

MAX-TENSION TERMINAL

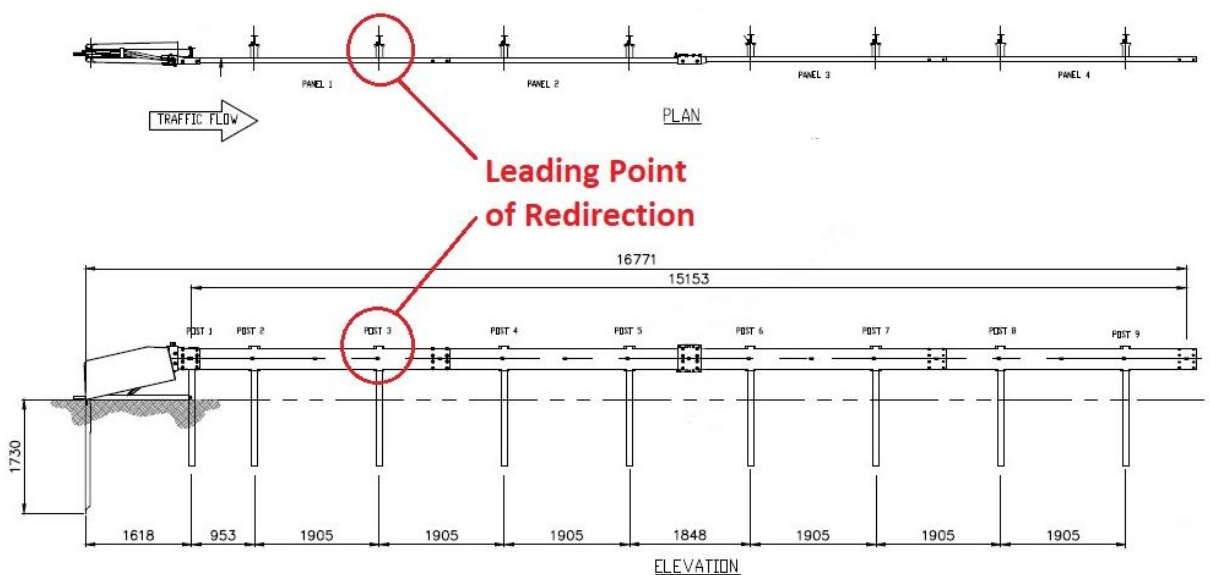
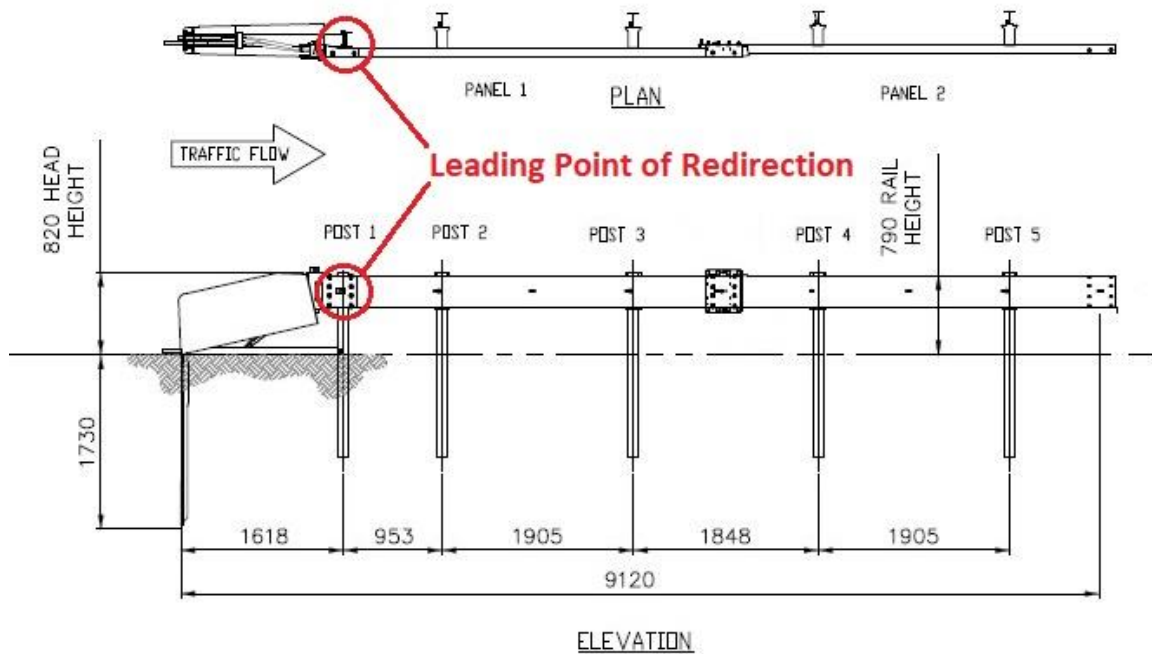
REVISION REGISTER

Issue & Revision	Description	Date
1	Issued for use.	30/03/2020
1 A	Delineation cover amended, manuals updated.	27/10/2022
1 B	Supplier updated.	12/01/2024

The MAX-Tension is a tension-based gating end treatment with a W-Beam profile. When hit end on, the impact head is forced to slide along the terminal, developing friction between the cables and the friction bar inside the impact head.

Note that the X-Tension 350 terminal was previously accepted by Main Roads, but is no longer accepted for new installations.

Drawings:



MAX-TENSION TERMINAL

TL3 Terminal



Photograph of Terminal (incl plastic delineation cover)

Ownership: Lindsay Corporation
<http://www.barriersystemsinc.com/>

Supplier: Safe Direction Pty Ltd
5 Simpson Close, Smeaton Grange, NSW 2567
Ph: (02) 4648 0394
Website - <http://www.safedirection.com.au/>

Test Level: Tested in accordance with MASH TL 2 and TL 3.

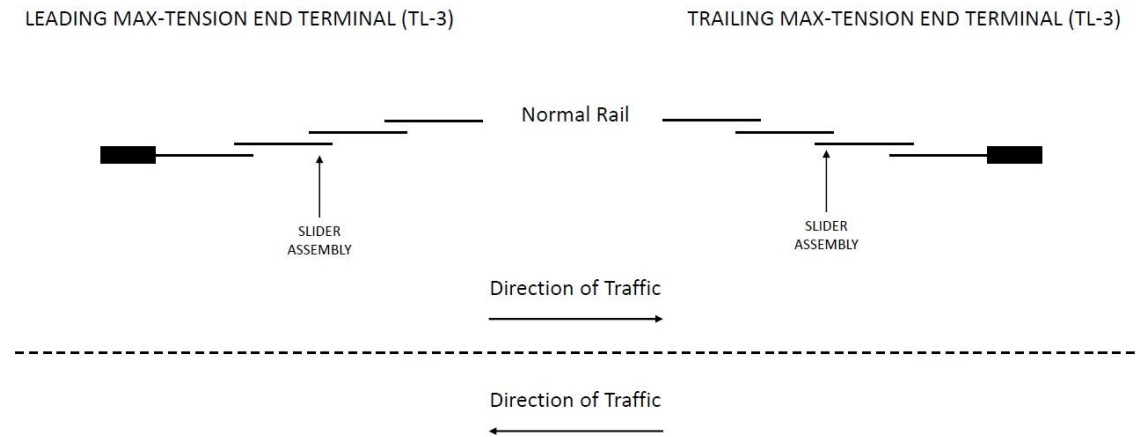
TL	Length (m)	Speed (km/hr)	Point of Redirection		Allowable Flare (mm)	Suppliers Drawing
			Leading (m)	Trailing (m)		
2	9.120	70*	At Post 1	3.8 from Post 1	Can be installed parallel or on 25:1 over full length.	MAXTL2-2
3	16.771	100	2.86 from Post 1	7.6 from Post 1	Can be installed parallel or on 25:1 over full length.	MAXTL3-2

* The speed indicated is the design speed (posted speed of 60 km/h).

Configuration:

- System width is 0.445 m.
- Composite proprietary blockouts are to be used as indicated in the MAX-Tension Training and Product Installation Manuals (August 2021) provided by ACP.
- The sticker on the delineation mounting shall be 220 mm x 380 mm and is to be Black bands on White Class 1 reflective backgrounds with the width marker pattern as shown in Australian Standard 1742.2 Sign D4-3 (L, R).
- When the MAX-Tension terminal is installed on the departure end of a barrier system the terminal is to be orientated as per Sketch 1.

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Note - TL-3 model (shown above) consists of 4 x rails, TL-2 model consists of 2 x rails

Sketch 1 – MAX-Tension Departure End Terminal Layout

Design:

- TL 3 Design is to be in accordance with the MAX-Tension™ Training and Product Installation Manual (August 2021) provided by ACP.
- TL 2 Design is to be in accordance with the MAX-Tension™ TL-2 Training and Product Installation Manual (August 2021) provided by ACP.
- Preferred plan layout is to install the terminal at the maximum flare rate to reduce nuisance impacts. In constrained situations, the flare can be reduced.
- In locations of constrained width or on high embankments where the cost to provide additional width is not warranted then the terminal may be installed parallel to the road.
- Grading around the MAX-Tension terminal is as shown on Main Roads Drawings 201531-0096 and 201531-0097.
- As part of the design, the Designer shall check to ensure that there are no site constraints such as rock, cover to services or pipes or other factors that would preclude the use of the normal post lengths.
- Terminal has been crash tested when installed in AASHTO standard soil (i.e. CBR \geq 60). Refer to supplier for installation details in other soil conditions.
- A median configuration of the MAX-Tension terminal has also been developed, but Main Roads do not accept this configuration.

Limitations:

- Must be installed on a straight flare or parallel to the travel way.

Installation and Maintenance Requirements:

- The terminal shall be installed and repaired after impact in accordance with the installation and repair instructions.
- If an X-Tension 350 terminal is impacted then the complete terminal should be replaced with MAX-Tension terminal.

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Parts to be Replaced after Impact:

For a side on impact replace W-Beam. For a front on impact rail the impact head, W-Beam and posts may need to be replaced. Assess cable for any damage and replace if necessary.

Parts Typically Re-Useable after Impact:

Head assembly, ground anchor, cable bracket, slider bracket, ground strut.

References:

Relevant FHWA Approval Letters:

https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/

Code	Description
CC-134	FHWA approval letter for TL 2.
CC-133	FHWA approval letter for TL 3.

For the MAX-Tension TL 3, refer to Main Roads WA file 18/8434

For the MAX-Tension TL 2, refer to Main Roads WA file 18/8435