

on various regulatory sign types, with effective dates, are set out in Book 5, as part of the description for each sign. (See Book 1b for further background on retroreflective sheeting and illumination.)

1.5 Location

Regulatory signs shall normally be located in accordance with Section 12 (Sign Position) of Book 1b. However, specific or additional requirements for certain regulatory signs may pre-empt or revise directions or specifications prescribed under the general standards in Book 1b. **Such deviations or exceptions from the Book 1b location principles are noted in this Book under the heading “Location Criteria” for the respective signs to which they apply. If for a given sign, exceptions are not noted under this heading, the Book 1b location principles apply.**

1.6 Supplementary Flashing Beacons

Red or amber flashing beacons may sometimes be required to draw the driver's attention to the presence of a regulatory sign, (e.g., a STOP or YIELD sign, a KEEP RIGHT or SCHOOL ZONE MAXIMUM SPEED WHEN FLASHING sign), particularly when visibility distance is reduced due to severe roadway geometry, or other circumstances are present which suggest that greater emphasis is required.

The use of flashing beacons should be restricted to only critical situations, in order to ensure that their impact is not lost due to overuse or to ensure that they do not become a distraction to the driver. A red flashing beacon is only used in conjunction with a STOP sign.

Further information on the correct use of flashing beacons may be found in OTM Book 12 (Traffic Signals) in the section entitled “Flashing Beacon Signals.”

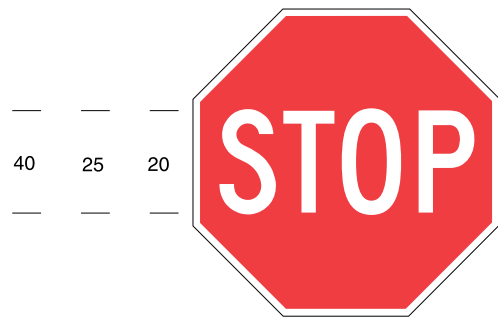
1.7 Dynamic Sign Technologies

Recent advances in technology have resulted in the capability to display messages to the driver through the use of dynamic or variable display signs. In general, these signs are not appropriate for use in displaying regulatory type messages, as it is difficult to ensure a consistent and reliable display, in accordance with the text and graphics requirements of the Regulations or by-laws. At the present time, no provision is made in the Regulations for displaying such messages as variable speed limits.

Certain specific applications of dynamic sign technologies are permitted in the HTA (see Highway Traffic Act, Regulation 615, Section 49). Where regulations such as turn restrictions or lane designations take effect only during specific hours, it may be desirable under some circumstances to install dynamic signs which may be changed to show a different display at different times of day or days of the week. Typically, such signs employ a dot or disc matrix construction (fibre optic or light emitting diode) or louvers or shutters to modify the display. Where such signs are employed, they are required to be legible to drivers only during the prescribed hours of operation and to comply as nearly as practicable with the prescribed design and dimensions.

A full discussion of the design and application of dynamic signs may be found in OTM Book 10 (Changeable Message Signs). Further information on the application of such signs within an automated traffic management or control system may be found in OTM Book 19 (Advanced Traffic Management Systems).

2. STOP Sign



Ra-1	60 cm x 60 cm
Ra-101	75 cm x 75 cm
Ra-1101	120 cm x 120 cm
Font	Highway Gothic C
Colour	Legend & Border – White Reflective Background – Red Reflective

ALL-WAY Tab Sign



Ra-1t	15 cm x 30 cm
Font	Helvetica Bold Condensed
Colour	Legend & Border – Red Reflective Background – White Reflective

Purpose and Background

Where no traffic control device is present at an intersection of two roadways, the basic rules of the road apply. The Highway Traffic Act assigns priority to vehicles already within the intersection or, in the event two or more vehicles are approaching the intersection at approximately the same time, the Act requires the driver on the left to yield to the vehicle

on the right. A number of traffic control devices are available to assist in the allocation of right-of-way between vehicles in an intersection, increasing in level of control from a YIELD sign to a STOP sign up to full traffic signal control.

The purpose of the STOP sign is to clearly assign right-of-way between vehicles approaching an intersection from different directions when traffic signals are not warranted or not yet installed and it has been determined that a YIELD sign is inadequate. The STOP sign requires the driver to stop the vehicle before entering the intersection, yield to any traffic in or approaching the intersection and then proceed when safe to do so.

The introduction of STOP sign control can reduce the frequency of certain types of collision (e.g. right-angle or turning), but also results in delay to motorists and may increase some other types of collision (e.g., rear-end). STOP signs should, therefore, not be used indiscriminately.

STOP signs must not be used on the same approach to an intersection where traffic control signals are operating, as the conflicting commands of two types of control devices would be confusing.

Portable or part-time STOP signs must not be used except in emergency or temporary situations, such as in conjunction with Traffic Control Persons or at intersections where traffic signals are inoperative.

STOP signs are not intended to be used as speed control devices. Their usage should be limited to the control of right-of-way conflicts.

In general, STOP signs should only be used where traffic engineering studies considering such factors as traffic speeds, traffic volumes, restricted sight lines and collision experience, indicate that the use of STOP signs is warranted.

Sign Types

The **standard size STOP sign (Ra-1)**, is the minimum size permitted, and may generally be used where the posted speed is 60 km/h or less.

The **oversize STOP sign (Ra-101)** should be used where the posted speed is 70 km/h or greater. This sign may also be installed at lower speed locations where the prevailing traffic conditions warrant greater visibility or emphasis, for example in complex visual environments where many signs and other devices compete for driver attention or at high traffic volume locations where drivers must concentrate more on the driving task.

Specific situations where the **oversize STOP sign (Ra-101)** must be used include:

- At the junction of two King's Highways in rural areas;
- At the junction of any public road with a King's Highway in rural areas;
- At the junction of two major County or Regional roads; or
- At freeway exit ramp terminals not controlled by traffic signals.

The **special oversize STOP sign (Ra-1101)** may be used in locations where two relatively major roads (e.g., King's Highway, Regional or County Roads) intersect, particularly in high speed rural locations where such an intersection may be unexpected, and at other locations where special emphasis is required.

In addition to the STOP sign, there are a number of other supplementary traffic control devices which may be considered, to provide added emphasis in selected circumstances.

On paved roads, the STOP sign may be supplemented with a **stop line**. For information on appropriate pavement markings, reference should be made to Book 11 (Markings and Delineation).

Where the presiding road authority has determined that an all-way stop (see below) is required, the STOP signs should be supplemented with an **ALL-WAY tab sign (Ra-1t)** directly below the STOP sign. The use of the TWO-WAY tab sign found in earlier editions of the MUTCD is not recommended, as it is ambiguous and could lead to confusion. Consistency and uniformity throughout Ontario in this practice will help distinguish all-way stop situations from conventional stop control, and facilitate driver understanding of what is required in each case.

Where necessary for increased emphasis, a supplementary **red flashing beacon** may be used to reinforce a STOP sign. Such flashing beacons may be installed overhead, within the intersection proper, or mounted directly above the STOP sign itself. For information regarding flashing beacons, refer to Book 12 (Traffic Signals).

In cases of restricted visibility or other special conditions affecting the STOP sign, a **STOP AHEAD sign (Wb-1)** may be required or recommended. For information regarding STOP AHEAD signs, refer to Book 6 (Warning Signs), Section 6.

Guidelines for Use

Stop Control

Where traffic signals are not warranted or installed, or are warranted but have not yet been installed, STOP signs should be considered as follows:

STOP signs must be used:

- At the intersection of two King's Highways; and

- At the intersection of a County or Regional road with a King's Highway in a rural area.

The use of STOP signs should be considered:

- At the intersection of a County or Regional road with a King's Highway in a built-up area;
- At the intersection of a city street or township road with a King's Highway;
- At the intersection of a minor street or road with a through street or highway;
- At unsignalized intersections in a signalized area, except where they would interfere with traffic signal progression;
- At intersections where the application of the normal right hand rule or yield control would be unduly hazardous; and
- At intersections which have experienced a record of collisions of the type which are susceptible to correction by STOP control (see stop collision warrant below).

Stop Collision Warrant

STOP sign control may be warranted where three or more right angle or turning collisions per year have occurred over a period of three years and methods of reducing the collision experience, such as sight line improvements, street lighting, parking prohibitions, enforcement, geometric revisions, or YIELD sign controls, have been tried or considered, and found to be inadequate.

All-way Stop Controls

In some circumstances, it may be appropriate to install STOP signs on all approaches to an intersection. This results in an all-way stop condition. All-way STOP sign controls disrupt the flow of traffic

and introduce delays to all drivers within the intersection and should only be considered at the intersection of two relatively equal roadways having similar traffic volume demand and operating characteristics (see minimum volume warrants below). The approaches should be directly opposing (i.e., not offset), should preferably approach at right angles (i.e., no skewed approaches) and have an equal number of lanes.

All-way stop controls should be considered only under the following situations:

- As an interim measure, where traffic control signals are warranted but cannot be implemented immediately. For information on traffic signal control, refer to Book 12 (Traffic Signals);
- At locations having a high collision frequency where less restrictive measures have been tried and found inadequate (see all-way stop collision warrant below); or
- As a means of providing a transition period to accustom drivers to a change in intersection right-of-way control from one direction to another. Installation under this warrant must be in conformance with the Amendment of Intersection Control, discussed under Special Considerations at the end of Section 2.

All-way Stop Minimum Volume Warrant (Arterial and Major Roads)

All-way stop control may be considered on major roads where the following conditions are met:

- The total vehicle volume on all intersection approaches exceeds 500 vehicles per hour for each of any eight hours of the day;

- The combined vehicular and pedestrian volume on the minor street exceeds 200 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same eight hours, with an average delay to traffic on the minor street (either vehicles or pedestrians wishing to enter the intersection) of greater than 30 seconds; and
- The volume split does not exceed 70/30. Volume on the major street is defined as vehicles only. Volume on the minor street includes all vehicles plus any pedestrians wishing to cross the major roadway.

*All-way Stop Minimum
Volume Warrant (Minor Roads)*

All-way stop control may be considered on minor roads where the following conditions are met:

- Total vehicle volume on all intersection approaches exceeds 350 for the highest hour recorded; and
- Volume split does not exceed 75/25 for three-way control or 65/35 for four-way control. Volume is defined as vehicles only.

All-way Stop Collision Warrant

For the purposes of this warrant, a high accident frequency is an average of four collisions per year over a three-year period. Only those accidents susceptible to relief through multi-way stop control must be considered (i.e., right angle and turning type collisions).

Included in this warrant are those locations where visibility problems exist which limit the safe approach speed to less than 15 km/h, thereby creating an unreasonable accident potential. Special advance warning or overhead flashing lights may be necessary to augment the control if vertical or horizontal alignment is a factor.

Inappropriate Use of All-way Stop Control

All-way stop controls should *not* be used under the following conditions:

- Where the protection of pedestrians, school children in particular, is a prime concern. This concern can usually be addressed by other means;
- As a speed control device;
- On roads where progressive signal timing exists;
- On roads within urban areas having a posted speed limit in excess of 60 km/h;
- At intersections that are not roundabouts having less than three, or more than four, approaches;
- At intersections that are offset, poorly defined or geometrically substandard;
- On truck or bus routes, except in an industrial area or where two such routes cross;
- On multi-lane approaches where a parked or stopped vehicle on the right will obscure the STOP sign;
- Where traffic would be required to stop on grades;
- As a means of deterring the movement of through traffic in a residential area;