

## WORK ZONE BULLETIN #5/2017

### Portable Rumble Strips

**\*\*Portable Rumble Strips are currently a trial device. Project Sponsors may choose to use this device on projects that meet the criteria below. Details outlined in this bulletin may be modified in the future based on the results of the trials.\*\***

#### Summary

This Bulletin is issued to inform consultants, contractors and department staff of the department's practice for the use of portable rumble strips in work zones. Portable rumble strips can be installed and removed from the roadway easily without any anchoring such as adhesives or nails. They provide additional warning cues to motorists through their sound and vibration. Portable rumble strips remind motorists of the need for full attention and caution through the work zone due to the potential for hazards and risks.

#### Key Changes

##### *Type of Project*

Portable rumble strips should be applied for short or long duration projects where motorists are approaching a stop condition, such as one controlled by a flagperson, or where "stop and go" conditions are expected due to vehicle queues. Their use should be limited to stationary projects in rural locations where the highway gazetted speed is 100 or 110 km/h when not under construction. Examples of projects where they might be used include roadway grading, widening or bridge repair.

Rumble strips may not be used on a project if there is concern about noise due to the proximity of residences. Factors to be considered in such a case include distance to the residences, project duration, expected set-up and takedown of the rumble strips and the work zone noise level. Often, rumble strips will not be a significant noise concern compared to the noise generated by construction work activities.

##### *Standard and Placement*

Portable rumble strips are applied perpendicular to the roadway, from the centerline to the near side of the painted shoulder line, on each approach to the work zone. One set of three rumble strips is placed for each approach. A WD-A-106B sign is installed to warn motorists of the rumble strips. Portable rumble strips shall not be applied on sharp horizontal or vertical curves or within intersections.

The attached Drawings TCS-B-4.7A, TCS-B-4.7B, TCS-B-4.7C, and TCS-B-4.7D shall be used as references when incorporating portable rumble strips into a project's traffic control strategy. When a flagperson or portable traffic signal is used to control and direct traffic,

rumble strips shall be placed in advance of them to alert drivers that may not have noticed the approaching traffic control. When rumble strips are applied in high volume or other situations where queue formation and “stop and go” conditions are expected, rumble strips shall be placed well in advance of the work zone, in conjunction with the WD-A-41 sign.

Rumble strip spacing should be varied based on vehicle speed. The spacing between each rumble strip should be 3.0 m for speed limits of 60 km/h or lower, 4.5 m for speed limits between 61 and 90 km/h, and 6.0 m for speed limits higher than 90 km/h. This will ensure that the rumble strips maintain the desirable noise and vibration level.

In some cases, motorists may attempt to bypass the rumble strips by going around on the shoulder. One method to mitigate this issue would be to place delineators on the shoulder to limit the available width. Depending on shoulder width and rumble strip size, another method would be to apply an additional rumble strip across the shoulder.

### *Use*

Portable rumble strips shall be removed when the work zone is no longer active, and there are no hazards present in the travelled way or shoulder.

### **Effective Date**

May 9, 2017

### **Contact**

Elena Yin at (780) 415-4827

Operations, Programming and Planning Branch, Alberta Transportation

### **References**

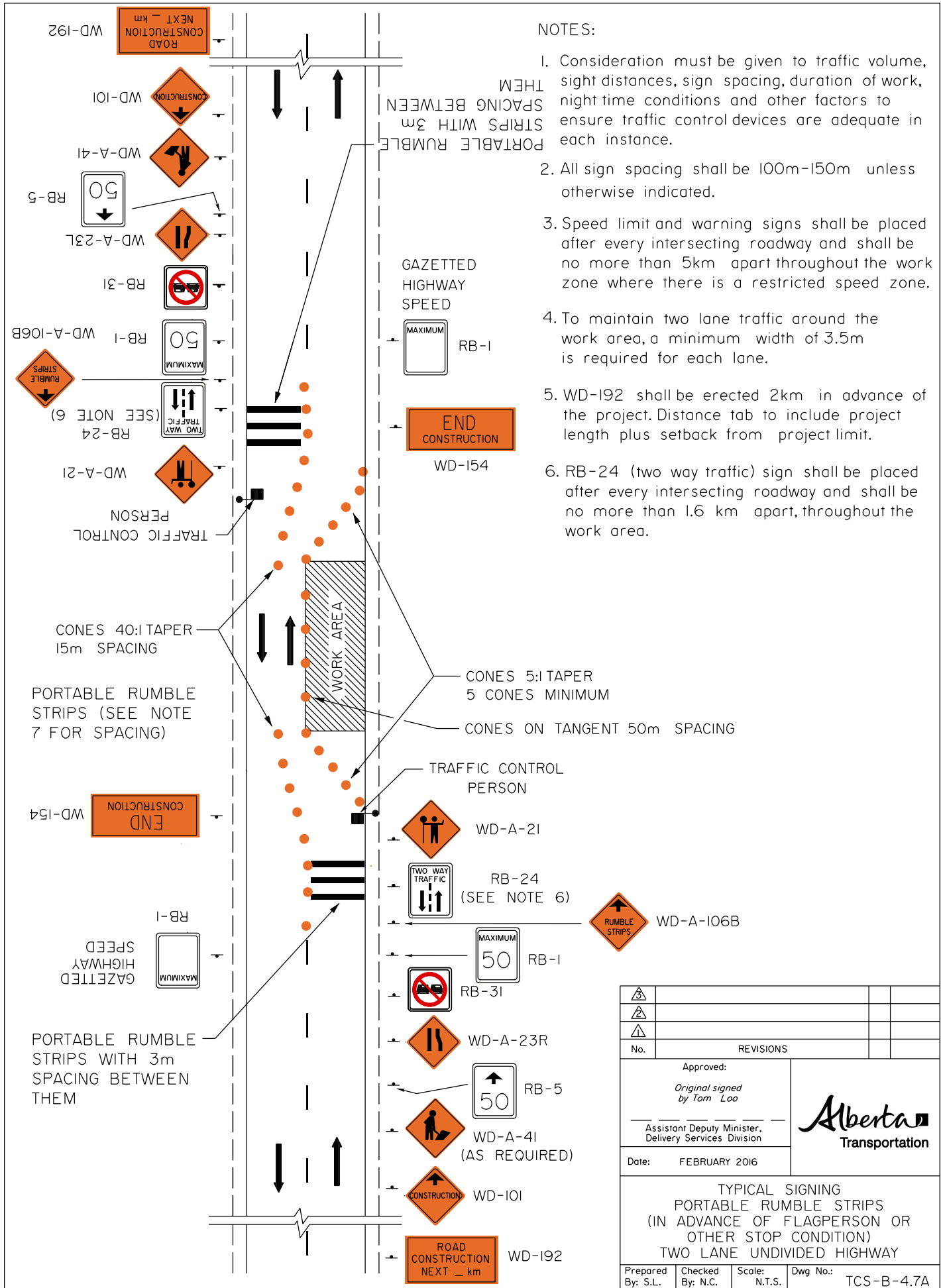
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### **Approved**

*Original signed  
by Tom Loo*

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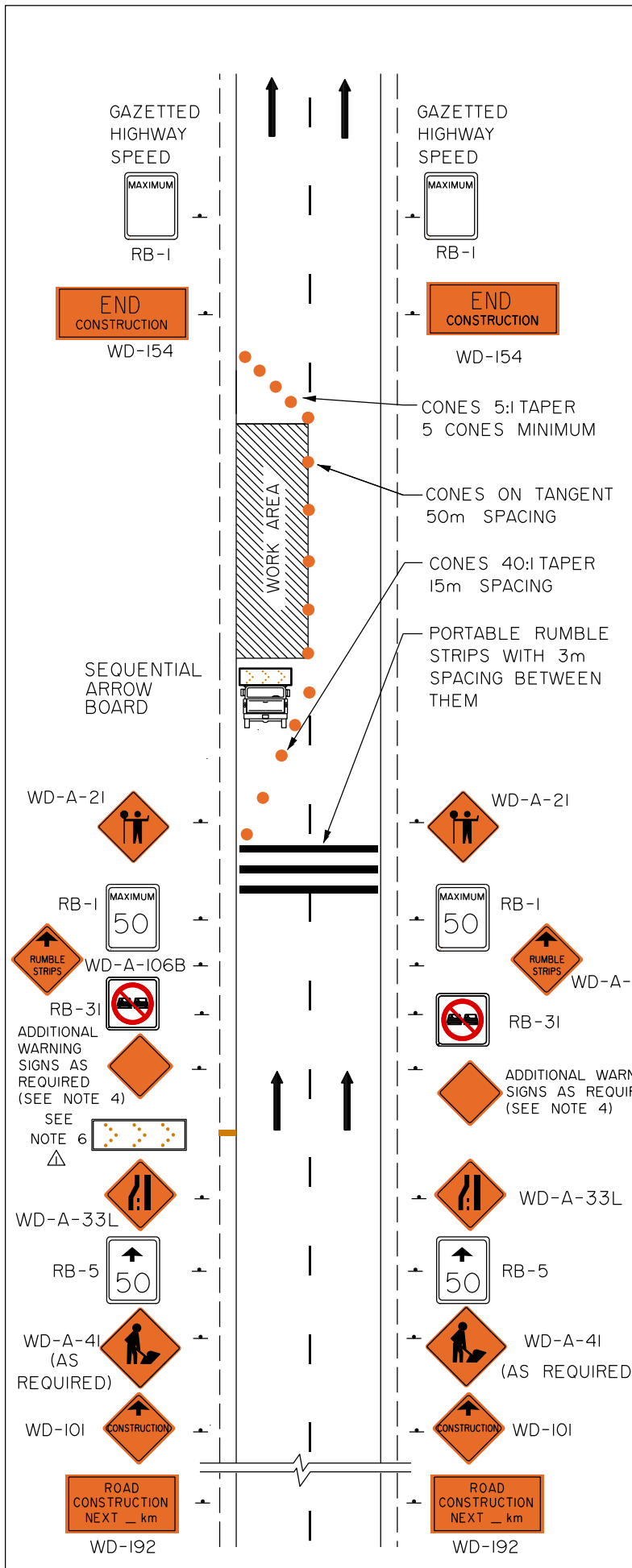
Tom Loo  
Assistant Deputy Minister, Delivery Services Division



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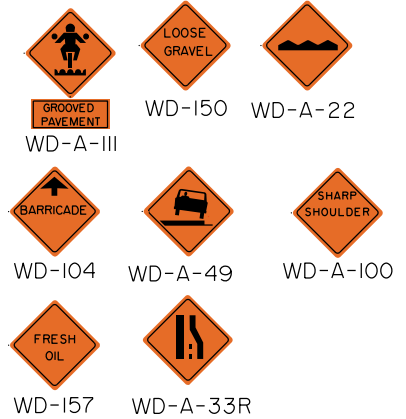
1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, night time conditions and other factors to ensure traffic control devices are adequate in each instance.
2. All sign spacing shall be 100m-150m unless otherwise indicated.
3. Speed limit and warning signs shall be placed after every intersecting roadway and shall be no more than 5km apart throughout the work zone where there is a restricted speed zone.
4. To maintain two lane traffic around the work area, a minimum width of 3.5m is required for each lane.
5. WD-192 shall be erected 2km in advance of the project. Distance tab to include project length plus setback from project limit.
6. RB-24 (two way traffic) sign shall be placed after every intersecting roadway and shall be no more than 1.6 km apart, throughout the work area.

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| Approved:  |                  |                     |                     |
| Original signed by Tom Loo   |                  |                     |                     |
| Assistant Deputy Minister, Delivery Services Division  |                  | Date: FEBRUARY 2016 |                     |
| TYPICAL SIGNING<br>PORTABLE RUMBLE STRIPS<br>(IN ADVANCE OF FLAGPERSON OR<br>OTHER STOP CONDITION)<br>TWO LANE UNDIVIDED HIGHWAY |                  |                     |                     |
| Prepared By: S.L.  | Checked By: N.C. | Scale: N.T.S.       | Dwg No.: TCS-B-4.7A |



**NOTES:**

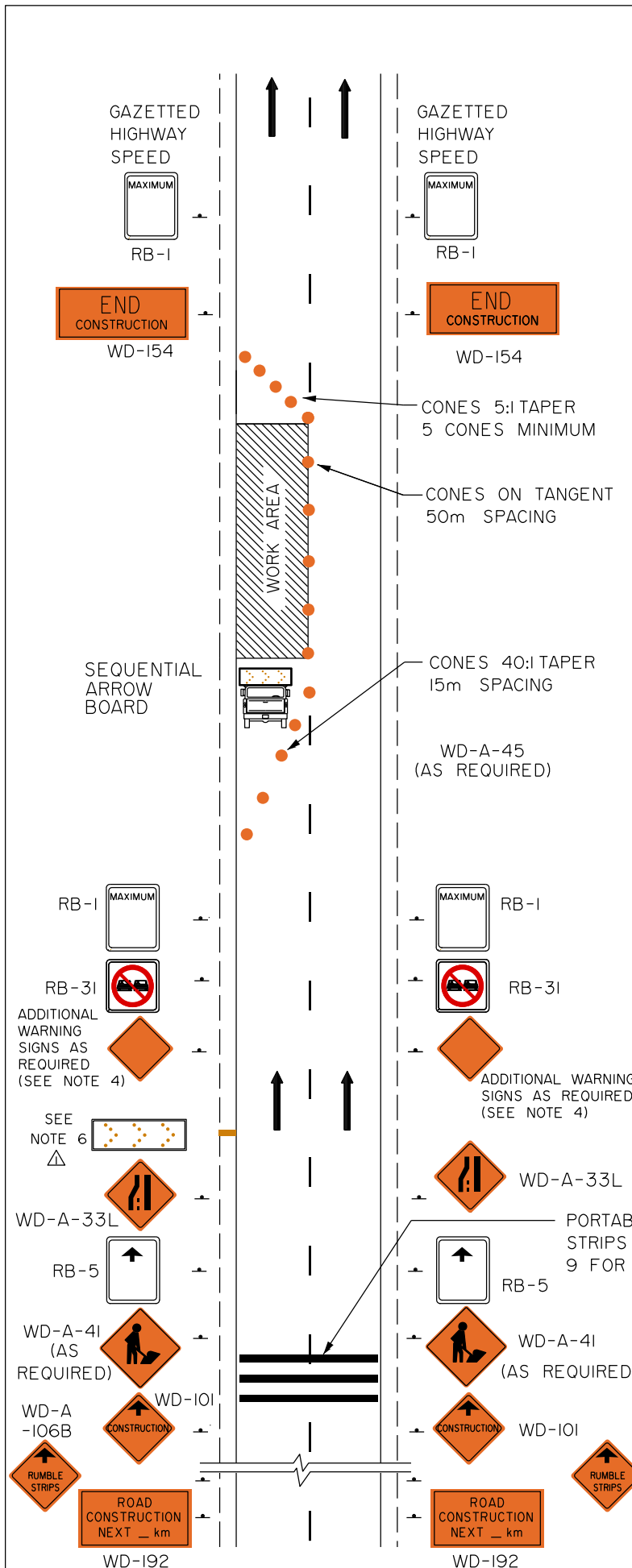
1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, night time conditions and other factors to ensure traffic control devices are adequate in each instance.
2. All sign spacing shall be 100m-150m unless otherwise indicated.
3. Speed limit and warning signs shall be placed after every intersecting roadway and shall be no more than 5km apart throughout the work zone where there is a restricted speed zone.
4. Examples of additional warning signs that may be required in conjunction with this plan are:



5. Other hazard signs as shown in the schedule of signs may be used as required.
6. The Sequential Arrow Board shall be located in the centre of the closed lane. An additional Sequential Arrow Board is required when traffic volume exceeds 10000 vehicles per day (ASDT) or when sight distance is restricted.
7. WD-I92 shall be erected 2km in advance of the project. Distance tab to include project length plus setback from project limit.
8. For mobile operation, cones may not be required.

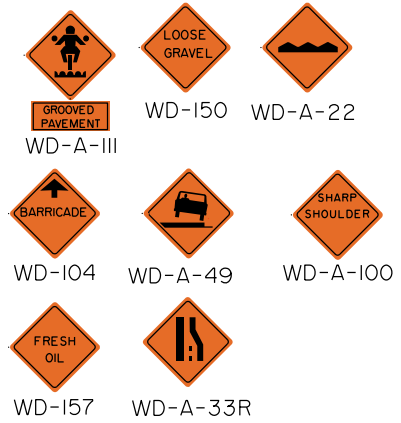
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| Approved:<br><i>Original signed by Tom Loo</i>   |                  |               |                     |
| Assistant Deputy Minister,<br>Delivery Services Division   |                  |               |                     |
| Date:  | FEBRUARY 2016    |               |                     |
| <b>TYPICAL SIGNING<br/>PORTABLE RUMBLE STRIPS<br/>(IN ADVANCE OF FLAGPERSON OR<br/>OTHER STOP CONDITION)<br/>FOUR LANE DIVIDED HIGHWAY</b> |                  |               |                     |
| Prepared By: S.L.  | Checked By: N.C. | Scale: N.T.S. | Dwg No.: TCS-B-4.7B |





**NOTES:**

1. Consideration must be given to traffic volume, sight distances, sign spacing, duration of work, night time conditions and other factors to ensure traffic control devices are adequate in each instance.
2. All sign spacing shall be 100m-150m unless otherwise indicated.
3. Speed limit and warning signs shall be placed after every intersecting roadway and shall be no more than 5km apart throughout the work zone where there is a restricted speed zone.
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6. The Sequential Arrow Board shall be located in the centre of the closed lane. An additional Sequential Arrow Board is required when traffic volume exceeds 10000 vehicles per day (ASDT) or when sight distance is restricted.
7. WD-I92 shall be erected 2km in advance of the project. Distance tab to include project length plus setback from project limit.
8. For mobile operation, cones may not be required.
9. Spacing between strips is 3.0 m for speed limits of 60 km/h or lower, 4.5 m for speed limits between 61 km/h and 90 km/h and 6.0 m for speed limits higher than 90 km/h.

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| Original signed by Tom Loo  |                  |               |                     |
| Assistant Deputy Minister, Delivery Services Division   |                  |               |                     |
| Date:   | FEBRUARY 2016    |               |                     |
| <b>TYPICAL SIGNING<br/>PORTABLE RUMBLE STRIPS<br/>(IN ADVANCE OF "STOP AND GO"<br/>TRAFFIC CONDITION)<br/>FOUR LANE DIVIDED HIGHWAY</b> |                  |               |                     |
| Prepared By: S.L.   | Checked By: N.C. | Scale: N.T.S. | Dwg No.: TCS-B-4.7D |