

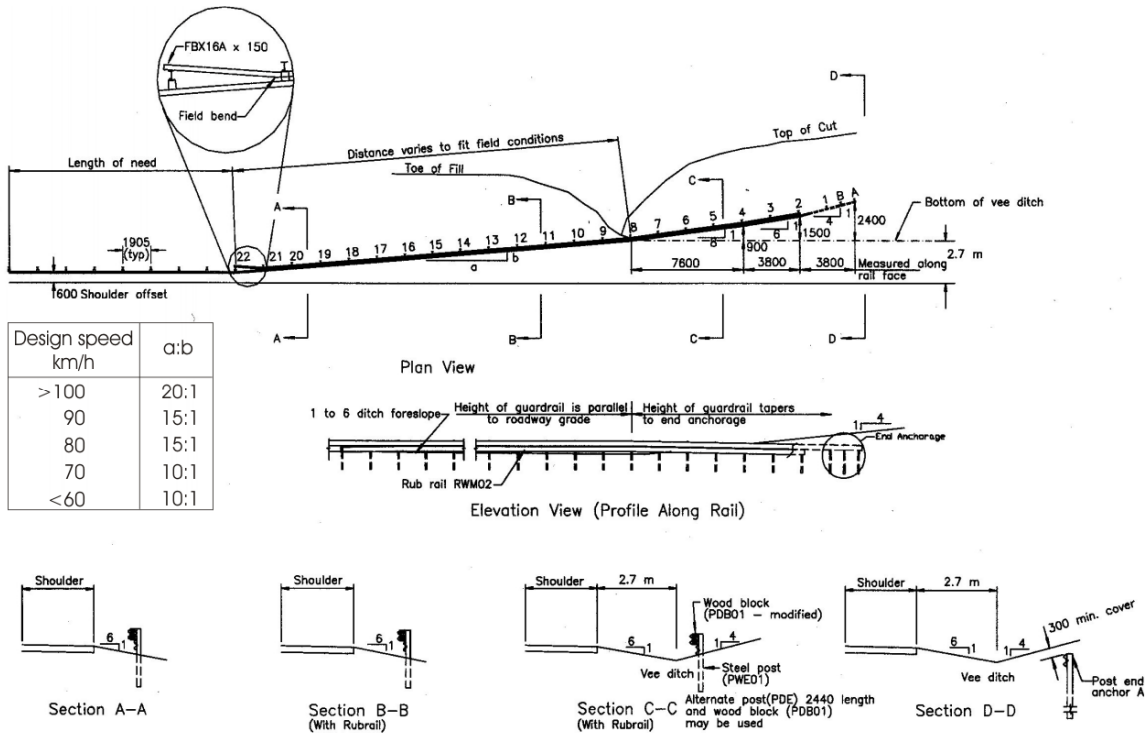
BURIED IN BACKSLOPE

REVISION REGISTER

Issue & Revision	Description	Date
1	Issued for use.	23/2/2004.
1 A	Minor editorial revisions.	3/03/2006.

This non-gating end and redirective end treatment was developed as an end treatment for W-beam barrier where the road is transitioning from cut to fill.

Drawing:



Ownership: Non-proprietary

Supplier: Not applicable.

Test Level: Tested in accordance with NCHRP 350 to TL3.

Configuration:

The following modification to the tested configuration is accepted by Main Roads the three 1.8m-long steel posts used for the anchor may be reduced to two posts, spaced at 1905 mm, and their length reduced to 1.2 m all below ground.

Design:

- Ideally used at locations where a natural backslope is reasonably close to the point where the barrier is introduced. When properly designed and located, this type of anchor eliminates the possibility of an end-on impact with the barrier terminal and minimises the likelihood of vehicular intrusion behind the barrier.
- Key elements of the end treatment are :
 - (1) using a flare rate that is appropriate for the design speed of the highway until the ditch flow line is reached;

- (2) keeping the W-beam rail height constant relative to the roadway grade until the barrier crosses the ditch flow line (and beyond where practical);
- (3) adding a rubrail whenever the clearance from the bottom of the W-beam to the ground line exceeds approximately 450 mm;
- (4) providing at least 22 m of barrier extending upstream from the beginning of the area of concern to the point where the barrier crosses the ditch flow line (to allow some recovery area for an impacting vehicle that may ride up a relatively flat backslope and get behind the barrier).

Limitations:

- Will only be suitable for use at specific locations.

Installation and Maintenance Requirements:

The end treatment is to be installed and maintained as W-beam barrier systems and in accordance with the drawings contained with the relevant FHWA approval letters.

Parts to be Replaced after Impact:

Damaged rail and posts.

Parts Typically Re-Useable after Impact:

Un-damaged rail and posts.

References:

Relevant FHWA Approval Letters:

(Refer to website http://safety.fhwa.dot.gov/fourthlevel/hardware/term_cush.htm)

Code	Description
CC-53*	Buried in backslope tested to TL 3 for the following configurations: 1 in 10 foreslope to a table drain, 1 in 10 foreslope to a flat bottom drain and with a 1 in 6 foreslope to table drain.
CC-53A	Buried in backslope tested to TL 3 for 1 in 4 foreslope to a table drain.

*Note the flare rates shown on drawings as an attachment to approval letter CC-53 shall be substituted with those contained in AS / NZS 3845.