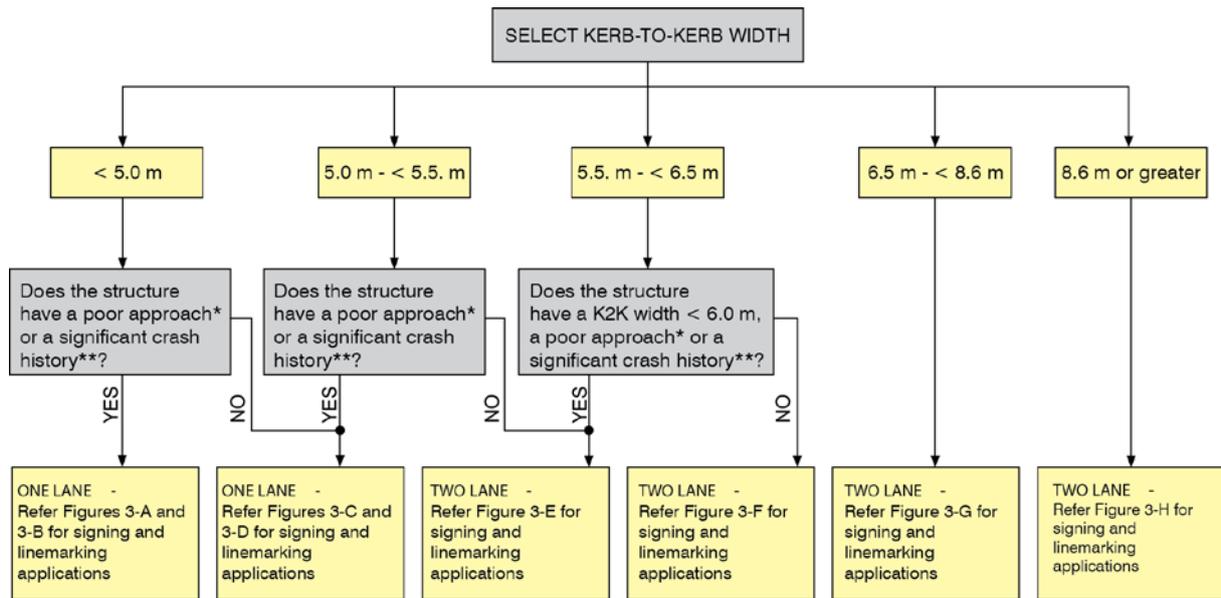
The Traffic Engineering and Data Unit has undertaken a performance review of one lane and narrow bridges on the state-controlled network across Queensland. The objective of the review was to compare the performance of various kerb-to-kerb (K2K) widths in an attempt to determine if the current guidelines for a one lane bridge are deficient, or if a shift of risk would result by altering current guidelines. The report is titled *Narrow Bridge Assessment – Operations Review*.

Recommendations of the report primarily focus on a revised application of signing and linemarkings, given the prohibitive costs of remedial treatments such as bridge widening and new guardrail. Based on the safety performance review, the report also recommends the conversion of one lane bridges with a K2K width of 5.0–5.5 m to two lane operations. The criteria for signing one lane and narrow bridges/structures detailed hereafter, are based on the recommendations of the above-mentioned report.

3 Application of signing and linemarkings

Eight signing and linemarking schemes have been approved for use on the state-controlled road network, as detailed in the following layout plans (Figures 3A-3H). To ensure a consistent approach to the selection and application of schemes, a flowchart (Chart 3) has been developed to assist practitioners with selection of the preferred application. The selection of schemes and the subsequent application of signing and linemarking should not vary from that outlined in this supplement without prior approval from the Traffic Engineering and Data Unit

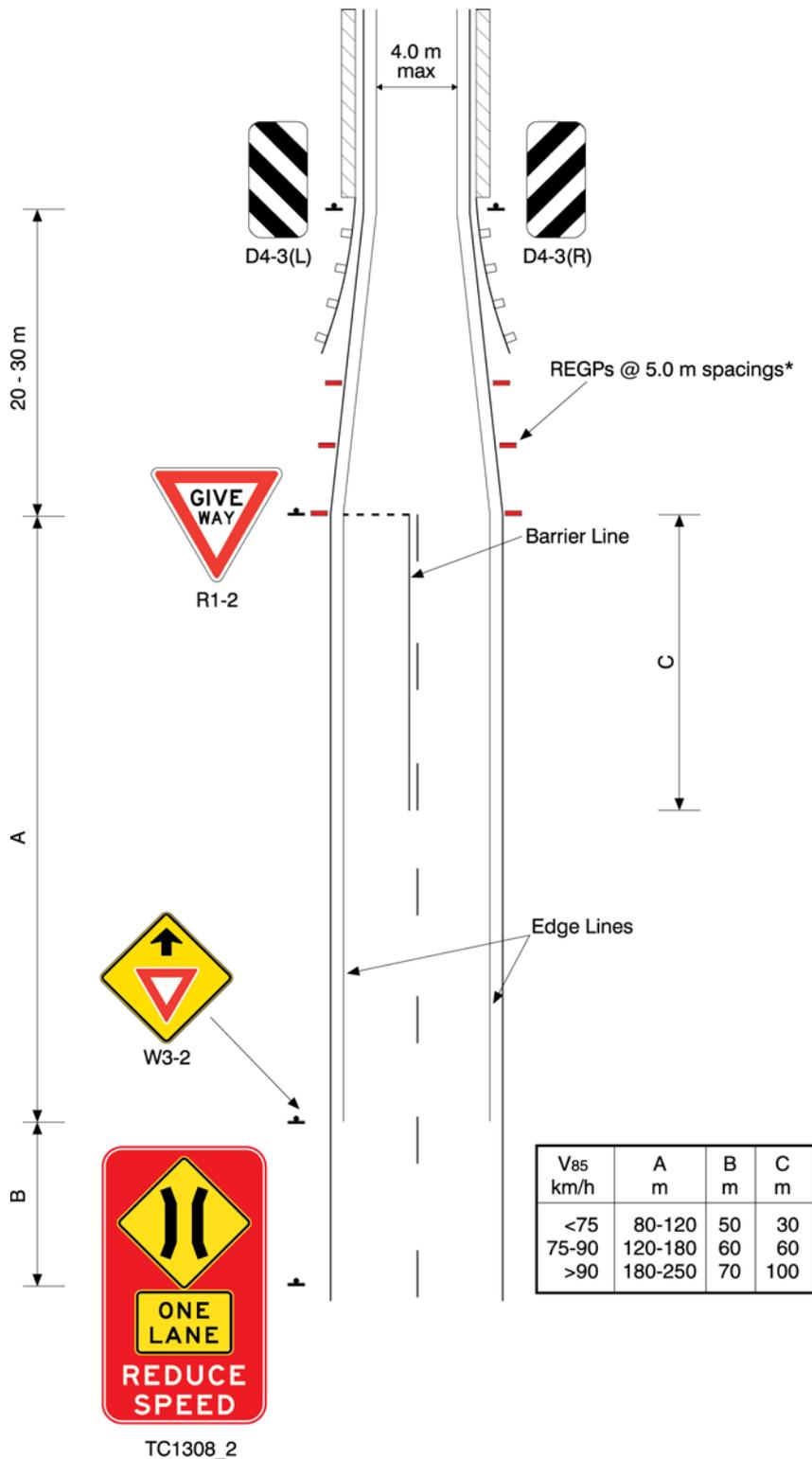
Chart 3 – Selection of signing and linemarking application



* A poor approach is defined as a section of road where the vertical or horizontal alignment results in substantial forward sight visibility that limits the view to the structure and/or opposing traffic departing the structure. Furthermore, where the roadside environment on approach to the structure is narrow and there is limited opportunity for motorists to move onto the shoulder to avoid opposing traffic, the approach can also be categorised as poor.

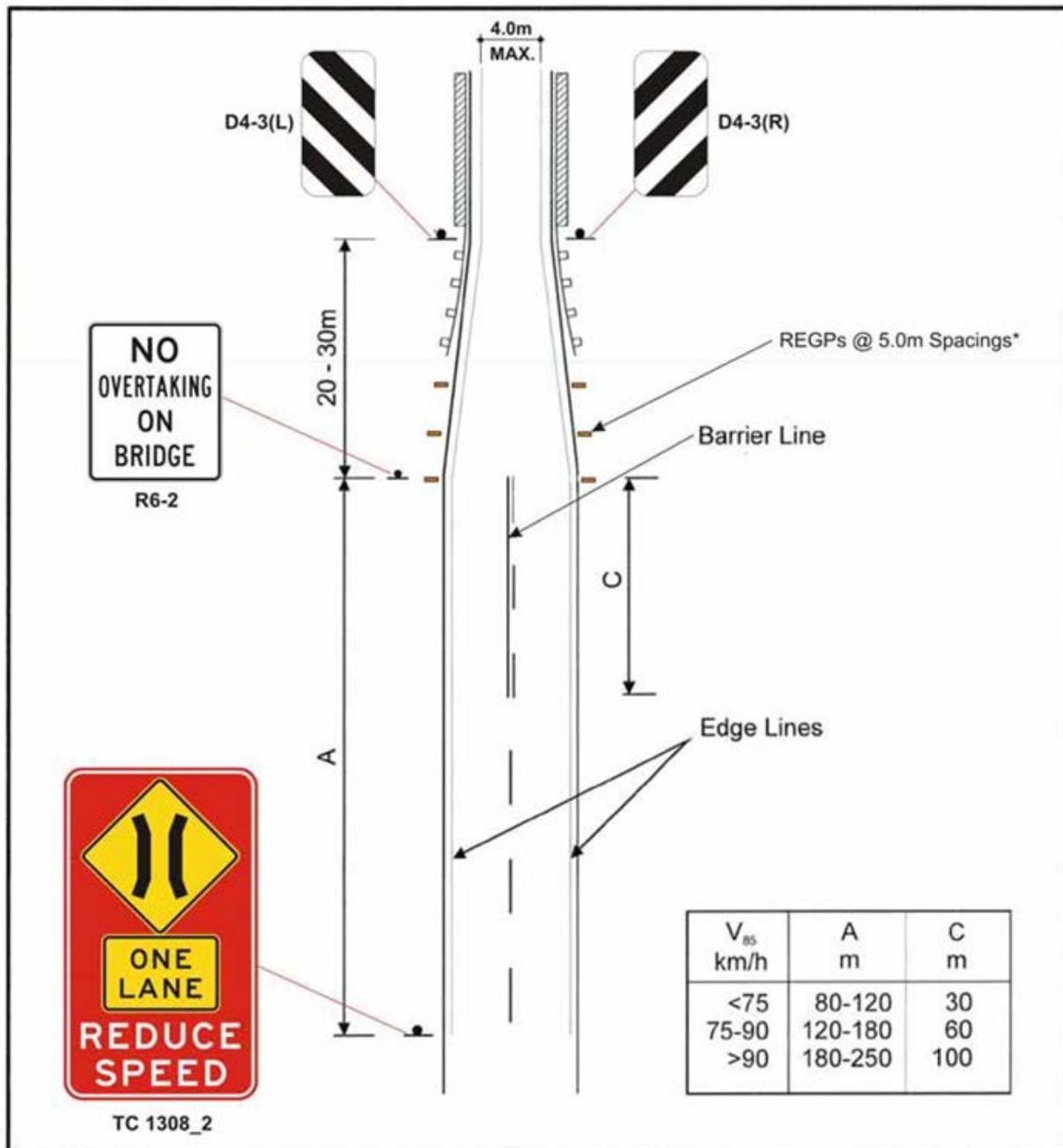
** A significant crash history relates to the frequency and severity of crashes at the subject structure compared to other similar structures throughout the local road network.

Figure 3-A – Controlled approach to one lane crossing



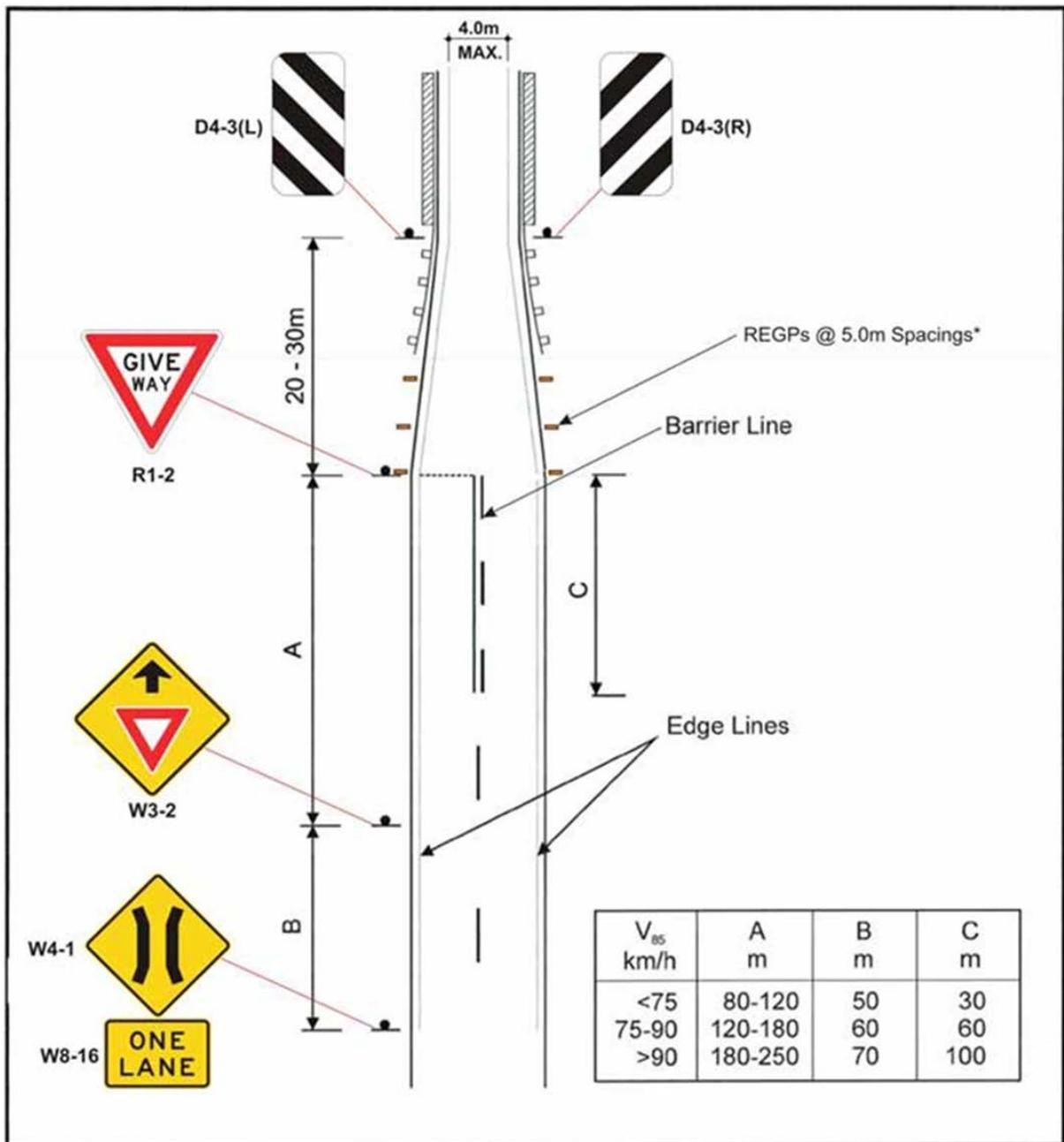
* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed at 5.0 metre spacings along the entire length of the crossing.

Figure 3-B – Controlled approach to one lane crossing



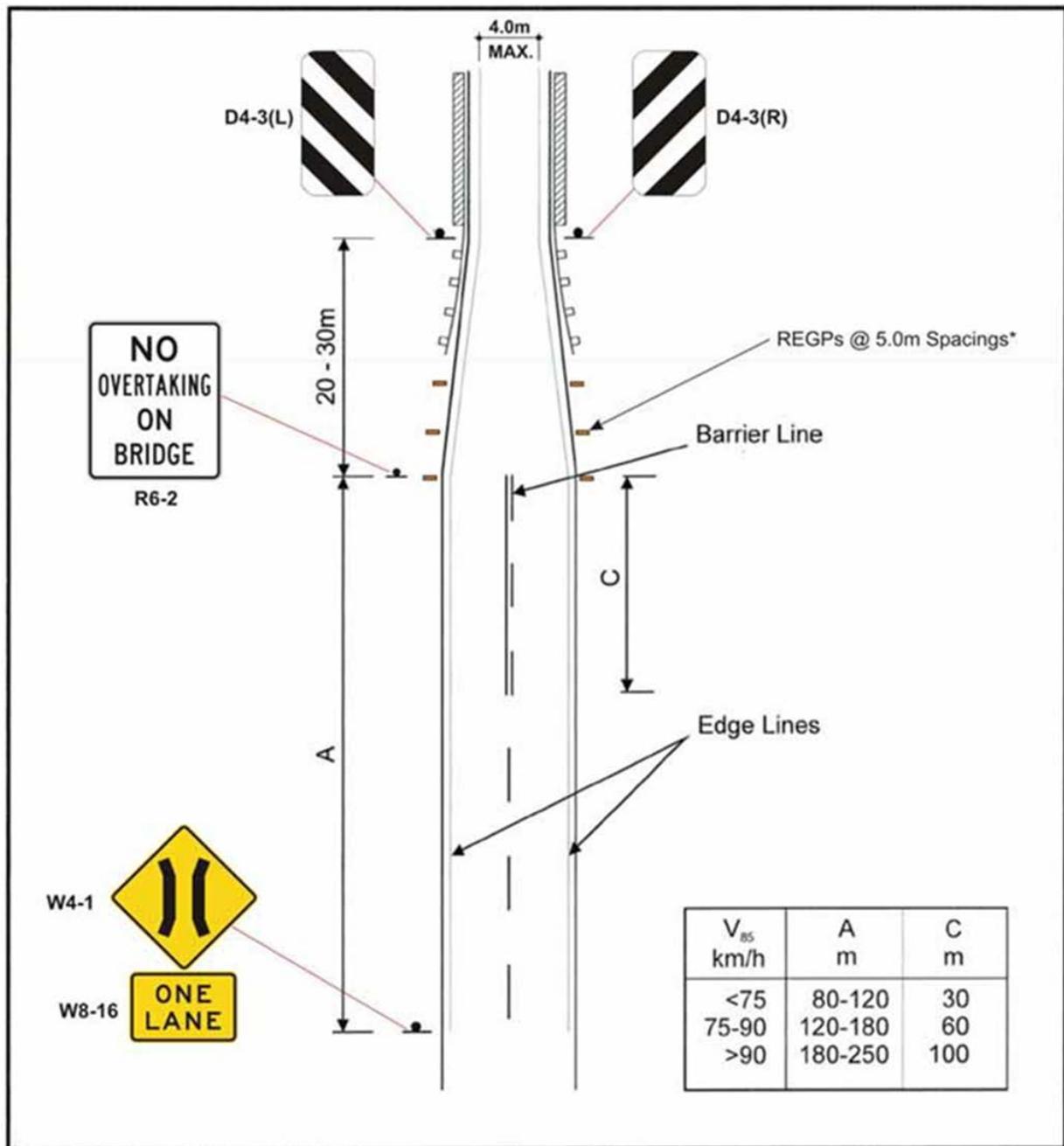
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Figure 3-C – Controlled approach to one lane crossing



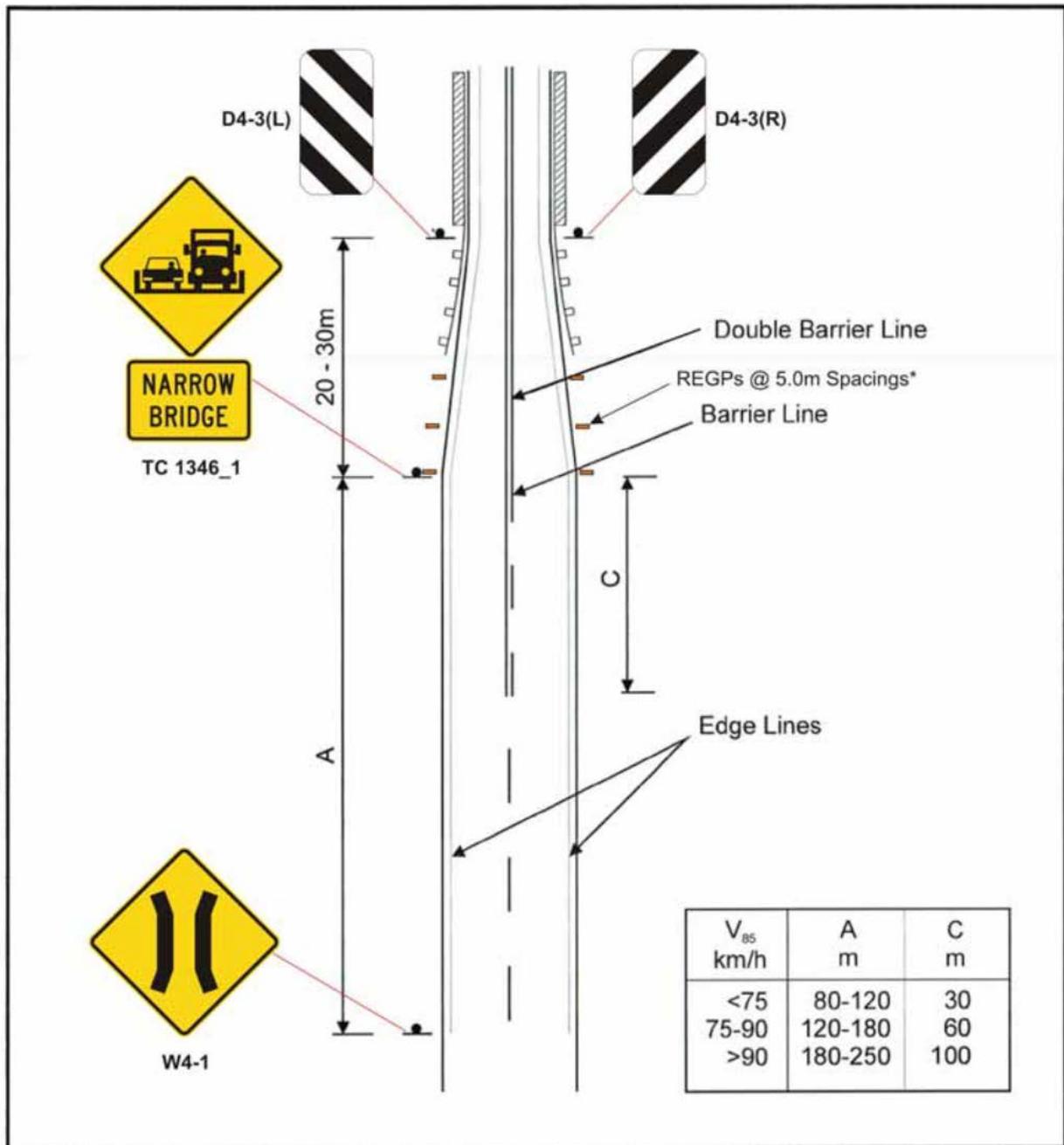
* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed 5.0 metre spacings along the entire length of the crossing.

Figure 3-D – Uncontrolled approach to one lane crossing



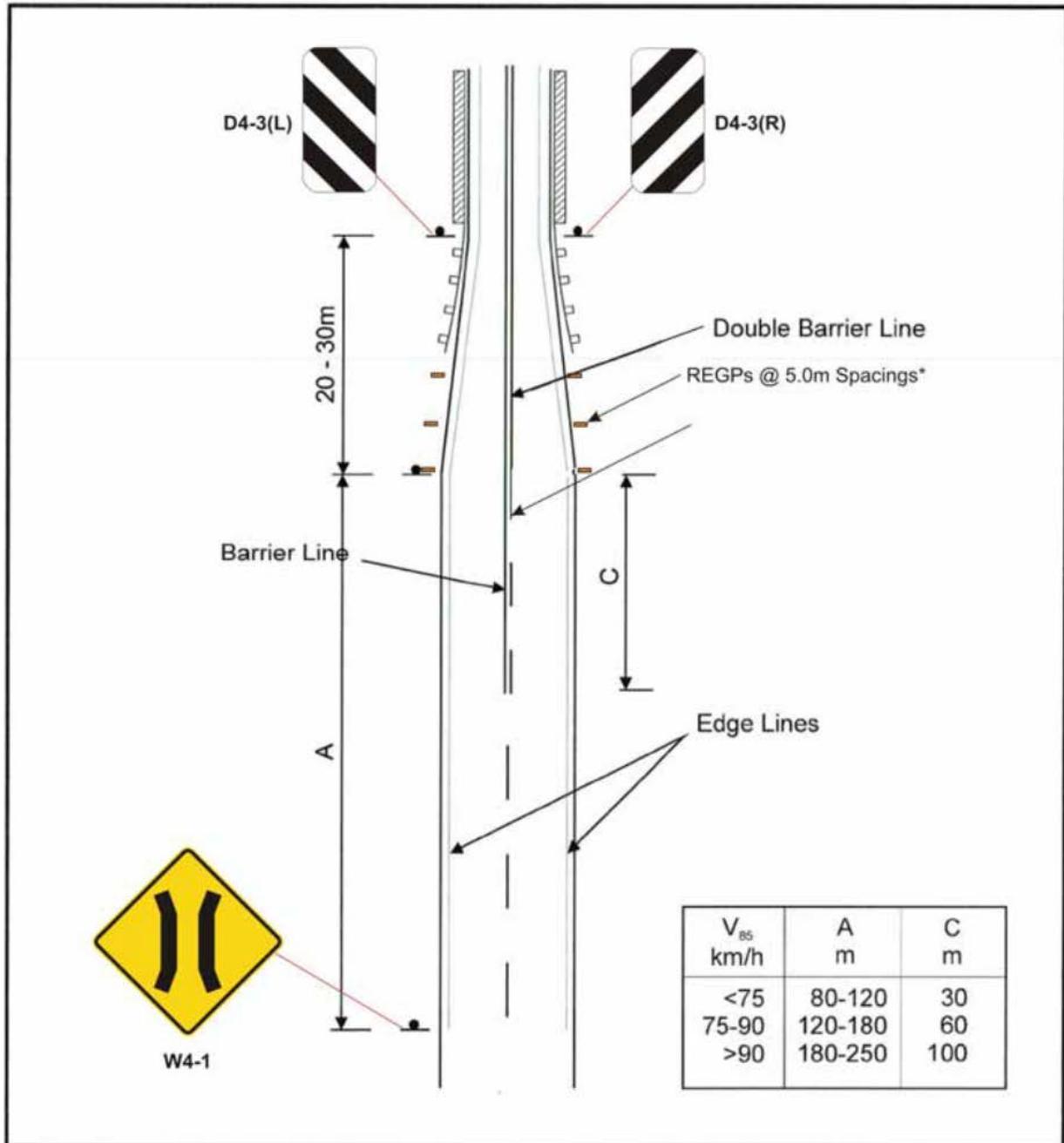
* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed at 5.0 metre spacings along the entire length of the crossing.

Figure 3-E (Refer Chart 3)



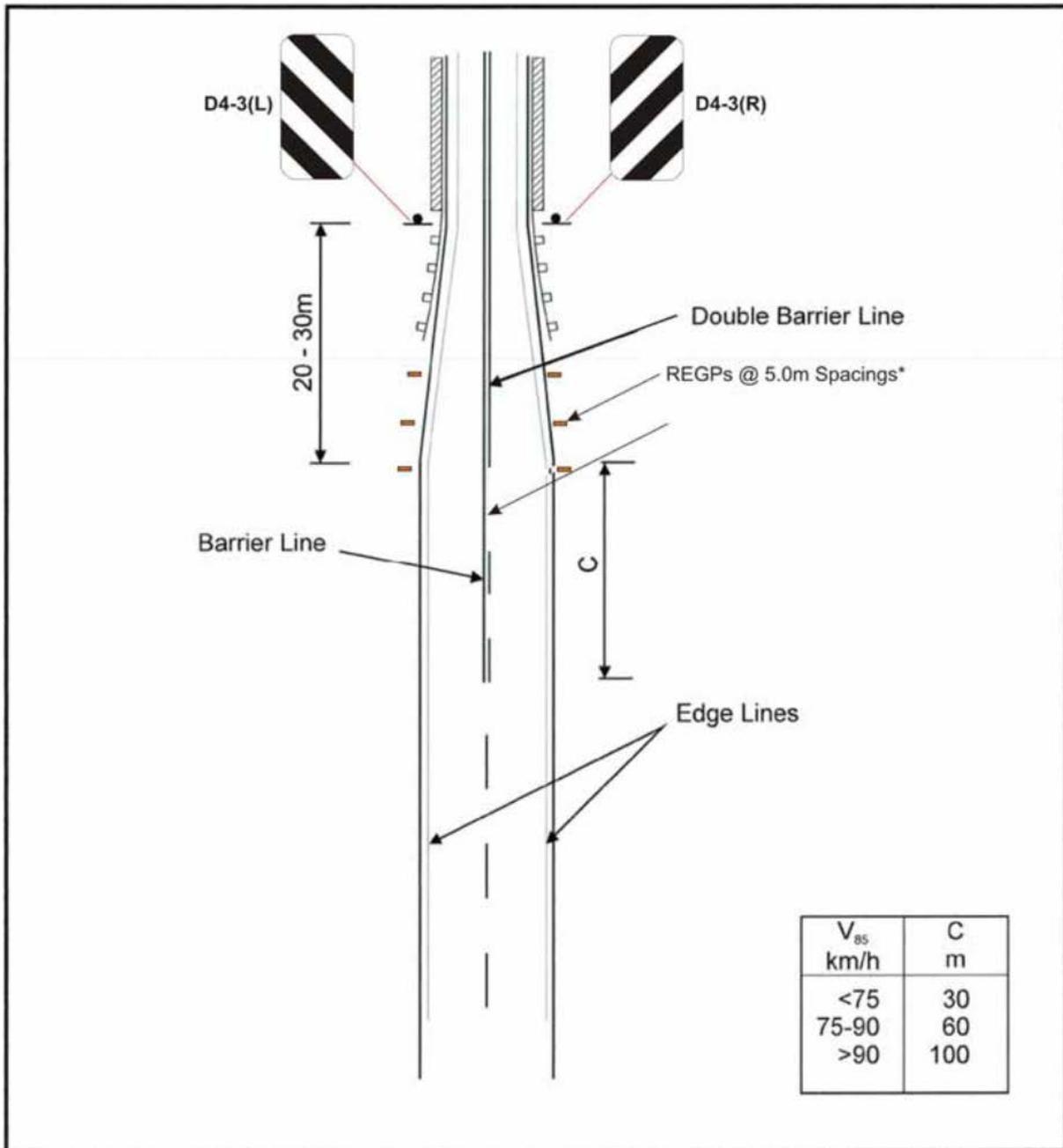
* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed at 5.0 metre spacings along the entire length of the crossing.

Figure 3-F (Refer Chart 3)



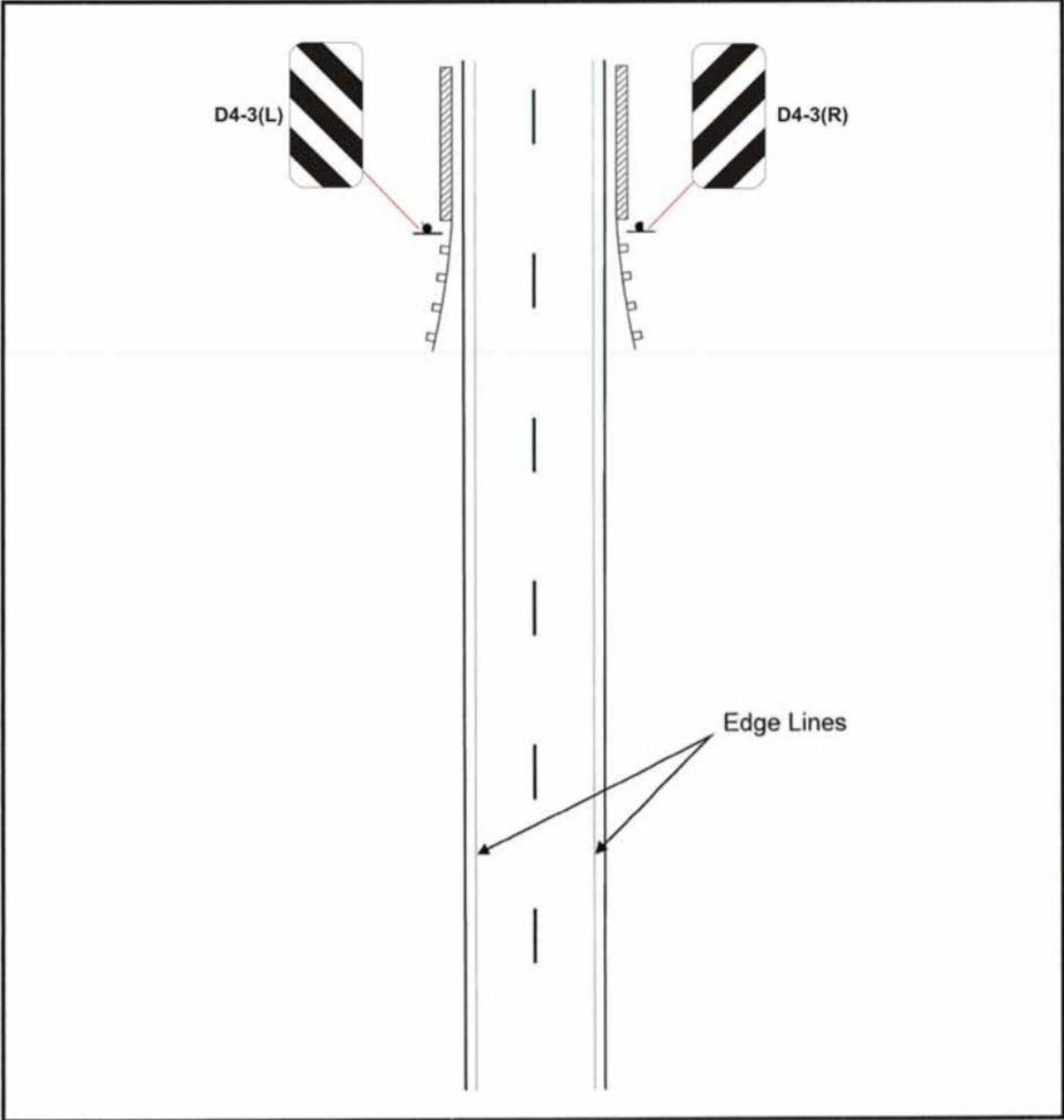
* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed at 5.0 metre spacings along the entire length of the crossing.

Figure 3-G (Refer Chart 3)



* Road edge guide posts (REGPs) shall be installed on both approaches to narrow crossings, commencing at the transition to the narrower section of pavement. To clearly delineate the change in pavement width, pairs of REGPs are to be installed at 5.0 metre spacings between the start of the transition and the barrier system shielding the crossing. Delineators must be installed on barrier structures as per Transport and Main Roads standard drawings. Where a barrier system is not installed, REGPs shall be installed at 5.0 metre spacings along the entire length of the crossing.

Figure 3-H (Refer Chart 3)



* Bridge structures must be delineated with reflectors as per Transport and Main Roads standard drawings.

4.6.2.5-1 Speed limitations

Where it is necessary to limit vehicle speeds on a bridge by regulatory means, a speed zone signposted in accordance with the 'signs for bridges' provisions of Part 4 of the MUTCD shall be created. The Speed Restriction (R4-1) sign at the beginning of the zone shall have the supplementary plate ON BRIDGE (G9-49) mounted below it or a 'BRIDGE DAMAGE CONTROL' sign (TC2224) (see Clause 4.6.6.4).

4.6.6 Signs for approaches to structures and obstructions

4.6.6.4-1 Speed limits on bridges

Where it is required to impose a permanent (or temporary) speed limit to manage structural deficiencies on a bridge, a speed zone shall be signposted in accordance with Part 4 of the MUTCD. Signing for temporary works on bridges shall be in accordance with Part 3 of the MUTCD.

The signs used are as follows:

(a) *Speed restriction (R4-1)*



See Part 4 of the MUTCD for use of this sign.

(b) *On bridge (G9-49)*



The ON BRIDGE sign shall be mounted below the Speed Restriction sign when it is used to impose a permanent speed limit on a bridge.

(c) *Bridge damage control (TC2224)*



The BRIDGE DAMAGE CONTROL sign shall be mounted below the Speed Restriction sign when it is used to impose a temporary speed limit on a bridge to manage structural deficiencies.

