

To:	HQ Directors: Operations, Planning and Major Projects	Traffic Control Companies in British Columbia
	Regional Directors	Field Services Branch
	Regional Managers, Engineering	BC MoT Maintenance Contractors
	District Managers, Transportation	BC Construction Safety Alliance
	Regional Traffic Engineers	WorkSafe BC
	Regional Bridge Engineers	

Subject: **GUIDELINES ON THE USE OF SPEED READER BOARDS (SRB) IN WORK ZONES**

1.0 Background

This circular provides guidelines on the use of SPEED READER BOARDS (SRB) which may be used to enhance traffic control devices in work zones. Specifications regarding work zone layouts shown in the BC Ministry of Transportation's (MoT) *Traffic Control Manual for Work on Roadways* have not changed.

SRB are electronic changeable speed display signs capable of detecting and displaying the speed of approaching vehicles in real-time via radar speed detection. SRB come either as trailer mounted units or pole mounted units.

2.0 Policy

This circular applies to work zones on highways under MoT jurisdiction whose workers are under direct or indirect contract for works carried out on behalf of MoT.

SRB may be used as part of the traffic control plan on:

- Long duration work zones (more than one daytime shift or nighttime work),
- Work zones that utilize Traffic Control Persons (TCP),
- Highway projects as requested by the special provisions in the project documentation.

Examples of typical projects where SRBs would be used include night paving jobs and major highway projects with project duration of one month or longer.

Ministry maintenance contractors are not required to use SRB for maintenance activities on provincial highways.

3.0 Deployment Guidelines

- When used to enhance the initial construction speed limit reduction on entry to a work zone, the SRB should be positioned downstream of the initial regulatory speed sign. This separation distance allows drivers to adjust to the new speed limit and will lessen crash potential due to heavy braking prior to the construction speed limit reduction sign.
- When used to reaffirm the work zone speed limit adjacent to an active work area within the construction zone, the SRB should be placed upstream of the active work area. As a general rule, the SRB are placed 100 m to 200 m in advance of active work areas. However, distances used will be subject to local site and operational conditions.
- When used to highlight TCP setups where active traffic control is being carried out, the location of the SRB should follow the placement guidelines illustrated in Figure 1 of Appendix A.
- SRB should only be in operation when the construction speed limit is in effect.
- The effectiveness of SRB on reducing travel speed will often decrease over time due to driver familiarity, especially on commuter routes. Therefore,
 - On short term, temporary work zones, or where TCP are present, the SRB should operate during the time workers are present and be removed or turned off when the activity is finished.
 - On long term work zones, if the SRB is active for an extended period, it may be periodically repositioned within the work zone to assist in maintaining SRB effectiveness.
- SRB should be installed in each direction where the work affects both directions of travel. Where the work only impacts one side of a divided highway, SRB are not required in the unaffected direction.
- SRB should not be placed in close proximity (on multi-lane highways) to merge and ramp areas. The intent of this measure is to minimize conflicts and improve lane transitions.
- Where work zones are divided into several work areas, or greater than 1.5 km in length, more than one SRB (per direction) may be considered to reaffirm and maintain speed reductions.
- If two or more SRB are used per direction on a work zone site, they should be separated by a minimum of 300 metres. Placement side by side, or within 300 metres may cause conflicting messaging to motorists.
- Once deployed, the SRB should be inspected for shadowing by other construction signs or structures to ensure sign visibility and effective operation.
- See **Appendix A** for examples of typical sign SRB layouts and dimensioning in work zones.

4.0 Sign Operation

Speed Reader Boards (SRB) installed within MoT work zones should meet the following guidelines:

- The SRB should include the text “Your Speed”, or similar, in conjunction with the numeric electronic display. This text may be static (non-electronic).
- Where the work zone speed limit or advisory speed is 80 km/h or greater, a three digit display may be used.
- If no vehicles are approaching the SRB, the display should be blank.
- The SRB should be programmed in relation to the work zone speed limit (if different than the posted speed limit):
 - The electronic display may be programmed to flash and/or display the message “Slow Down” when vehicle speed exceeds 10 km/h over the posted or advisory speed.
 - When vehicle speed exceeds 40 km/h over the posted or advisory speed, the numeric display should be programmed to go blank or display the message “Slow Down”.
- The radar in the SRB should be aimed to measure the speeds of vehicles in the lane closest to the workers, and/or work activity. Detection of approaching vehicles should take place no more than 6 to 10 seconds prior to reaching the radar unit’s location.
- The SRB should be sited and aligned (height, lateral offset, and orientation) to provide maximum legibility.
- SRB should be checked for operation and positioning at time of installation and at regular intervals as deemed appropriate for the sites particular operational parameters (i.e. site location, traffic volume, vehicle mix, type of construction activity, etc.)
- The SRB should be delineated/protected using barrels or tube markers/delineators. A minimum of 3 markers/delineators should be used on the upstream side of the SRB device.
- SRB signs may be connected to an electrical service or be solar/battery powered.

5.0 Contacts

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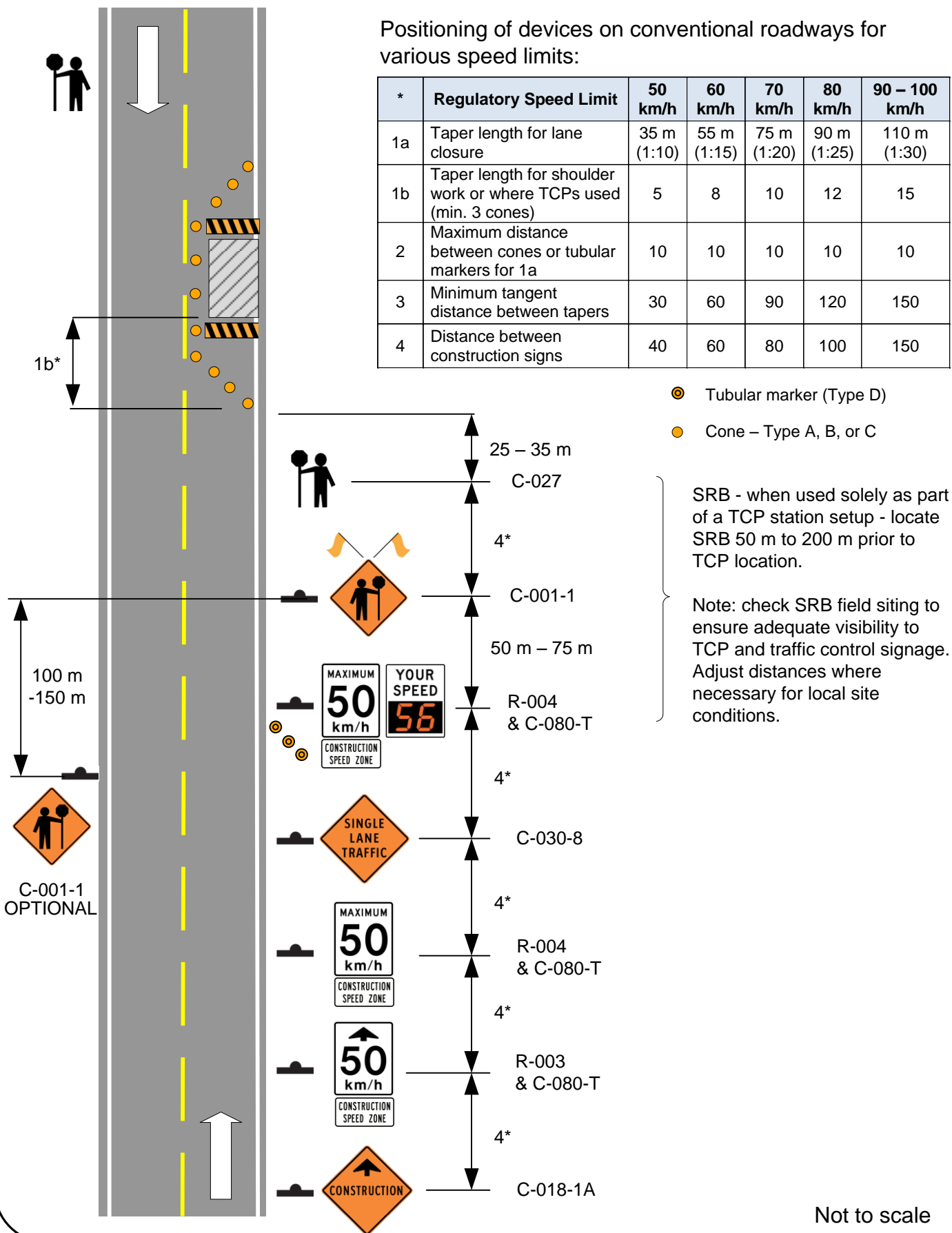


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Acknowledgements:

APPENDIX A

Typical Traffic Control Layouts Utilizing a Speed Reader Board(s)

Figure 1: Long Duration Lane Closure with Traffic Control Persons (TCPs) and Speed Reader Boards (SRB) – Two Lane Two-Way Roadway



Not to scale

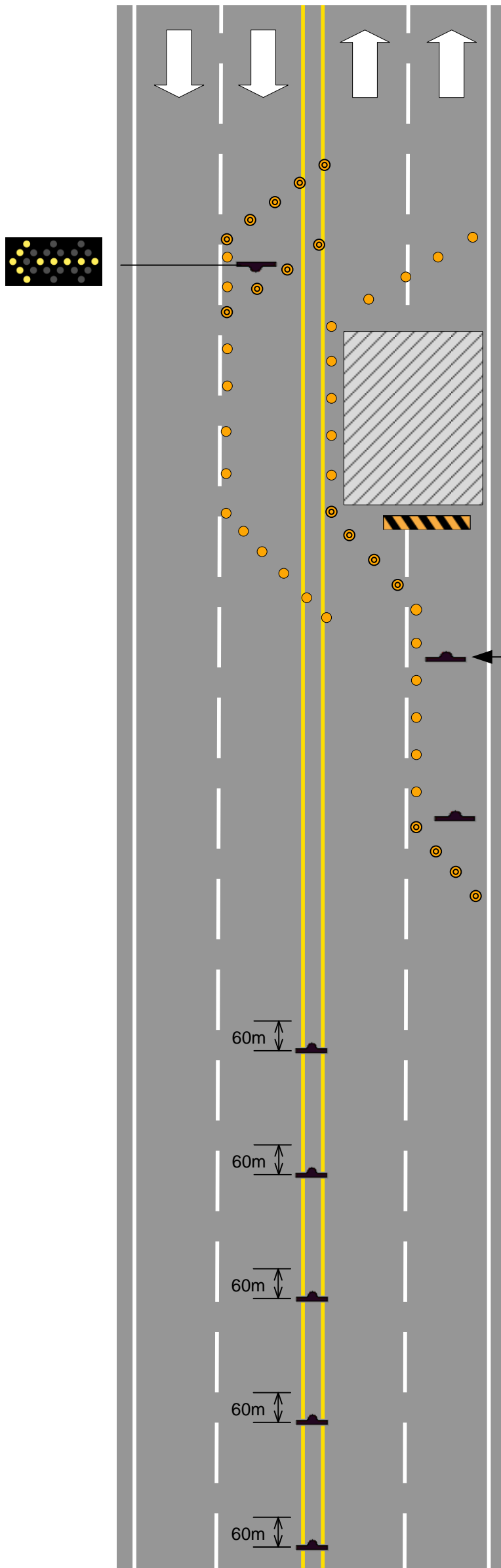
Figure 2: Freeway/Multilane Median Cross Over with Speed Reader Board (SRB)

Positioning of devices on Freeways/Multilane Arterials:

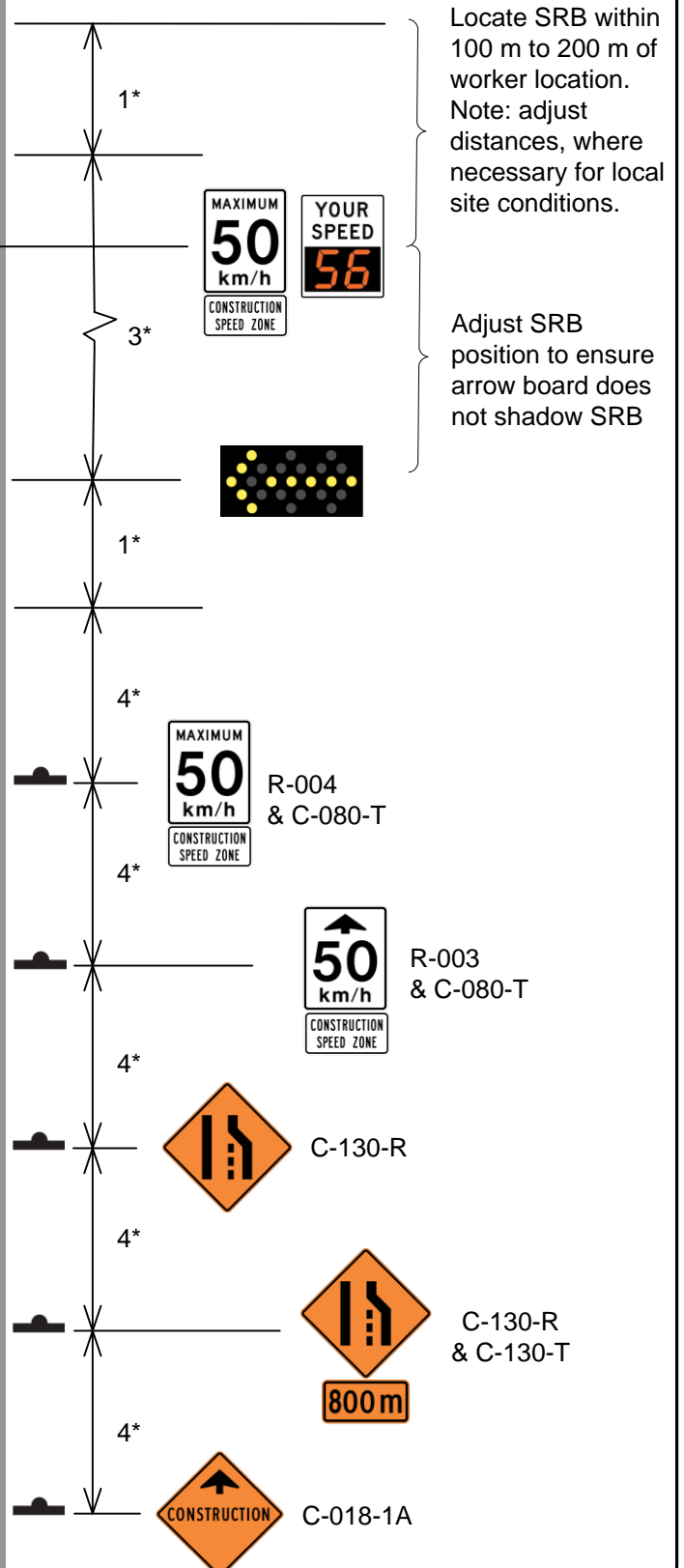
*	Regulatory Speed Limit	80 – 110 km/h
1	Taper length for lane closure	165 m (1:45)
2	Maximum distance between tubular markers for (1)	10 m
3	Minimum tangent distance between tapers	200 m
4	Distance between construction signs	200 m

- ⊙ Tubular marker (Type D)
- Cone – Type A, B, or C

Note: Distances in drawing are compressed for display purposes. SRB may be required for both travel directions.



Worker Location



Locate SRB within 100 m to 200 m of worker location. Note: adjust distances, where necessary for local site conditions.

Adjust SRB position to ensure arrow board does not shadow SRB

Not to scale