W-Beam is a semi-rigid barrier system that can be either a public system or a proprietary system. The system described in this sheet is commonly referred to as the public domain strong post W-Beam system or the G4 W-beam system but is different from the American G4 W-Beam.

**Drawing:**

![Diagram of W-Beam with BLOCKOUT and STEEL POST]

**Ownership:** N/A  
**Supplier:** N/A  
**Test Level:** NCHRP 350 TL3.

**Design Considerations:**

**Test Deflection:** 1.2 m under TL 3 conditions.  
Note that this deflection was measured in a crash test performed under controlled conditions. The deflection measured is the horizontal offset between the face of the w-beam section measured prior to and following vehicle impact. Designers should be aware that the deflection figure published as a test result may not be the deflection value achieved in the field for all impacts by errant vehicles.

**Minimum Length:**  
28 m including end treatments. At lengths less than this the barrier has insufficient strength to resist impacts.
Offset from Kerbing:
Barrier is to be placed 200 mm from the face of the kerb to minimise nuisance impacts. Locations offset further from the kerb are not preferred because of the possibility of vehicle either vaulting the barrier or not being redirected by the barrier.

Height Correction:
If placed less than 3 m from the face of the kerb the mounting height is measured from the pavement surface. At greater offsets the mounting height is measured from the adjacent finished surface levels.

End Treatments:
Any of the appropriate approved proprietary end treatments are suitable on the approach side. The trailing terminal may be used on the departure side providing the site meets the restrictions placed on this end treatment. Restrictions on the use of any of the end treatments are contained on the relevant End Treatment Design Sheet.

Limitations:
- New systems shall be installed with approved solid blockouts. Refer to Annexure 603 D of Main Roads Specification 603.
- The cross slope shall be not greater than 10% for the area between the edge of travelled way and the barrier.
- Can be installed in different configurations as shown on standard drawings.
- Normal post length which requires at least 600 mm from the back of the post to the start of the embankment which shall be at a slope of $2(H):1(V)$ or flatter, and the area immediately behind the barrier for the width of the deflection shall be no greater than 10%.
- Post installed at hinge point which requires the use of a longer post and requires the post spacing to be reduced to 1.0 m. This treatment can be used at batters slopes up to and including $2(H):1(V)$.
- Should not be installed behind kerbs if possible. If kerbing is required then preferred kerbing is mountable Type A 100 mm. Semi-mountable is acceptable in some situations (speeds < 70 km/hr) but not preferred. Barrier kerbing shall not be used in front of barrier. Refer to Main Roads Standard Drawing 9331-0376 for kerb types.

Parts to be Replaced after Impact
W-Beam, blockout and posts may need to be replaced after impact.

Parts Typically Re-Useable after Impact
Undamaged sections.

References
AS / NZS 3845 Table 4.5.1.
Crash testing of W-Beam system undertaken by VicRoads in June 2013 - refer Main Roads file 08/3206.

Drawings

<table>
<thead>
<tr>
<th>Main Roads Standard Drawings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200331-010 to 016 inclusive and 201231-0041</td>
<td>Barrier installed with 600 mm verge behind the post.</td>
</tr>
<tr>
<td>200931-0002</td>
<td>Barrier installed at the hinge point with batter slope $2(H):1(V)$ or flatter.</td>
</tr>
</tbody>
</table>