

Barriers are required in most situations, with more robust containment required for patios occupying a curb lane (as opposed to a parking lane), for one-way roads with multiple lanes and roads posted 60 km/h.

**Table 1 – Patios Occupying Parking Lane (Roadside Protection Requirements)**

Characteristics	Typical Layout	Attenuators and Cushions	Barriers
Two-way two-lane road; 50 km/h or less	Options 1A and 1B	No requirement	TL-1 MASH tested
One-way two-lane road; 50 km/h or less	Options 2A and 2B	No requirement	2A – No barrier required 2B – Any type of barrier required.

**Table 2 – Patios Occupying Curb Lane (Roadside Protection Requirements)**

Characteristics	Typical Layout	Attenuators and Cushions	Barriers
One-way two-lane road; 50 km/h or less	Options 3A and 3B	No requirement	TL-1 MASH tested
Two-way multi-lane road; 50 km/h or less	Options 4A and 4B	No requirement	TL-1 MASH tested
Higher risk road (One-way multi-lane road with patio in curb lane or road posted 60 km/h)	Options 5A and 5B	TL-2 MASH tested	Concrete barrier wall









As noted earlier, **Appendix A** contains a set of typical layouts for patios in accordance with *Ontario Traffic Manual 7: Temporary Conditions*. All of the patio layouts are designed to meet or exceed these guidelines and are based on layouts presented in the manual with minor alterations. The leading edge of the barriers is to be placed on an angle 25 – 45 degrees to protect patrons and restaurant employees from a lateral impact.

The following layouts are presented:

**50 km/h speed zone**

- Option 1A – Two-lane two-way road with patio in parking lane
- Option 1B – Two-lane two-way road with patio in parking lane; pedestrians diverted onto roadway
- Option 2A – One-way road with patio in parking lane

## Legend of Symbols used in the Typical Layouts

Legend	
Symbol	Description
	Traffic Control Devices - TC-54, TC51C or Flexible Delineator Posts
	Sign
	Barrier - MASH Test TL-1
	Barrier - MASH Test TL-2
	Barrier - Not Tested
	Attenuator/Crash Cushion
	Business Front
	Patio Area

## Option 1B

## Parking Lane Closed

Parking-Lane

Thru-Lane

Sidewalk Diversion

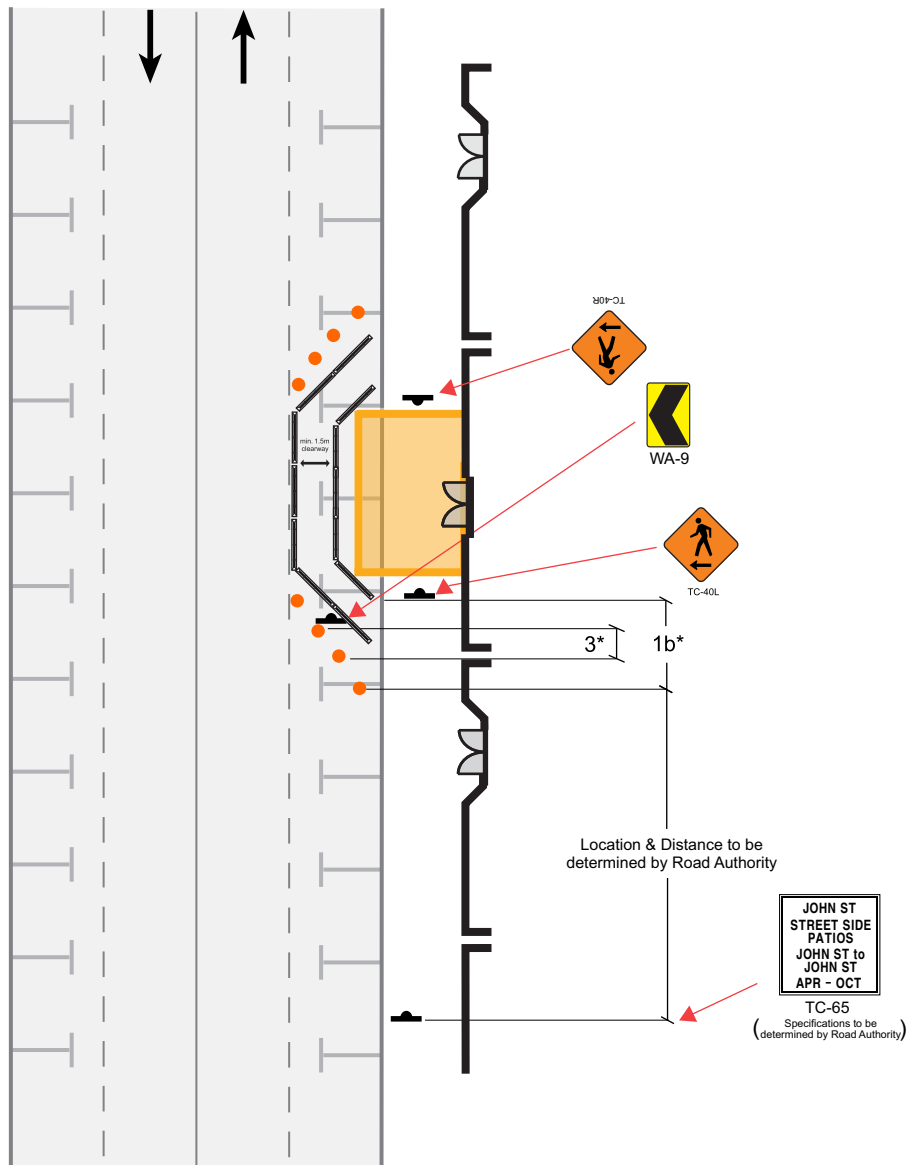
No Sidewalk Diversion

Single Lane - One Way

Single Lane - 2 Direction

Multi-Lane

High Risk








\* Refer to OTM Book 7, Table B


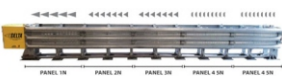

## NOTES

- i) Barriers to be placed between 25-45 degrees upstream of patio to protect from lateral impact
- ii) Barriers installed to have minimum requirement of MASH test level TL-1 (or equivalent)
- ii) Temporary sidewalk to meet or exceed AODA requirements




**Delimiters No Mash Testing**

	<p>The retractable bar is made of durable ABS plastic and wrapped in reflective sheeting for night-time visibility. Each end of the retractable bar has a rugged 3.25" loop that easily drops over any traffic cones or delineator posts. The bar comes in 2 telescoping lengths: 4' to 6½' and 5' to 10½'</p>
	<p>The stem of the Grabber-Tubes are made of flexible yet durable fluorescent low density polyethylene material, with UV inhibitors to minimize fading. The recessed areas on the stem protect the reflective bands, minimizing rips and scratches. The extra large flange at the bottom of the stem allows the rubber base to hold it firmly in place.</p>
	<p>Commercial duty, sturdy rolling planter cafe Barrier. Nicely finished to both sight and touch. Planter are lined for durability and many, many-years of plant growth. The product comes with original wood grain. It is ready for customizing color with spray paint or stain. Wood has been treated for outdoor use.</p>
	<p>TC-54 Premium Traffic Barrel with Handle Used in conjunction with standard Tire Base and 25 lb Rubber Octagon Base</p>
	<p>The Crowdcade Barricade is a 6' long multi-functional barricade system that is easy to set up and store. This device features heavy-duty rubber feet that rotate and lock for stacking purposes. The Crowdcade Barricade comes with holes on one side for mounting signs 24"W x 18"H and can be used wherever crowd control, pathways, and blockades are needed.</p>



**Water filled sled/ Sand attenuators (TL3 Mash Tested)**

	<p>The Big Sandy Attenuator/Crash Cushion Sand Barrel is MASH Tested, Passed and Eligible, and meet the crash worthy requirements of NCHRP 350. Big Sandy Sand Barrels go above and beyond these requirement to provide the best in highway safety.</p>
	<p>The Delta Crash Cushion consists of a series of steel thrie-beam fender panels supported by steel diaphragms. It attenuates energy evenly for all vehicle types with shear bolts tearing through cut-outs of various sizes and shapes. Quick and easy installation reduces exposure to traffic. Multi-directional object marker comes in Chevron, Left or Right angles, and can be quickly changed in the field.</p>
	<p>The Sentry Longitudinal Energy Dissipater (SLED) is a narrow, water-filled non-redirective gating crash cushion that is a MASH Tested, Passed, and Eligible.TL1 / TL2 / TL3</p>

**Mash Containment Level TL2 products**

	<p>The SLED Mini is MASH Tested and Passed for Uni- and Bi-Directional applications as well as TL-2 End Treatment for the TraFFix Water-Cable Barrier™ or Concrete Median Barrier</p>
	<p>The Lo-Ro Water-Cable Barrier is intended for applications where low deflection of barrier walls is desired. The durable design of the Lo-Ro Water-Cable Barrier's interlocking knuckles minimize rotation between modules to ensure maximum stability, while also having the lowest deflection of any MASH TL-2 Water-Filled Barrier at 11' 9½" (3.6m). Each Lo-Ro module has three galvanized steel cables that minimize vehicle penetration into the work zone, has a low profile height of only 36" to provide increased visibility for motorists in urban areas, and molded-in stacking lugs for</p>
	<p>The Water-Wall Barrier is an economic and easy to install crash barrier system. The Water-Wall Barrier is a durable side protective temporary crash barrier system that can be used in many situations; from protecting the public surrounding a construction site, to work-zone safety on roads and highways.</p>

**Mash Containment Level TL1 products**

	<p>The Urban Barrier is a unique product that provides a straightforward, robust interlinking of barrier units with the help of its coupling arrangement – reducing the working width when compared to traditional construction barriers. This in turn provides more space for pedestrians and cyclists to pass the work site. The Urban Barrier is an ideal solution for work zones, bike lines, restaurant patios, and more!</p>
	<p>The Water-Cable Barrier is designed with three (3) molded in galvanized steel cables that strengthen the water-cable barrier to resist vehicle penetration during an impact. The hinges are designed to allow a 30° pivot between sections and each hinge features a double wall knuckle design that greatly minimizes breakage. Each wall includes one (1) galvanized steel T-pin to securely link Water-Cable Barrier sections together.</p>

## 7 Accessibility

It is important to consider accessibility when designing all aspects of the patio area as noted in the sections below.

### 7.1 Accessible Routes

Accessible routes must be provided through the patio area, as follows:

- 1) The pedestrian clearway requires 1.8 metres of space on most sidewalks, with wider sidewalks with higher pedestrian volumes requiring 2.5 metres.
- 2) To ensure the patio area does not impose a change in the direction of the pedestrian clearway of more than 20 degrees, the patio operator should use a tape measure and something to mark measurement points (pylons, chalk marks, etc.) to verify that this requirement is being adhered to:
- 3) The patio operator must provide accessible access to the patio with a minimum width of 1.8 metres.
- 4) Accessible access can be achieved through two methods, installation of a temporary platform or a temporary accessibility ramp<sup>10</sup>. It is the patio operator's responsibility to comply with the Accessibility for Ontarians with Disabilities Act (AODA) at all times.
- 5) The patio operator:
  - i) Must not place patio materials in the pedestrian clearway.
  - ii) Must ensure the patio's delineation has a solid base that is detectable for someone using a white cane.
  - iii) Must not use the pedestrian clearway to queue patrons awaiting their reservation or table.
  - iv) Must not place A-frame signs or other obstacles in the pedestrian clearway.
  - v) Must not lay electrical wires for any appliances (e.g. heaters, lights) across the pedestrian clearway.

### 7.2 Accessible Ramps

Ramps are to be used where a sidewalk and patio are separated by a curb. For a curb that is under 200 millimetres, the following must apply:

- 1) The slope of the ramp must be less than 1:10.
- 2) The ramp must be at least 1.8 metres wide, exclusive of flared sides.

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<sup>10</sup> Temporary platforms or decks are placed in the curb lane to provide a raised, step-free sidewalk-level walking and seating surface for patio patrons must conform to the Ontario Building Code and the Accessibility of Ontarians with Disabilities Act (AODA).

- 3) The ramp must be stable so that it does not shift or move when used
- 4) The ramp must have a surface including flared sides that:
  - i) Is slip-resistant
  - ii) Is visible at night
  - iii) Has a detectable warning surface with colour (peel and stick)
  - iv) Has the texture that is contrasted with the adjacent surfaces (tape at top and bottom)
  - v) Has a smooth transition, less than 6 millimetres, from the ramp and adjacent surfaces
- 5) There must be space at the bottom of the ramp for someone using a mobility device to turn and navigate into the patio area.
- 6) Do not affix the temporary ramp to the sidewalk, curb edge, or road with screws, bolts, or other materials.
- 7) As shown below in Figure 10, rubber ramps are recommended over asphalt ramps, as rubber ramps can be easily reallocated when the furniture setup needs to be reconfigured.

A building permit might be required for ramps over 200mm.



Figure 10 – Rubber ramp