



BRIDGE TECHNICAL DIRECTION BTD2008/07

DESIGN OF BRIDGE SUPPORTS FOR COLLISION LOAD FROM ROAD TRAFFIC

Background

When assessing the need for protection of piers or columns for collision loads from road traffic, risk assessment and determination of protective measures carried out in accordance with Clauses 11.1 and 11.2 of AS 5100.1 may result in one of the following:

1. No protection is required if the clearance of the piers or columns from road traffic exceeds the required minimum distance specified in the RTA Road Design Guide; or
2. Protection of the bridge piers or columns is required.

Road safety barriers may be provided to protect occupants of errant vehicles in the vicinity of bridge supports in accordance with the following documents:

- RTA Road Design Guide, and draft technical direction "Bridge Pier Protection" which can be obtained from RTA Road Design Policy & Standards Manager, Tel no. (02) 8837 0985; and
- AS/NZS 2845.

However, as errant vehicles may penetrate road safety barriers, especially at high impact angles, these barriers should be disregarded when assessing the need for protection of the bridge supports from collision.

Information and Bridge Technical Direction

Where mandated by the RTA Road Design Guide and Clauses 11.1 and 11.2 of AS 5100.1, either:

- A. Provide protection to the bridge piers or columns additional to any road safety barriers; or
- B. Design the bridge piers or columns for collision loads.

The design loads for both alternatives shall be in accordance with Clauses 10.1 and 10.2 of AS 5100.2.

If the piers or columns of a bridge have been designed for collision loads, the relevant design loads shall be provided on the cover sheet of the bridge drawings in accordance with Clause 1.2 (g) of AS 5100.2.

If protection of piers or columns has been provided, this will be essential for the structural integrity of the bridge. The type, location and required length of the protection shall be detailed on the bridge drawings, preferably on the General Arrangement. In addition, a note shall be added to the effect that the pier or

column protection is provided for protection from road traffic collision loads, that it shall not be removed and that it must be replaced if damaged and properly maintained at all times.

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Approved: **Wije Ariyaratne**
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