

**To:** All HQ Directors: Operations, Planning and Major Projects  
All Regional Directors  
All Regional Managers, Engineering  
All District Managers, Transportation  
All Regional Traffic Engineers

**Subject:** Transverse Rumble Strips (TRS)

**Background:**

Transverse rumble strips (TRS) may be used to call the road user's attention to standard regulatory and warning devices or to alert the road user of a changing roadway environment where there is a need to exercise extraordinary caution. TRS consist of raised bands of material or grooves cut in the pavement perpendicular to the direction of vehicular travel. These grooves provide a minimal amount of vertical deflection of a vehicle's wheel, resulting in the transmission of noise and vibration in order to draw the road user's attention to a feature of the road ahead.

**Policy:**

The use of transverse rumble strips on Provincial highways requires approval by the Senior Traffic Engineer (STE).

The approval of the STE is contingent on an engineering assessment of TRS use carried out by the Regional Traffic Engineer (RTE). An assessment on TRS use should include:

- The traffic control issue at the site
- Traffic control devices currently in use
- Traffic control alternatives considered or previously used
- Collision history of the site
- The reason why TRS are being considered
- A description of the location including distances to nearby residences

In most circumstances, TRS should only be considered after standard traffic control measures have been tried and found to be ineffective.

TRS are always to be used in conjunction with other standard traffic control devices and never as a stand-alone solution.

### **Scope and Application:**

TRS are not traffic calming devices and shall not be used as a traffic calming measure.

The long-term success of TRS as a traffic control enhancement lies in their very select and limited application. Transverse rumble strips should not be used as the standard treatment for alerting motorists to conditions ahead. Overuse of TRS will degrade their impact on road users thereby reducing their effectiveness as a safety tool.

The minimum depth of asphalt pavement required for milled rumble strip installation is 50 mm. Milled TRS shall not be applied to concrete or seal coated surfaces or asphalt surfaces where pavement deterioration or cracking is evident. In addition, milled TRS shall not be installed on bridge decks. Pavement should be in sufficiently good condition to accept the installation process without raveling or deteriorating. Winter maintenance activities should be taken into account when considering the use of raised TRS.

The noise impact of TRS will be a function of several variables including vehicle type, volume, and speed as well as ambient noise levels. Noise generated by TRS is a consideration in the decision to use TRS, especially when there are residences or other accommodations (e.g. Hotels) within;

- 500 m in rural environments, or
- 200 m in urban environments.

The following table summarizes possible TRS applications which may be considered on Provincial highways.

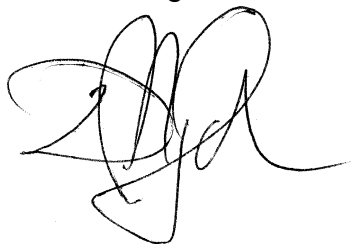
Possible Application	Required Conditions
Minor Approach to Rural Stop Controlled Intersection	<ul style="list-style-type: none"><li>• Posted speed limit 70 km/h or greater</li><li>• Historic trend of collisions due to failure to obey traffic control sign</li><li>• Will not cause undue noise for nearby residents</li></ul>
Horizontal Alignment Change (Significant or Unexpected Curve)	<ul style="list-style-type: none"><li>• Curve is already identified by overhead warning sign(s)</li><li>• Historic trend of run-off-road collisions or truck rollovers</li><li>• Will not cause undue noise for nearby residents</li></ul>
Toll Plaza, Ferry Terminal or Border Crossing	<ul style="list-style-type: none"><li>• Facility that requires drivers to stop</li><li>• Stop condition may be unexpected to drivers</li><li>• Will not cause undue noise for nearby residents</li></ul>
Within a Construction Zone in Advance of Workers	<ul style="list-style-type: none"><li>• Temporary transverse rumble strips</li><li>• Will not cause undue noise for nearby residents when construction is inactive</li><li>• Will not cause road users to make unusual manoeuvres to avoid rumble strips</li></ul>

In general, for TRS to be considered all required conditions should be met for the possible application.

The attached drawing details the placement and layout requirements for transverse rumble strips.

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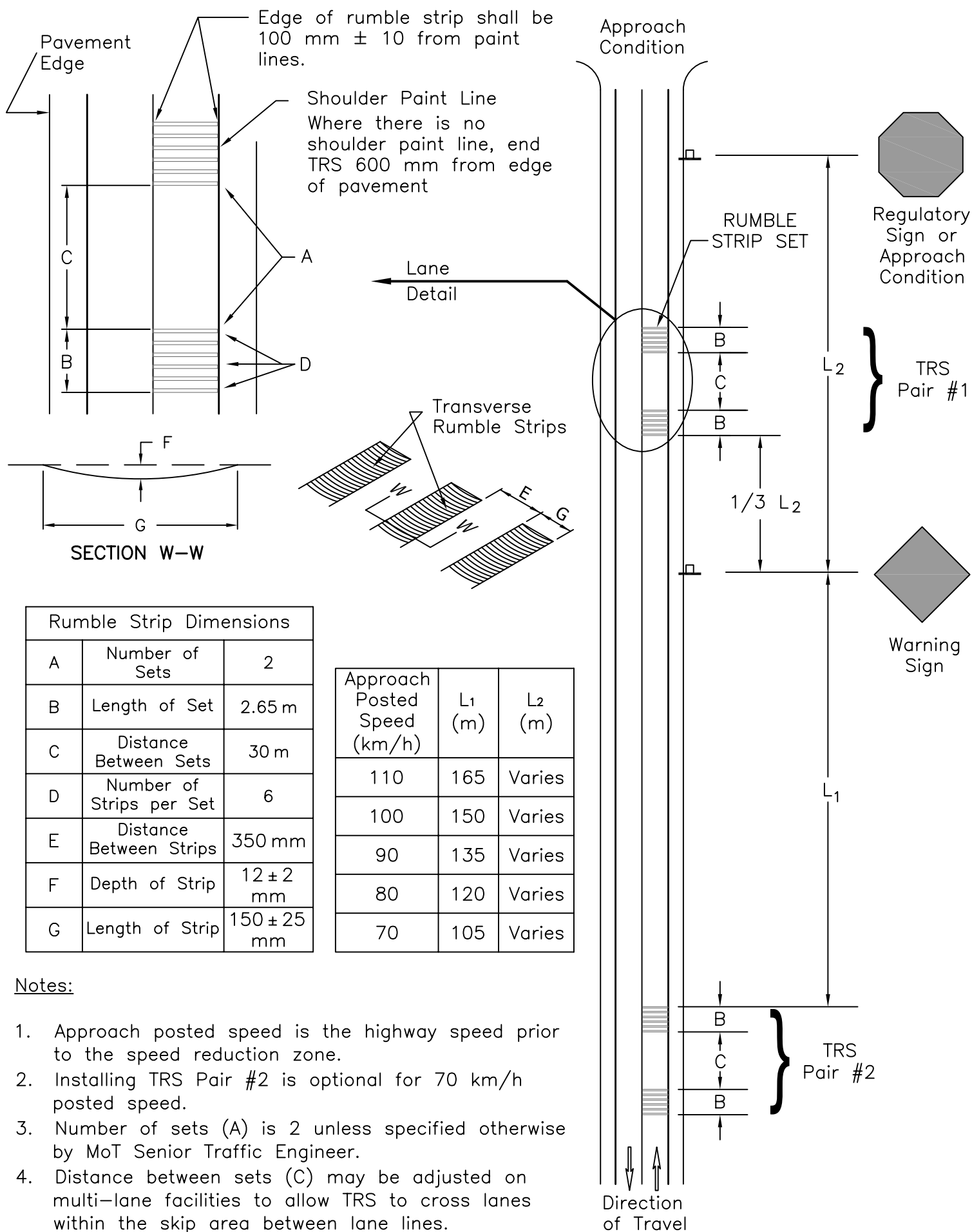


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Dirk Nyland, P.Eng.  
Chief Engineer

Attachment

# TRANSVERSE RUMBLE STRIP (TRS) LAYOUT



Dimension	Description	Value
A	Number of Sets	2
B	Length of Set	2.65 m
C	Distance Between Sets	30 m
D	Number of Strips per Set	6
E	Distance Between Strips	350 mm
F	Depth of Strip	12 ± 2 mm
G	Length of Strip	150 ± 25 mm

Approach Posted Speed (km/h)	L1 (m)	L2 (m)
110	165	Varies
100	150	Varies
90	135	Varies
80	120	Varies
70	105	Varies

## Notes:

1. Approach posted speed is the highway speed prior to the speed reduction zone.
2. Installing TRS Pair #2 is optional for 70 km/h posted speed.
3. Number of sets (A) is 2 unless specified otherwise by MoT Senior Traffic Engineer.
4. Distance between sets (C) may be adjusted on multi-lane facilities to allow TRS to cross lanes within the skip area between lane lines.