CONSTRUCTION SPECIFICATION FOR

DEVELOPMENTS AND SUBDIVISIONS

C264 – Non-Rigid Road Safety Barrier

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ORIGIN OF DOCUMENT, COPYRIGHT

This document was originally based on AUS-SPEC - Development Construction Specification C264 – Non-Rigid Road Safety Barriers. Substantial parts of the original AUS-SPEC document have been deleted and replaced in the production of this Tamworth Regional Council Specification. The parts of the AUS-SPEC document that remain are still subject to the original copyright.

REVISIONS: C264 – NON-RIGID ROAD SAFETY BARRIERS

REVISION	AMENDMENT DETAILS	CLAUSES AMENDED	DATE ISSUED (The new version takes effect from this date)	Authorised - Director Regional Services
0	Original Issue		30/11/2018	

GENERAL

C264.01 SCOPE

The work to be executed under this Specification consists of the setting out, supply of all materials and erection of road safety barriers and terminals, in accordance with the requirements for non-rigid road safety barrier systems in AS/NZS 3845, at the locations shown on the approved design drawings.

This Specification details the requirements for public domain non-rigid road safety barrier systems. Where a patented non-rigid road safety barrier system is specified and shown on the approved design drawings, all materials shall be in accordance with the manufacturer's specifications and, it shall be constructed strictly in accordance with the manufacturer's instructions.

C264.02 REFERENCE DOCUMENTS

Documents Standards Test Methods

Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated.

Currency

Where not otherwise specified in the relevant Tamworth Regional Council (TRC) Construction Specifications or the approved design drawings, the Constructor shall use the latest versions of the Reference documentation, including amendments and supplements, listed in the TRC Construction Specifications at the time of the Works approval.

(a) Tamworth Regional Council (TRC) Specifications

C201 - Control of Traffic.

C271 - Minor Concrete Works.

(b) Australian Standards

References in this Specification or on the approved design drawings to Australian Standards are noted by their prefix AS or AS/NZS.

AS 1906.2	-	Retroreflective devices (non-pavement application).
AS/NZS 3845	-	Road safety barrier systems.
AS/NZS 4680	-	Hot-dip galvanised (zinc) coatings on fabricated ferrous articles

MATERIALS

C264.03 COMPONENTS

Steel

All steel components for public domain non-rigid road safety barrier systems, W-beam and Thrie-beam, shall be in accordance with AS/NZS 3845 and shall be of the type as shown on the approved design drawings.

C264.04 CERTIFICATION

Evidence of Conformance

Steel and timber road safety barrier components shall not be erected until the Constructor has produced documentary evidence to the Developer's Representative that road safety barrier components conform to the requirements of this Specification.

CONSTRUCTION

C264.05 GENERAL

Traffic Control

The Constructor shall at all times conform to the requirements of *C201 – Control of Traffic*.

Construction of non-rigid road safety barrier shall comply with AS/NZS 3845 except where explicit departures are detailed on the approved design drawings.

Timing of Construction

Road safety barriers shall be erected after the construction of the base on concrete pavements and after the placing of the initial layer of asphaltic concrete or sprayed seal on a flexible pavement, unless otherwise approved by the TRC Representative.

Set Out

The Constructor shall set out the work to ensure that all road safety barriers and terminal sections are located in accordance with the approved design drawings.

Cables and Ducts

Underground cables and ducts laid in the road safety barrier area shall be located prior to the erection of posts and all care must be taken not to damage such cables and ducts.

Underground Obstruction

The posts should be set to the full depth as shown on the approved design drawings. If this is not possible due to the presence of an underground obstruction, an alternative method of setting the posts, as approved by the TRC Representative, shall be used.

Post Accuracy

Posts shall stand vertical and the spacing shall be such that when the safety barrier is erected no post movement is necessary in order to align holes or for any other reason.

C264.06 ERECTION OF STEEL POSTS

Positioning of Posts

The safety barrier posts are to be located as shown on the approved design drawings. The top of the post shall be 710mm, 805mm or 865mm as appropriate for W-beam, Thrie-beam or modified blockout Thrie-beam respectively, above the ground level, unless otherwise shown on the approved design drawings. On terminal ends, the level of the posts shall be such as to conform to the extended crossfall of the main pavement unless otherwise shown on the approved design drawings.

Smooth Line/ Tolerances

When erected in position the posts shall be on a smooth line both horizontally and vertically with the tops of posts within ±20mm of the heights specified in paragraph 1 of this Clause.

Foundation and Testing

Steel posts shall be erected by driving in accordance with the requirements for foundation posts in AS/NZS 3845. The open section of the post shall point in the same direction as adjacent traffic. The posts are to be firm in the ground and any movement at ground level shall not exceed 3mm in any direction when force tested in accordance with AS/NZS 3845.

Damage to Posts

The posts shall not have any obvious deformation as a result of driving. Any damage which does occur to the posts is to be repaired within 24 hours using an organic zinc-rich primer in accordance with the repair requirements of Appendix E in AS/NZS 4680.

Constructor's Cost

Any post which has been excessively damaged will be rejected by the TRC Representative and shall be replaced by the Constructor at its own expense.

C264.08 ERECTION OF ROAD SAFETY BARRIER RAILS

Blockouts

Steel blockout pieces shall be erected with the open section pointing in the same direction as adjacent traffic.

Rail Laps

All rail laps shall be in the same direction as adjacent traffic such that approach rail ends are not exposed to traffic.

Stiffening pieces, 300mm long, shall be used on intermediate posts. ***Stiffening Pieces***

Road safety barrier rails and blockout pieces shall be handled and erected in such a manner that no damage occurs to the galvanising. Any minor damage occasioned to the galvanising shall be repaired within 24 hours using an organic zinc-rich primer in accordance with the repair requirements of Appendix E in AS/NZS 4680. ***Minor Damage to Galvanising***

Any road safety barrier rails or blockout pieces which have been excessively damaged will be rejected by the TRC Representative and shall be replaced by the Constructor at the Contructor's expense. ***Constructor's Cost***

Road safety barrier rail attachment bolts and splice bolts are to be tightened initially such that the barrier can be erected. Adjustments are then to be made to the rails using the slotted holes provided to produce a smooth regular line, free of any kinks or bumps. The overall line of the top of the safety barrier rails is to visually conform with the vertical alignment of the road pavement. ***Erection Procedure***

When the alignment both vertically and horizontally is obtained the splice bolts are to be fully tightened. The bolt head (not the shoulder) should be in full bearing with the rail. ***Splice Bolt Tightening***

C264.09 END TREATMENT OF ROAD SAFETY BARRIERS

Both approach and departure ends of the road safety barrier shall be constructed with leading and trailing terminal sections at locations shown and as detailed on the approved design drawings. ***Leading, Trailing Terminals***

Approved end terminals shall be installed at approach end locations of road safety barriers as shown on the approved design drawings. ***End Terminals***

The approach and departure ends of double sided road safety barriers shall have terminal sections as detailed on the approved detailed drawings. ***Double Sided Safety Barrier***

Non-rigid road safety barrier connections to rigid road safety barriers or bridge parapets shall be as detailed on the approved design drawings. ***Connections to Rigid Barriers***

C264.10 DELINEATORS

Delineators complying with AS 1906.2 shall be fixed with brackets to the road safety barrier, to the details and at the locations shown on the approved design drawings beginning at the first post and then in accordance with Table C264.1. ***Fixing***

Radius of Curve (m)	Spacing of Reflectors on Barrier (every)
30-90	3rd post
90-180	5th post
180-275	8th post
275-365	11th post
over 365	16th post
(including straight road)	

Table C264.1 – Delineator Spacing

The delineators shall be so arranged that drivers approaching from either direction will see only red reflectors on their left side and white reflectors on their right side. ***Arrangement and Colour***

LIMITS AND TOLERANCES

C264.11 SUMMARY OF LIMITS AND TOLERANCES

The limits and tolerances applicable to the various clauses in this specification are summarised in Table C264.2 below:

Item	Activity	Limits/Tolerances	Spec Clause
1	**Vertical Alignment**		
	Tops of steel posts.	± 20mm	C264.06
2	**Post Movement**		
	Post Movement	≤ 3mm	C264.06

Table C264.2 - Summary of Limits and Tolerances