

Strathcona County

# Right-of-Way Construction Activity Manual



Further information:  
Transportation and Agriculture Services  
780-417-7100  
[www.strathcona.ca/rowcap](http://www.strathcona.ca/rowcap)

# Corporate Authorization



This manual entitled the **Strathcona County Right-of-Way Construction Activity Manual** was prepared by Strathcona County under authorization and exclusive use of Strathcona County.

The designs and recommendations put forward reflect Strathcona County's best judgement with the information available. Any use of this information in a manner not intended or with the knowledge that situations have changed shall not be the responsibility of Strathcona County.



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## Chapter 1 - Introduction

### 1.1. Purpose

The purpose of this manual is to set out standards and specifications for Right-Of- Way Construction Activity Permits (ROWCAP), and guidelines for temporary traffic control associated with on street activities. This ensures:

1. The safety of employees at the worksite.
2. The safety of motorists and pedestrians within the traffic control zone.
3. The protection of equipment used at the worksite.
4. Minimizing traffic disruption around the worksite.
5. On street activities are coordinated and tracked through a permitting system

### 1.2 Scope

This manual is intended as a working reference to be used by private contractors, consultants, utility companies and Strathcona County personnel. This manual identifies requirements for applying for a ROWCAP and implementing temporary traffic control (TTC) for on street construction, maintenance and operational activities.

Safety standards included in the Occupational Health and Safety Act, Manual of Uniform Traffic Control Devices of Canada (Transportation Association of Canada), the Traffic Safety Act, The Alberta Building Code, Safety Codes Act, associated regulations, applicable Bylaws and related contract documents are not referenced in this manual but shall apply to ROWCAP requirements.

### 1.3 Authority

The Transportation and Agriculture Services department is the contact department to obtain a ROWCAP, submit traffic control plans, coordinate temporary traffic control, and set the extent of traffic disruption allowed on County-owned rights-of-way. This authority is granted through the Strathcona County Traffic Bylaw. As such, Transportation and Agriculture Services (780-417-7100) must be notified before commencing work on, or adjacent to, all County-owned rights-of-way.

All work performed on County-owned rights-of-way shall conform to the policies, standards and procedures set out by Strathcona County including this ROWCAP Manual. Application of the manual, associated traffic control plans and the compliance to the Occupational Health and Safety Act, Traffic Safety Act and other applicable legislation is the obligation of the contractor, utility company or business unit conducting the activities.

## 1.4 Contact Information

### Emergency (Police, Fire, Ambulance) - 9-1-1

Strathcona County, Transportation and Agriculture Services – 780-417-7100

- County Fibre Optic Locates
- Traffic Signal and Streetlight Underground Locates

Strathcona County, RCMP Non–Emergency line - 780-467-7741

Strathcona County, Enforcement services (Bylaw) - 780-449-0170

Strathcona County, Capital Planning & Construction– 780-464-8279

Strathcona County, Planning and Development – 780-464-8080

Strathcona County, Transit – 780-417-7187

Strathcona County, Utilities – 780-467-7785

Strathcona County, General Inquiries – 780-464-8111

Fortis, Power – 780-310-WIRE (9473)

Alberta One Call - 1-800-242-3447 or [www.alberta1call.com](http://www.alberta1call.com)

Alberta Transportation - 780-963-5711

Shaw Cable – Facility Location Services – 1-800-242-3447 or  
toll free 1-866-DigShaw (344-7429)

Canadian National Railway – 1-800-665-5662

Canadian Pacific Railway – 1-403-319-3587 or Railway Emergency – 1-800-716-9132

Transportation of Dangerous Goods, Alberta Transportation – 1 800-272-9600  
(Edmonton Area 780-422-9600)

## Chapter 2 - Before You Work On Strathcona County Right-of-Way

### 2.1 Required Permits/Authorization/ROWCAP

All work on County-owned rights-of-way requires authorization. An application for a ROWCAP may be required. For information on ROWCAP and permit application, contact Transportation and Agriculture Services at (780) 417-7100 or visit <http://www.strathcona.ca/ROWCAP>

Work that requires temporary traffic control must have a ROWCAP and a Temporary Traffic Control Plan. Temporary Traffic Control plans must be submitted at least five (5) days prior to the start date of the planned activity. This is to determine the affect the planned work may have on other planned right of way activities, solid waste collection, Transit routes, Emergency Services, Enforcement Services and other public and private entities.

As part of Strathcona County's Traffic Bylaw (Section 7), all construction activity work zones must retain and produce upon request an approved ROWCAP. Failure to obtain an approved ROWCAP is a fineable offence as per Schedule "K" of Strathcona County`s Traffic Bylaw. The fines are outlined below;

Failure to obtain a ROWCAP	
(i) first offence	\$ 200.00
(ii) second offence	\$ 500.00
(iii) third and subsequent offences	\$ 1000.00
Failure to comply with any provision of the ROWCAP	\$ 200.00
Failure to produce a ROWCAP when requested	\$ 200.00

### 2.2 ROWCAP Requirements

Right Of Way Construction Activity Permits (ROWCAP) are required for the following:

- All work that involves excavation of roadways, sidewalks, or boulevards
- Work or activities on or directly adjacent Arterial or Collector Roadways
- Work or activities involving bridges, rail road crossings or river crossings
- Any activities interfering with traffic flows during peak hours (06:00 – 09:00 and 15:30 – 18:00 Monday to Friday excluding holidays)
- Any work or activity on road right-of-way that lasts longer than 4 hours at a single location
- Work that adversely affects public transit; bus stops, bus routes, transit timing or work near any major bus station
- A total closure of any roadway
- Special events that affect traffic flow
- At the discretion of Transportation and Agriculture Services

All work requires prior approval before applying for a ROWCAP which includes but is not limited to obtaining development permits, ULA (utility line assignment), open cuts and road use agreements

## **2.3 Temporary Traffic Control Personnel / Field Application / Flag persons**

It is recommended that persons designing or implementing Temporary Traffic Control (TTC) plans, and any Temporary Traffic Control Personnel (TTCP or Flag person) should be accredited by an appropriate agency. Accreditation will assist all parties involved in understanding and implementing temporary traffic control practices and procedures for construction worksites in the Province of Alberta. For information regarding the Alberta Temporary Traffic Control Course, implementation course or flag person training, please contact the Alberta Construction Safety Association at (1-800-661-2272) or <http://www.acsa-safety.org>.

## **2.4 Apparel / Personal Protective Equipment**

High visibility clothing must be worn by workers in temporary traffic control work zones and must meet the standards set by the Canadian Standards Association, Z96-02, High Visibility Safety Apparel (CSA). [To contact the CSA, visit http://www.csa.ca](http://www.csa.ca)

Personal Protective equipment is required on any construction site and is governed by Occupational Health and Safety Regulations and the OHS Act. Further information can be found at: <http://work.alberta.ca/occupational-health-safety.html>



## Chapter 3 - Performance Guidelines

### 3.1 Installation and Maintenance

#### 3.1.1 Installation

All devices shall be placed in a manner so as not to interfere with existing traffic control devices. It is important to survey the site before preparing a Temporary Traffic Control Plan. This ensures any conflicting signs are covered or removed. i.e. if a speed reduction is required, the posted signs shall be covered or removed OR work in the proximity of a signalized intersection may require signal timing revision based on the circumstances.

#### 3.1.2 Maintenance

It is important to maintain all temporary traffic control devices. This includes, but is not limited to:

- Cleaning all signs and devices.
- Ensuring all signs and devices are located, as per plan.
- Ensuring all signs and devices are secured for adverse conditions and remain operational.
- Cleanliness and operation of flashing lights for night use.

### 3.2 Types of Work

#### 3.2.1 Mobile

Mobile operations are those that are typically performed from inside a vehicle on the move at low speed and may require periodic stopping for only a few minutes. Due to the continuous mobile nature of these operations, static advanced signing may not be feasible. During mobile operations vehicles performing the work must have mounted reflectorized signs and lights. They must provide adequate warning for motorists and pedestrians and direct traffic flow safely. It may be necessary to provide additional vehicles with vehicle mounted arrow boards to direct traffic flow, if the working equipment does not have adequate lighting. Mobile operations may effectively close the lane due to their activity, but this is only permitted if there is an additional lane for traffic to utilize. Otherwise a two way flagging operation may be required.

Operations of mobile equipment should be kept to daylight hours (exemptions may be made for snow clearing and street sweeping activities).

### 3.2.2 Short duration

Short duration operations are those that can be completed within four (4) hours in a single location.

Examples of short duration operations are: litter cleanup, vegetation removal, vegetation planting, tree pruning, bus shelter washing, catch basin cleanout, minor sign maintenance and emergency response (eg. spills, vehicular accidents)

### 3.2.3 Special Roadway Event

Any special events that will be affecting traffic as listed Section 2.2 ROWCAP Requirements, will require a ROWCAP. Event route maps and schedules should be included with the ROWCAP application (eg. races, parades, block party closures)

### 3.2.4 Long Duration

Long duration activities are considered to be anything longer than four (4) hours at a single location (eg. road re-paving, sidewalk / boulevard replacement, utility repairs or replacement)

## 3.3 Pedestrian Safety

Where work is taking place on or adjacent to a sidewalk, the safety of pedestrians must be held paramount. Pedestrian accommodation plans must be provided and implemented to the satisfaction of Transportation and Agriculture Services. The following standards shall be maintained to ensure pedestrian safety:

1. Pedestrian bridges complete with handrails shall be installed where trenches or excavations are placed. This also includes ramping temporary curb crossings to facilitate mobility and devices.
2. Where work is adjacent to a sidewalk, or there is a danger for pedestrians to be struck from above, sheltered walkways, hoardings or scaffolding must be used. Prior approval by Transportation and Agriculture Services is required.
3. When a sidewalk must be closed and detouring pedestrians to another sidewalk is not available:
  - A proper curb lane closure may be used to provide a temporary walkway. A minimum sidewalk width of 1.5 metres is required at all times
  - A temporary walkway though other locations in the road right-of-way may be provided but must be clearly defined.
4. When a sidewalk or trail is closed, it should be clearly signed at the nearest intersection to provide warning and direction to pedestrians and deter pedestrians from coming into the worksite. For trails, this includes an alternate route map installed at the closure or detour.

### 3.4 Standards of Performance and Responsibility

With the exception of emergency related work, all work on County-owned rights-of-way shall:

1. Be approved by Transportation and Agriculture Services under authority of the Director. They will set the extent of traffic disruption allowed, and review and approve temporary traffic control plans
2. Be pre-authorized and reported to the Transportation and Agriculture Services:
  - Five (5) working days in advance for minor work, or work on residential roadways
  - Ten (10) working days in advance for major work, road closures, or work on arterial or collector roadways
3. Require pre-authorization and/or a special permit when working in restricted areas. These areas include:
  - Heavy Rail right-of-way (i.e. CN or CP Rail)
  - Provincial right-of-way
  - Pipeline right-of-way
4. Require all appropriate construction or demolition permits from Planning and Development Services before a ROWCAP is issued. Contractors may be asked to produce these with their ROWCAP application.
5. In the case of emergency related work, contact Transportation and Agriculture Services before work is started. Notify Transportation and Agriculture Services at 780-417-7100 (24 hrs.) (9-1-1 for life threatening situations) of the location of any detour or diversion on any Strathcona County right-of-way. Always use qualified traffic control persons or Enforcement Services /RCMP to supplement an incomplete set-up under these circumstances.

### 3.5 Securing the Worksite

Securing the worksite is necessary to protect the public from potential hazardous conditions within the work zone. It is necessary to secure the worksite during any periods of inactivity and during the period when work is taking place.

It is also important for warning signs to be turned away from traffic when not required. This includes but is not limited to: shutdowns due to weather conditions, end of shift, weekends and holidays.

**3.5.1 During Periods of Activity**

1. Ensure that all necessary temporary traffic control devices are legible, properly positioned and in proper operational use as work continues.
2. Remove or securely cover any signs that are not required or are conflicting. For example, cover the posted speed if the set-up requires a speed reduction.
3. Place barricades around all stockpiled material, spoil piles and equipment that is stored on the road or shoulder.
4. All temporary traffic control devices shall be properly secured.
5. At a minimum, daily inspections of the worksite are required. Maintain a daily record of inspection and record any temporary traffic control changes. This should be done during the day and night for overnight set-ups. Adverse conditions may require adjustment of the traffic control devices, any changes shall be recorded.
6. Ensure that safe pedestrian movement is maintained and pedestrian and vehicle movements are separated.

**3.5.2 During Periods of Inactivity**

1. Where possible, remove all equipment and materials from the roadway.
2. All extraneous signs or detour material shall be removed from the roadway, turned away from traffic or covered up.
3. Establish a barrier around open excavations using physical barriers, such as concrete barriers (section 4.5) or suitable fencing, etc. The location and the nature of the excavation will dictate the method used to provide the necessary safety required.
4. Place reflectorized barricades or pylons around all stockpiled material, spoil piles, and equipment that is stored on the road or the shoulder.
5. All traffic control devices shall be secured during periods of inactivity.
6. Arrange to have roads within the traffic control zone sanded during periods of icy conditions.
7. At a minimum, daily inspections of the worksite are required. Maintain a daily record of inspection, and record any temporary traffic control changes. This should be done during the day, and night for overnight set-ups. Adverse conditions may require adjustment of the traffic control devices and any changes made shall be recorded.
8. Ensure that safe pedestrian movement is maintained and pedestrian and vehicle movements are separated.

### 3.5.3 Winterization of Construction Sites

Securing the work site during winter months is necessary to protect the public from potential hazards of the work zone. This also provides protection for snow removal and sanding equipment during winter operations. A separate ROWCAP application and TTC plan is required for winterized construction sites.

1. Open excavations are permitted to remain in place for the entire winter
2. Where possible, remove all equipment and materials from the roadway, and road right of way.
3. Establish a barrier around open excavations using physical barriers, such as concrete barriers (section 4.5), suitable fencing, etc. The location and the nature of the excavation will dictate the method used to provide the necessary safety precautions.
4. Delineating materials (ie. barricades and cones) may need to be permanently affixed to the road surface. Wooden barricades should be replaced with concrete mini-barriers or other suitable materials.
5. It may be necessary for barricades, signs, or other materials to be cleaned to ensure their visibility to traffic and pedestrians. It is the responsibility of the contractors to ensure the signs are visible at all times, and to perform regular inspections of the traffic accommodation materials
6. Sudden grade changes, severe bumps, and abnormalities in the driving surfaces should be clearly marked for winter operations. Permanently mounted bump signs should be installed at these locations and inspected by the contractor.

## 3.6 Record Keeping

Record keeping is an important component of temporary traffic control to document and ensure the appropriate measures are in place at all times. The project supervisor or prime contractor is responsible for maintaining a record of the temporary traffic control used and taking the necessary steps to correct any deficiencies. Records shall be made available at the request of Transportation and Agriculture Services.

### 3.7 Temporary Traffic Control Requirements

1. All temporary traffic control set-ups shall be to the satisfaction of Transportation and Agriculture Services.
2. All necessary traffic control devices, including temporary traffic control, must be in place before work commences. These devices shall be maintained by the contracting agency for the duration of work, or while any obstructions or hazards to traffic exist.
3. Minimum lane width shall be 3.0 metres per lane. This width shall be adjusted upward under circumstances such as curves, heavy vehicle traffic, truck routes, bus routes or high-speed situations
4. Where traffic control persons, or complicated traffic setups are not practicable, or do not permit the safe use of a roadway, a total closure may be an acceptable substitution.
5. It is the responsibility of the contractor, utility company or business unit to notify affected residents / businesses of road closures, parking restrictions and other work that impacts normal traffic flow. Notice must be provided, minimum of five (5) working days in advance of the start of work.
6. Requests for "No Parking" zones are to be approved by Transportation and Agriculture Services before placement. The requesting party shall place "No Parking" signs 24 hours prior to commencing work. In either case, the requesting party is responsible for sign maintenance. It is the responsibility of the contractor, utility company or business unit to check the "No Parking" zone 12 hours in advance of the prescheduled work to ensure sufficient signing. This zone will only be enforced provided there is sufficient signing and adequate advanced notice.
7. In case of emergency work affecting Transit, Utilities or Emergency Services contact Transportation and Agriculture Services at (780) 417-7100
8. Rush hour traffic in Strathcona County is from 6:00 a.m. to 9:00 a.m. and from 3:30 p.m. to 6:00 p.m., Monday to Friday. During these times, construction work is not allowed on arterial or arterial collector roadways, except in cases of emergency or with prior approval of the Transportation and Agriculture Services.
9. When traffic lanes within the worksite are required to be open to travel (i.e. during rush hours or at the end of a shift), trenches and small excavation sites may be bridged with steel plates. This should be used only if backfilling all or part of a trench is not practical.
  - a. Contact Transportation and Agriculture Services to determine the necessary set-up required (for example, plating may require a speed reduction).
  - b. Bump signs (WA-22) shall be provided for each traffic direction.
  - c. All bridge edges must be smoothed out or feathered using hot or cold mix asphalt.
  - d. All bridge plates must be adequately pinned to the road surface to prevent bridge movement.

- e. Temporary hazard markers shall be used to mark the location of bridging plates.
  - f. Insulate the plates to prevent banging; especially in the vicinity of residential communities.
  - g. Define/highlight the edges of the plating with high visibility material, such as fluorescent orange paint.
10. The restoration of road surfaces, sidewalks and boulevards must be to the satisfaction of Transportation and Agriculture Services Open Cut Guidelines.
  11. If an emergency vehicle (e.g. police cruiser, ambulance, fire truck) approaches the traffic control zone with sirens and lights flashing worksite employees are responsible to see that the emergency vehicle can safely drive through the traffic control zone.
  12. Any disruption that may affect signal timing or signal operations shall be coordinated with Transportation and Agriculture Services In the event of a signal related emergency, contact Transportation and Agriculture Services at 780-417-7100.

### 3.8 Roadway Requirements

In certain temporary traffic control situations special considerations need to be made. Transportation and Agriculture Services may provide additional requirements for TTC or additional restrictions for contractors working on County rights-of-way. The following are general guidelines for contractors to use:



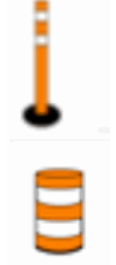






1. Revise road markings where required: remove redundant road markings, place new temporary markings, or place new permanent markings
2. In an area with heavy traffic volumes, or higher speeds, it may be necessary to place:
  - a. Digital Message Board (DMS) to advise motorists of upcoming construction
  - b. Electronic arrow board to provide detour or lane closure information to motorists further in advance, and supplement a traffic barricade. On roadways with speed at or greater than 60km/h, or where traffic volumes dictate.

Please note that any illuminated devices placed on a roadway should be equipped with low intensity settings for night time, as not to pose a hazard to motorists.

3. Certain situations may require the use of the RCMP or Enforcement Services (Point Duty). Please contact Transportation and Agriculture Services to discuss the need for RCMP involvement

3.8 Roadway Requirements Continued.

Sign placement and tapers follow guidelines for the location of temporary traffic control devices. These distances are based on the following chart:

V	A	L	B	D	Device	Arrow
50 km/h	50 metres	30 metres	35 metres	8 metres		
60 km/h	50 metres	40 metres	45 metres	12 metres		
70 km/h	75 metres	60 metres	50 metres	15 metres		
80 km/h	100 metres	80 metres	60 metres	15 metres		
90 km/h	100 metres	105 metres	65 metres	18 metres		
100 km/h	125 metres	125 metres	70 metres	18 metres		
110 km/h	125 metres	145 metres	75 metres	20 metres		

Where: V = Posted speed limit

A = required spacing between signs

L = length of taper

B = Length of the longitudinal buffer space

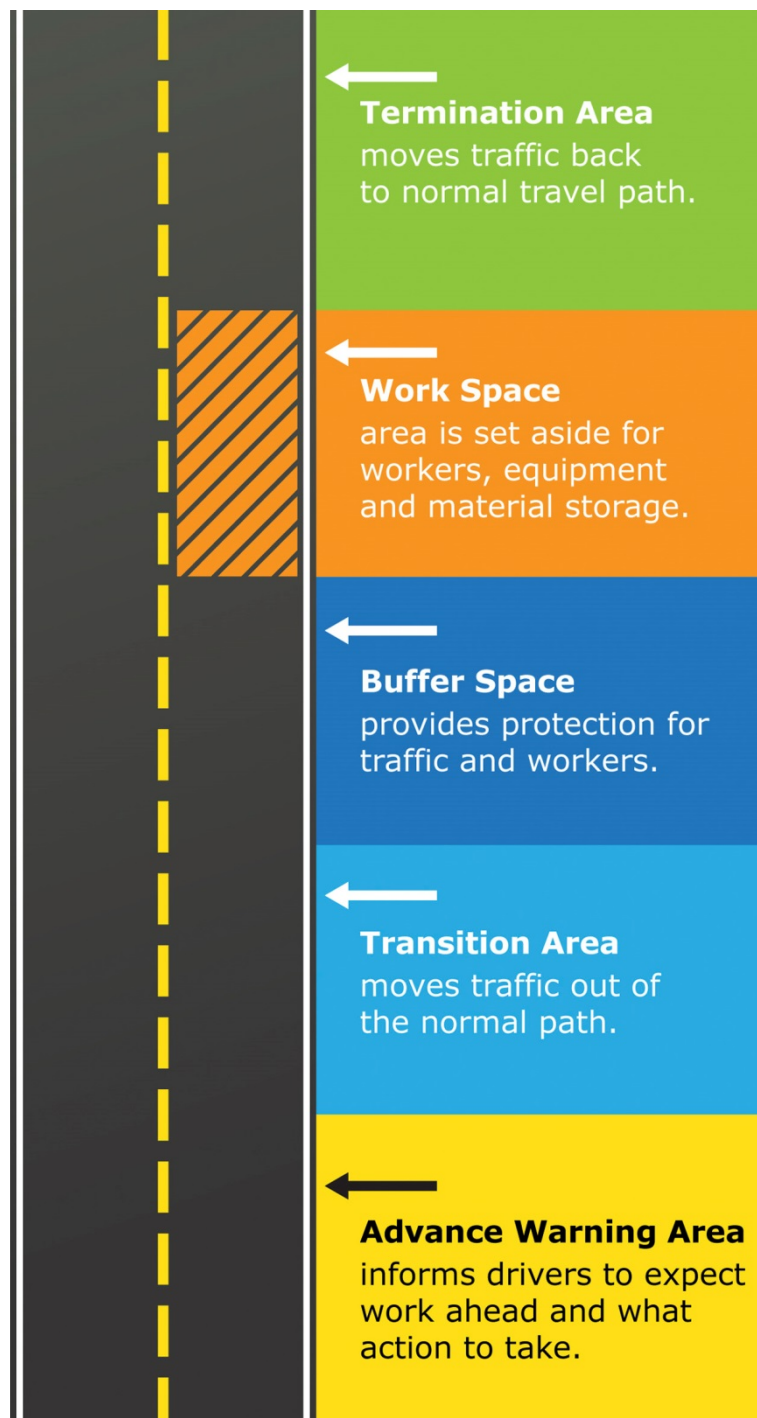
D = Spacing between delineation devices

4. It shall be noted that it is requirement to utilize electronic arrow boards on roadways where speed limits are 60km/h or higher, on Arterial roadways, and where traffic accommodation is remained in place at night.
5. Work taking place on a curved roadway must be clearly visible from both directions. This may include extending a TTC setup so that the warning signs and taper are on a straight portion of roadway before the curve.
6. Temporary traffic control persons, TTCP, or Flag Persons (Chapter 4.2) are required when:
  - a. When two-way traffic has to be guided through a single lane
  - b. When materials or equipment are being moved across a traveled lane
  - c. To assist motorists through complex traffic control set-ups
  - d. When required by Transportation and Agriculture Services
7. Where TTC has been setup in a winter condition, before the roadway is opened to traffic it must be cleared of snow, and sanded as required. It is the responsibility of the contractor, or project manager to arrange for this with Transportation and Agriculture Services when applying for a ROWCAP.



### 3.9 Temporary Workzone Component Areas

A typical Temporary Traffic Control set-up can be divided into five areas:



## Chapter 4 - Guidelines For Traffic Control Devices

### 4.1 Signs and Specifications

Sign sizes are dictated by roadway classification or by Strathcona County Transportation Engineering Department. Refer to Manual of Uniform Traffic Control Devices of Canada (MUTCDC) for sign specification. Size, color, shape, and reflectivity shall be in accordance with the most current version of MUTCDC.

All signs, unless otherwise specified, must be retro reflective. Retro reflective material shall be Diamond Grade or equivalent as per County Designs and Construction Standards

The four main types of signage found on a typical construction site, and examples of each are outlined below.

#### 4.1.1 Construction Information Signs

Construction Information signs are used to provide notice to motorists and pedestrians of upcoming projects, or projects that are in progress. They shall convey a brief, concise message, and be placed at right angles to traffic for easy observation. Signs placed overnight must be made from reflectorized material.



#### 4.1.2 Regulatory Signs

Regulatory signs are used to identify a traffic regulation that is applicable at a given time or place on a road and to identify the legal requirements, therefore they are enforceable by law. Regulatory signs typically have a white background with a black outline and lettering.



**Stop Sign  
(RA-1)**



**Maximum Speed  
Sign (RB-1)**



**No Parking Sign  
(RB-51)**

#### 4.1.3 Warning Signs

There are two main types of warning signs; permanent, and temporary (construction). Permanent condition signs have a yellow background and black text, symbol and border.



**Chevron  
(WA-9)**



**Speed Advisory  
(WA-7)**



**Lane Ends  
(WA-33-R)**

Temporary condition signs have an orange background and black text, symbol and border.



**Construction Ahead  
(WD-101)**



**Bump  
(WD-A-22)**



**Traffic Control Person  
Ahead (WD-A-21)**

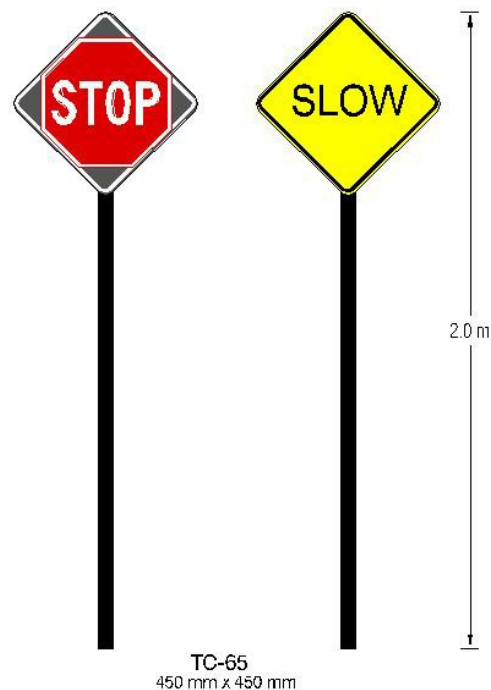
## 4.2 Control of Traffic Using a Traffic Control Person

Traffic control persons are responsible for the safety of motorists, pedestrians, their fellow workers and equipment used on the worksite. Therefore, selecting a traffic control person must be based on the individual's experience, alertness and decisiveness. Traffic control persons shall be familiar with flagging standards and procedures as set out by the Alberta Construction Safety Association (ACSA). For more information on courses offered on flagging operations, please contact the ACSA at (1-800-661-2272) or visit <http://www.acsa-safety.org>.

A traffic control person is required to use a "Stop/Slow" paddle during the day. The paddle shall be reflectorized. At night, a red lantern or flashlight must be used in addition to the paddle. A traffic control person must wear an approved hard hat, reflective safety vest and safety shoes as identified by the *Occupational Health and Safety Act* and the MUTCDC – C3.6.6 Personal Protective Equipment.

Illumination should be provided for traffic control persons required to be working in areas where normal street lighting is not available during hours of darkness. Always use a Traffic Control Person Ahead sign (TC-21) and a Maximum Speed Ahead sign (WB-9) in advance to alert motorists of a flagging operation. Traffic control persons shall stop traffic from the side of the traffic lane and shall never turn their back to traffic. Traffic control persons shall never leave their post until relieved by another traffic control person in full safety apparel.

Each traffic control person shall keep in visual contact with any other traffic control persons on the job. If visual contact cannot be maintained, there must be radio contact or a third traffic control person to relay signals. For example, a third traffic control person can relay signals from a position on the middle of a curve, or atop a hill (where visibility is obstructed by horizontal or vertical curves).



**Traffic Control Paddles**

Where possible, traffic control persons shall co-ordinate direction of traffic flow with existing traffic signals. If coordination cannot be managed, contact Transportation and Agriculture Services, a minimum of two working days prior to the flagging operation, to arrange Transportation Engineering Branch in the Transportation and Agriculture Services Department to have the signals changed to accommodate the anticipated traffic flows.

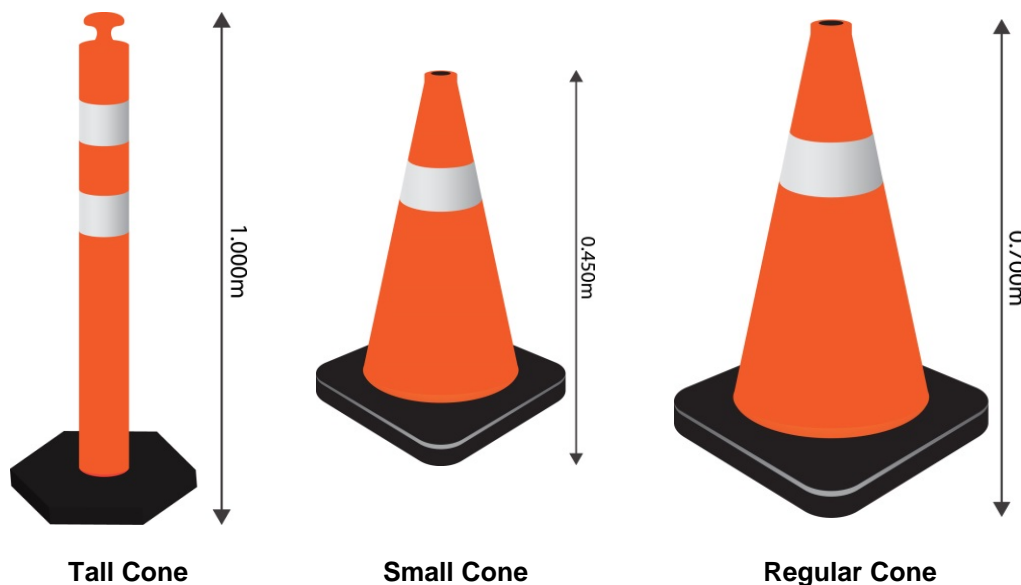
When more than one traffic control person is required at an intersection, traffic shall be moved through the intersection one direction at a time using a predetermined rotation (clockwise).

### 4.3 Delineation (Channelization) Devices

Delineation devices are used to form curves, lines, or boundaries that guide road users to the intended path. The appropriate advanced warning signs shall be used with all delineation devices.

Delineation devices include cones, construction markers, drums, tubular devices and chevron alignment signs. Delineation devices do not include barricades, concrete barriers or signs, other than chevron alignment signs.

Traffic cones shall be fluorescent orange and made of rubber or similar flexible material. The minimum height required for cones is 450 mm on roadways with a speed limit of 60 km/h or less, and 700mm for speeds up to 70 km/h. For use on roadways where the speed is 70 km/h or greater, drums shall be used. Tubular markers may be used for tangent sections on roadways (70 km/h or greater) provided recommended spacing is adopted (refer to typical set-ups for required spacing).



Construction markers may be used for delineation devices, however, they are not recommended. Drums for high volume/high speed roadways, or cones for lower speed roadways are the preferred methods as indicated above. Drums shall be constructed of a material that does not create a hazard to vehicles on impact and should be manufactured so as not to roll.

Chevron alignment signs may be used to provide additional guidance on the outside of curves or sharp turns.

Amber flashers/warning lights shall be used to identify obstructions at night. There are three main types of lights for the purpose of temporary traffic control:

- Type A: low intensity flashing lights for nighttime use.
- Type B: high intensity flashers are effective day and night.
- Type C: steady burn, low-wattage lights are used at night for delineation.

Additional consideration should be given for nighttime work. Nighttime work can expedite the work, reducing the disruption of traffic. If floodlights are used for nighttime work, care should be taken so as not to impair the vision of approaching motorists.

#### 4.4 Barricades

Proper placement of barricades is necessary to ensure public safety, as barricades may be a potential hazard. The following provides some examples of acceptable and non-acceptable use of barricades:

##### *Acceptable use of Barricades:*

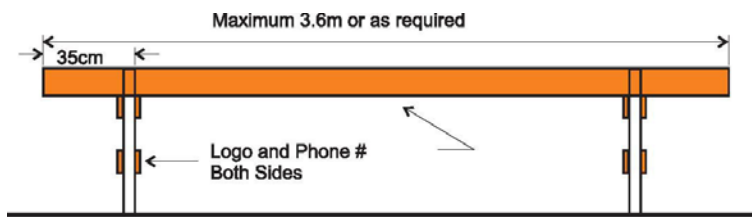
- Barricades shall face oncoming vehicular traffic.
- Barricades are used to outline hazardous work areas and to prevent vehicles and pedestrians from entering the work area.
- Barricades are used to warn of an activity area and to obstruct entry into an activity area.
- Temporary signage may be placed on barricades only if necessary to accommodate a modified 'lane closure arrow', 'road closed' and 'no through traffic' signs.
- Barricades shall be used to close a road.

##### *Non-acceptable use of Barricades:*

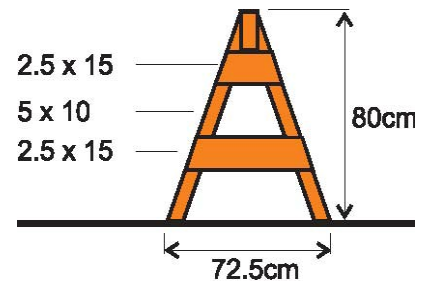
- Barricades shall **not** be used as a delineation device.
- Barricades shall **not** be placed parallel to the flow of traffic. (For example, they are not to be used to mark the boundary between a travel lane and the work area or separate adjacent lanes of traffic.)
- Barricades shall **not** be placed in oncoming traffic without necessary advanced warning devices and signs.
- Barricades shall **not** be used for the placement of regulatory signs.
- Barricades shall **not** be located within the buffer space.

**Construction Barricades** (as shown)

- A Construction Barricade or light barricade is a portable device that typically has one rail.
- Light Barricades may be used off road only.
- Light Barricades should be stabilized using sandbags placed on the lower section of the frame. Under no circumstances shall they be placed over the rail of the barricade.



ELEVATION

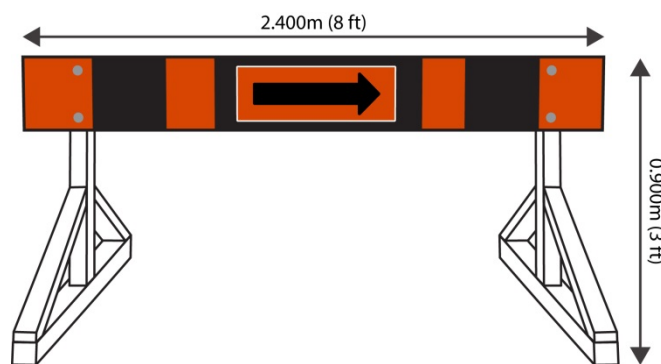


END VIEW

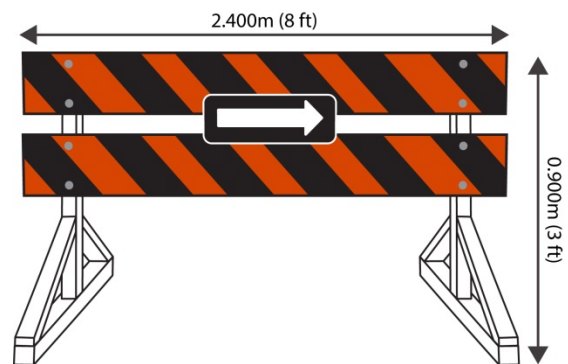
**Typical Construction Barricade(Temporary)**

**Traffic Barricades** (as shown)

- Urban Barricade or Highway Barricades are both acceptable for road, street, lane or shoulder closures in Strathcona County.
- Traffic Barricades may be used for road closures of short duration.



**Urban Barricade**



**Highway Barricade**

## 4.5 Traffic Barriers

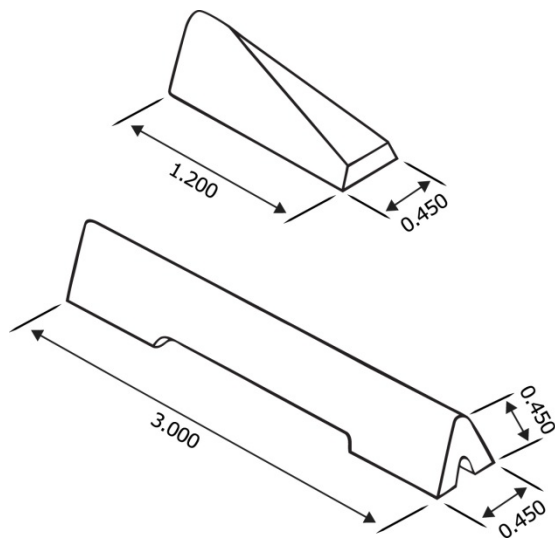
Longitudinal traffic barriers are used in work zones to:

- Limit the possibility of traffic entering the work area
- Protect the workers
- Separate traffic
- Protect the construction site
- Separate pedestrians from vehicular traffic

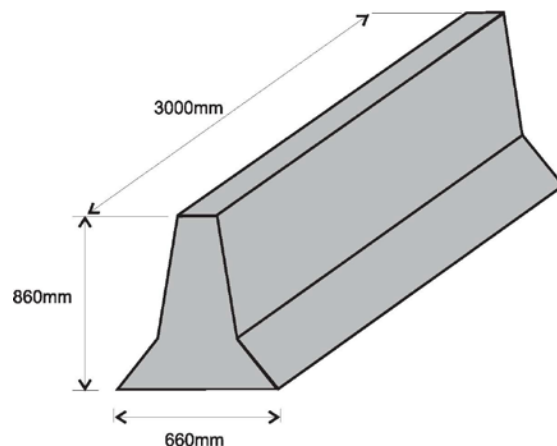
The use, placement and maintenance of longitudinal barriers should be based on acceptable engineering practices. Traffic barriers should:

- Be placed continuously without gaps between sections
- Have acceptable flare rates on the leading edge, or have appropriate end treatments (eg. Impact attenuators)
- Be equipped with glare screens where necessary
- Be placed 1.0m from the edge of the driving lane
- Be used during periods of inactivity where excavations compromise safety
- If used to channelize vehicular traffic, the temporary traffic barrier shall be supplemented with delineation, pavement markings, or channelizing devices for improved daytime and nighttime visibility.

For acceptable applications and installation requirements, please refer to the roadside safety section of the Transportation Association of Canada - Geometric Design Guide for Canadian Roads.



**Mini Barrier**

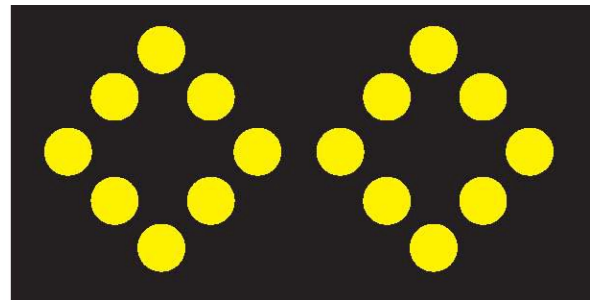
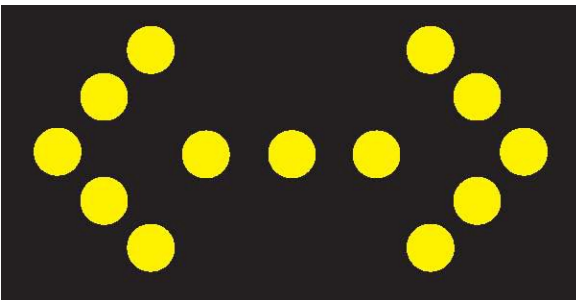
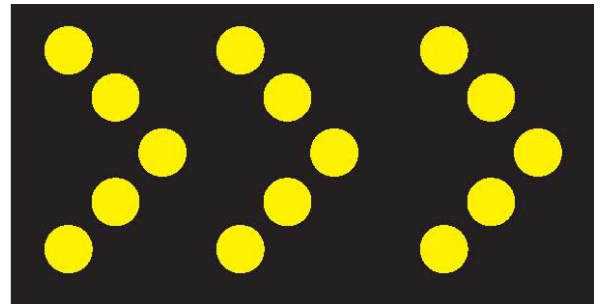
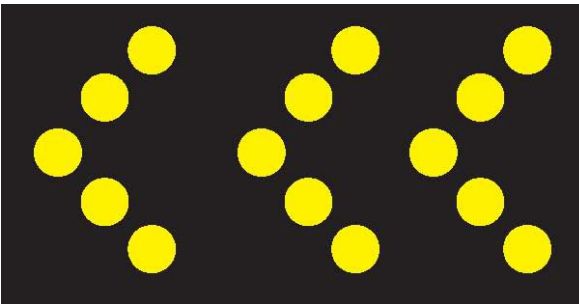


**Standard Concrete (Jersey) Barrier**



## 4.6 Arrow Boards

Arrow boards are a safe and effective method of traffic control, when used as intended. They are not to take the place of advance warning signs or delineation devices. When combined with the use of advanced warning signs and delineation devices, arrow boards are very effective. They are especially useful in situations that require higher than normal visibility. Examples where arrow boards should be used are on overnight set-ups, high-speed, high volume roadways (speeds 60 km/h and greater) and in poor weather conditions. It is important to note that arrow boards used for nighttime applications should be less bright than during daytime operations so as not to impair the vision of the approaching motorists. Arrow boards placed on the roadway must be accompanied by reflectorized barricades and cones to delineate them from traffic in the event that they malfunction.



## 4.7 Digital Message Boards

Digital Message Boards (DMS) are used to relay information to motorists for upcoming or existing road construction. Typically, these are used on high volume roadways where road construction is expected to cause delays. For example, they are used to advise motorists to expect delays or use alternative routes where possible. Variable Message Boards are more effective at capturing the attention of the road users than static signs. Variable Message Boards should be programmed so motorists are able to read the message twice given the posted speed. Digital Message boards placed on the roadway must be accompanied by reflectorized barricades and cones to delineate them from traffic.

## 4.8 Impact Attenuators

Impact Attenuators (also known as crash cushions) are used to prevent an errant vehicle from impacting a fixed object by controlled deceleration. Impact Attenuators in temporary traffic control zones protect the motorists from the exposed ends of barriers, fixed objects and other hazards. There are two types of attenuators commonly used for temporary traffic control: (1) stationary, and (2) truck mounted/mobile. Truck Mounted Attenuators (TMAs) are mounted on the rear of a crash truck and deforms on impact in a controlled manner.

Stationary attenuators are recommended for long term situations, while TMAs are preferable for short term or mobile operations. For more information on the use and types of these devices, refer to the Transportation Association of Canada - Geometric Design Guide for Canadian Roads.

## ROWCAP Manual Appendix A

### Worksite Assessment and Checklist

#### *Before the job*

- Has Transportation and Agriculture Services approved your temporary traffic control plan (TTCP)?
- Do you need assistance from Transportation and Agriculture Services for temporary traffic control?
- Do you have County Authority and the necessary permits in place?
- Do you require a temporary parking accommodation plan?
- Have you indicated on your TTCP if you are working on a Transit route, school bus route or rail line?
- Have you given adequate advance notice of the work that you plan to do to the affected businesses, utilities and residents (by means of a letter drop)? Has this letter been approved by Transportation and Agriculture Services?
- Are the required temporary traffic control devices available at the worksite to accommodate traffic?
- Are the pedestrians and motorists separated and protected from each other and the worksite?
- Have arrangements been made to restore or rehabilitate the right-of-way?
- Do you have a "Record of Temporary Traffic Control" form? For further requirements and information, refer to the Appendix.

***During the job***

- Is there enough proper equipment available to secure the worksite overnight, if necessary? Remember, you will need reflective signs, markers, flashers, and sandbags for your set-up. You may also need bridging materials, snow fence and barricades for the worksite. Are there any signs that need to be covered or removed during periods of inactivity (i.e. speed reduction signs)?
- Are all traffic control devices still in their proper places, aligned and standing upright? Do you need to secure signs with sandbags? Are the signs clean and legible (day and night)?
- If a traffic control person is being used, are proper procedures being followed? Has the traffic control person(s) been trained by an accredited institution?
- Does the traffic set-up continue to meet the needs of your job? If not, seek approval from Transportation and Agriculture Services to modify and make changes.
- Is the work zone being monitored, as specified?
- Have arrangements been made for paving materials to bring the right-of-way back into service?

***After the job***

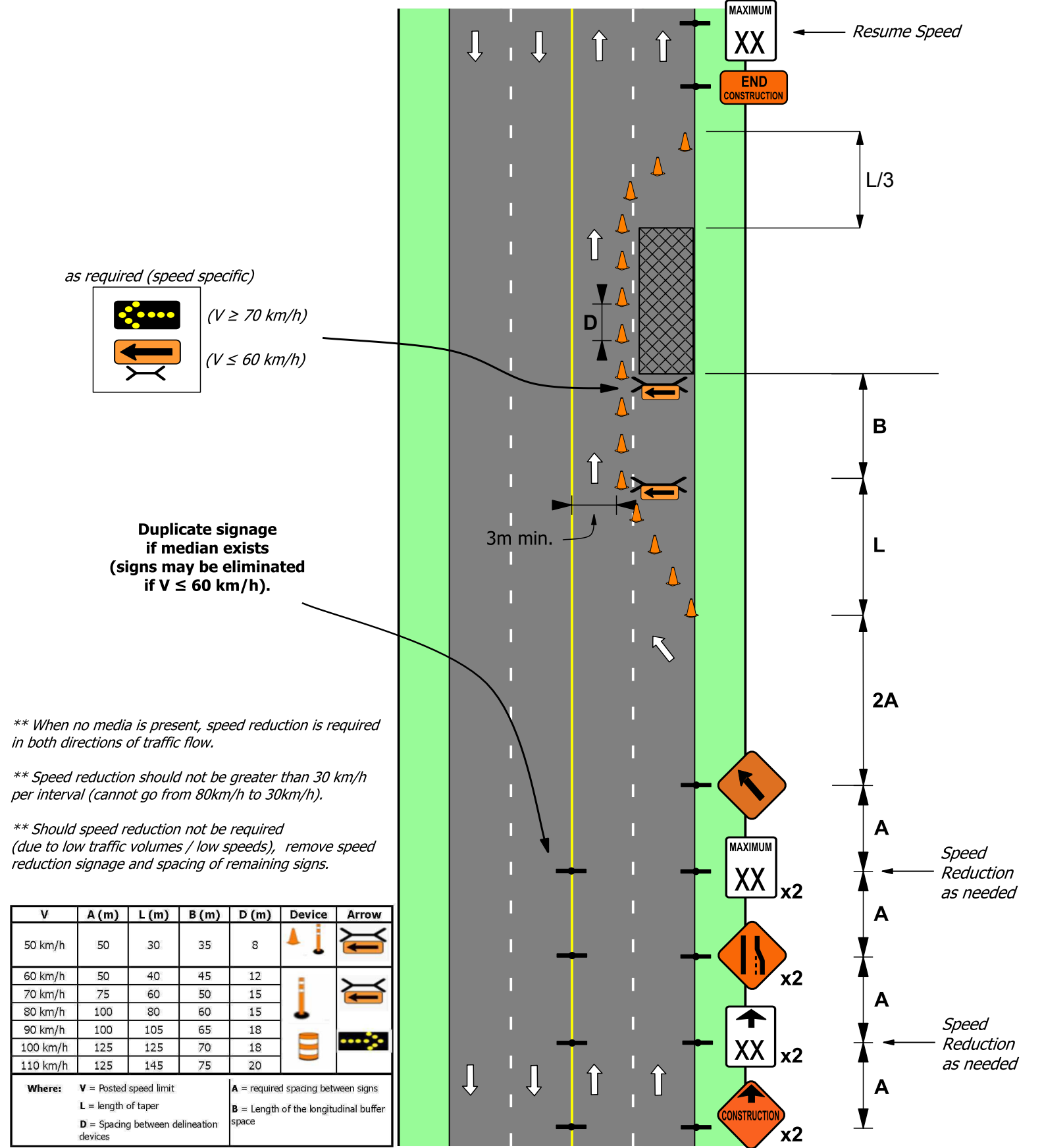
- Have you obtained approval from Transportation and Agriculture Services to re-open the roadway?
- Have you cleaned up the worksite and rehabilitated the right-of-way in a condition equal to or better than it was prior to the start of the work?
- Have arrangements been made to restore or rehabilitate the right-of-way?
- Have you removed all temporary traffic control devices?

## ROWCAP Manual Appendix B Temporary Traffic Control

### Plan Templates

The following Temporary Traffic Control Plan (TTCP) templates are provided as examples that may be used as a guide to the preparation of traffic accommodation strategies and plans to be submitted with an application for a Right Of Way Construction Permit (ROWCAP) for work affecting Strathcona County road rights-of-way. Due to the unique aspects of a project, activity and work zone, a site-specific traffic accommodation strategy is normally required to be submitted with a ROWCAP application, including details and plans designed for a particular site.

<b>Drawing Number</b>	<b>Title of Drawing</b>
RCP-02	Single Right Lane Closure
RCP-05	Yield to Oncoming Traffic
RCP-06	Two-Way Flagging Operation
RCP-08	Multi-Lane Closure Two Right Lanes
RCP-10	Multi-Lane Closure Left Lane Closed in Each Direction
RCP-11	Traffic Split
RCP-20	Sidewalk Closure



\*\* When no media is present, speed reduction is required in both directions of traffic flow.

\*\* Speed reduction should not be greater than 30 km/h per interval (cannot go from 80km/h to 30km/h).

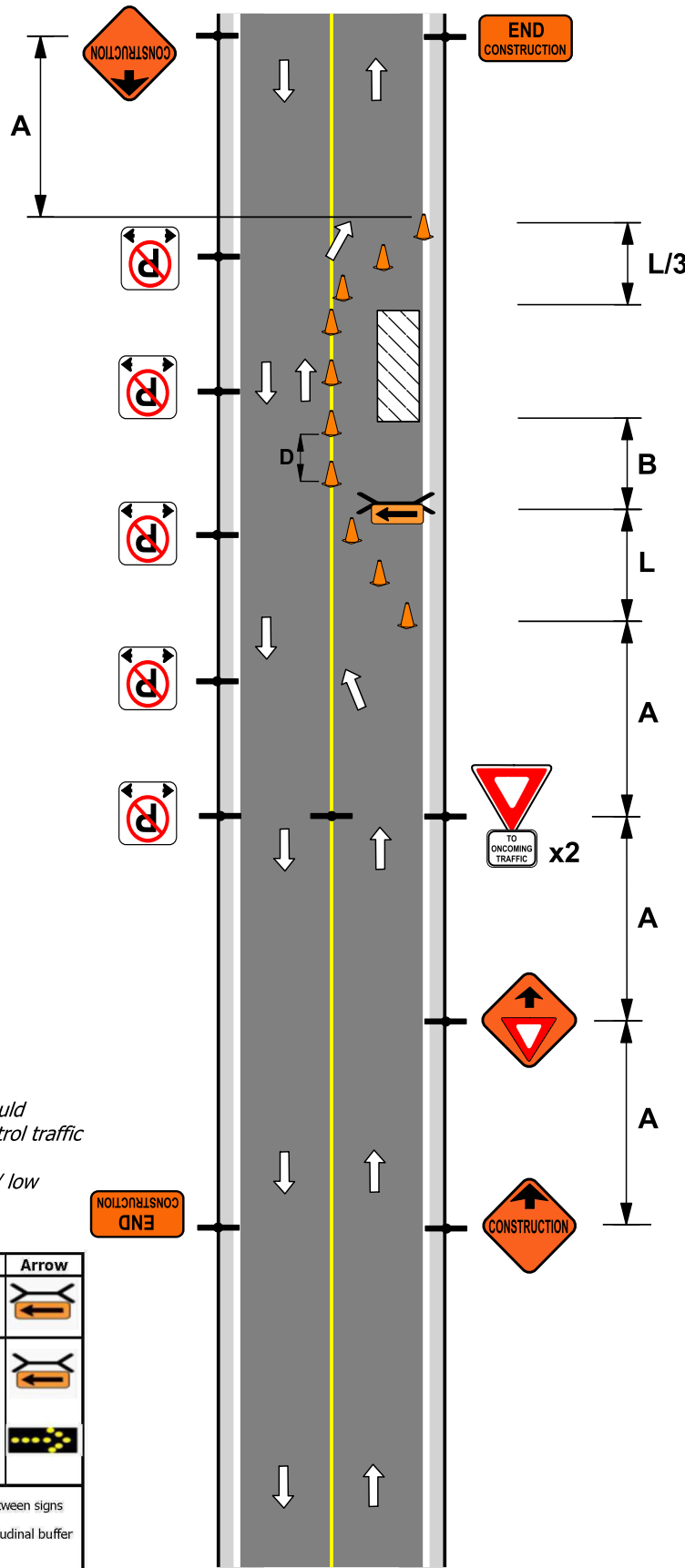
\*\* Should speed reduction not be required (due to low traffic volumes / low speeds), remove speed reduction signage and spacing of remaining signs.

**RIGHT OF WAY  
CONSTRUCTION ACTIVITY  
MANUAL**



REVIEWED BY:	T. Hameed, P.Eng
APPROVED BY:	R. Anders, P.Eng
DATE:	JUNE 17, 2015
DRAWN BY:	C. Pullishy, C.E.T.
DRAWING NUMBER	<b>RCP - 02</b>

**SINGLE RIGHT LANE CLOSURE**



Signage as Needed:

MAXIMUM  
XX

↑  
XX

\*\* Use RCP-06: Two-way Flagging Operation should signs, signals, and barricades not adequately control traffic

\*\* This plan should only be used on low volume / low speed roadways.

V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

**Where:** V = Posted speed limit  
 L = length of taper  
 D = Spacing between delineation devices

A = required spacing between signs  
 B = Length of the longitudinal buffer space

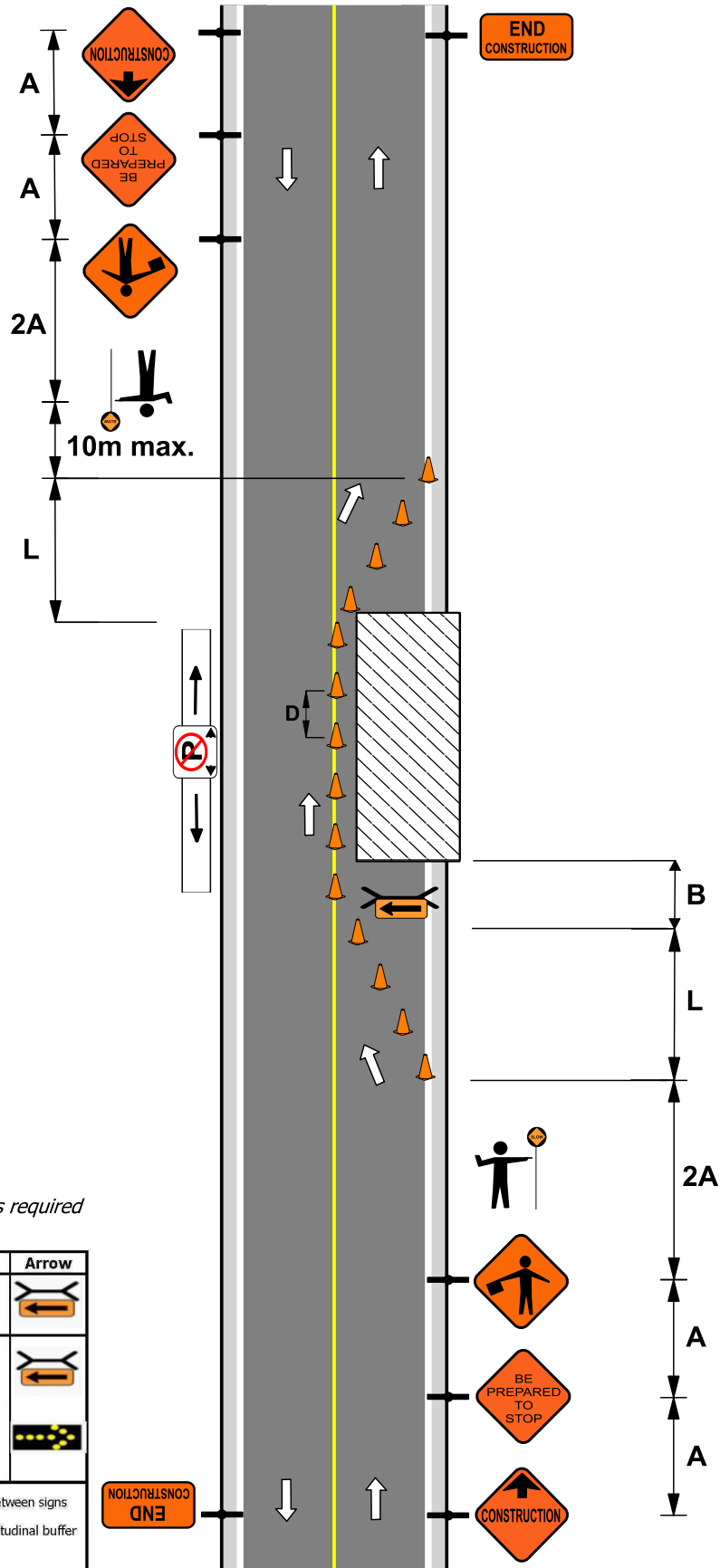
# RIGHT OF WAY CONSTRUCTION ACTIVITY MANUAL



REVIEWED BY:	T. Hameed, P.Eng
APPROVED BY:	R. Anders, P.Eng
DATE:	JUNE 18, 2015
DRAWN BY:	D. Law
DRAWING NUMBER	<b>RCP - 05</b>

## Yield to Oncoming Traffic





\*\* Maximum speed during flagging is 50 km/h

\*\* Ban parking across from construction zone as required

V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

**Where:** V = Posted speed limit  
 L = length of taper  
 D = Spacing between delineation devices

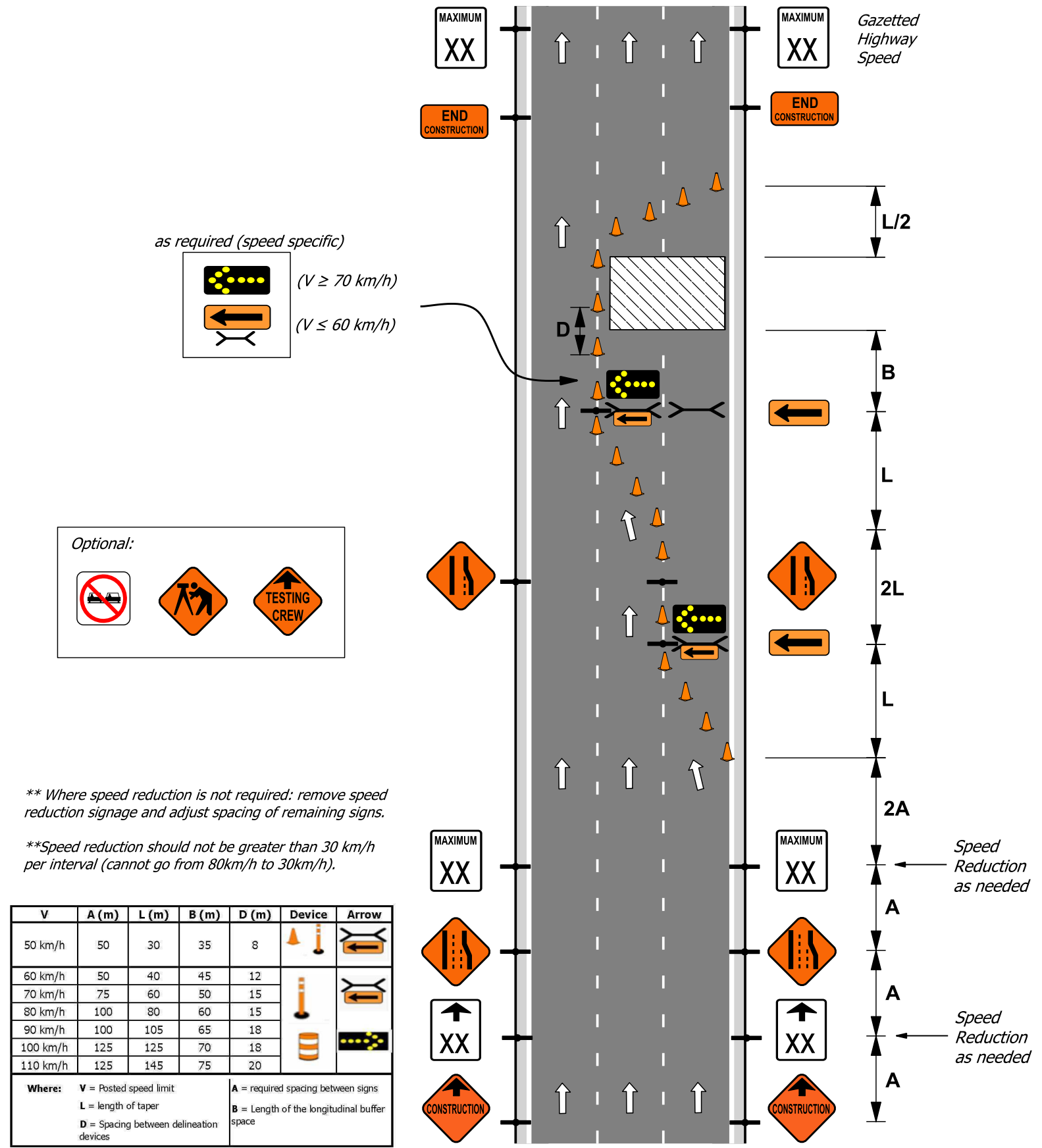
**A** = required spacing between signs  
**B** = Length of the longitudinal buffer space

# RIGHT OF WAY CONSTRUCTION ACTIVITY MANUAL




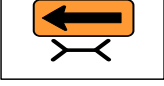
REVIEWED BY: T. Hameed, P.Eng  
 APPROVED BY: R. Anders, P.Eng  
 DATE: JUNE 18, 2015  
 DRAWN BY: D. Law  
 DRAWING NUMBER: RCP - 06

## Two-way Flagging Operation



as required (speed specific)

 ( $V \geq 70$  km/h)







 ( $V \leq 60$  km/h)

Optional:

\*\* Where speed reduction is not required: remove speed reduction signage and adjust spacing of remaining signs.

\*\*Speed reduction should not be greater than 30 km/h per interval (cannot go from 80km/h to 30km/h).

V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

Where: V = Posted speed limit  
 L = length of taper  
 D = Spacing between delineation devices

A = required spacing between signs  
 B = Length of the longitudinal buffer space

# RIGHT OF WAY CONSTRUCTION ACTIVITY MANUAL



REVIEWED BY: T. Hameed, P.Eng

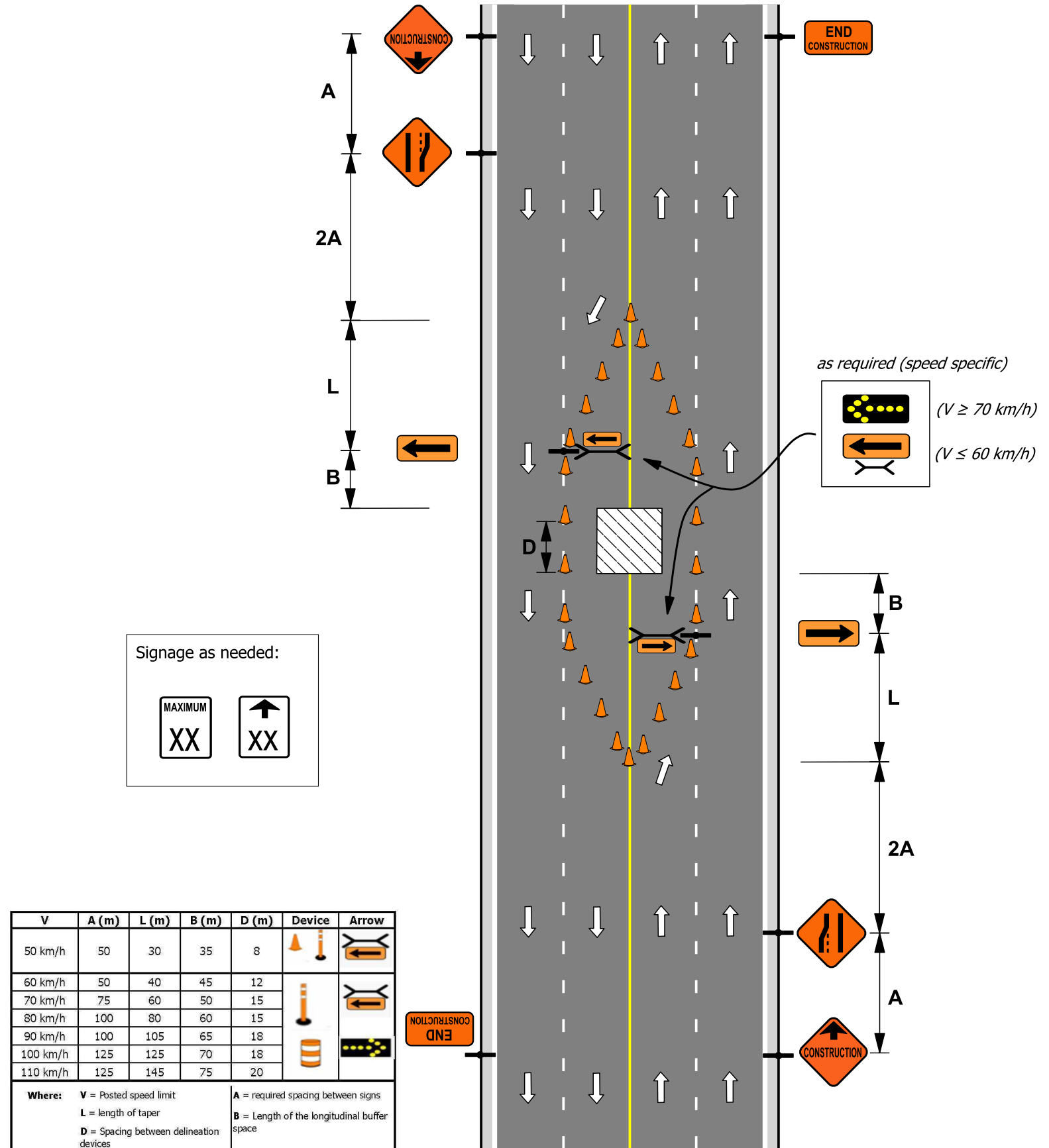
APPROVED BY: R. Anders, P.Eng

DATE: JUNE 19, 2015

DRAWN BY: D. Law

DRAWING NUMBER: RCP - 08

## Multi-Lane Closure Two Right Lanes



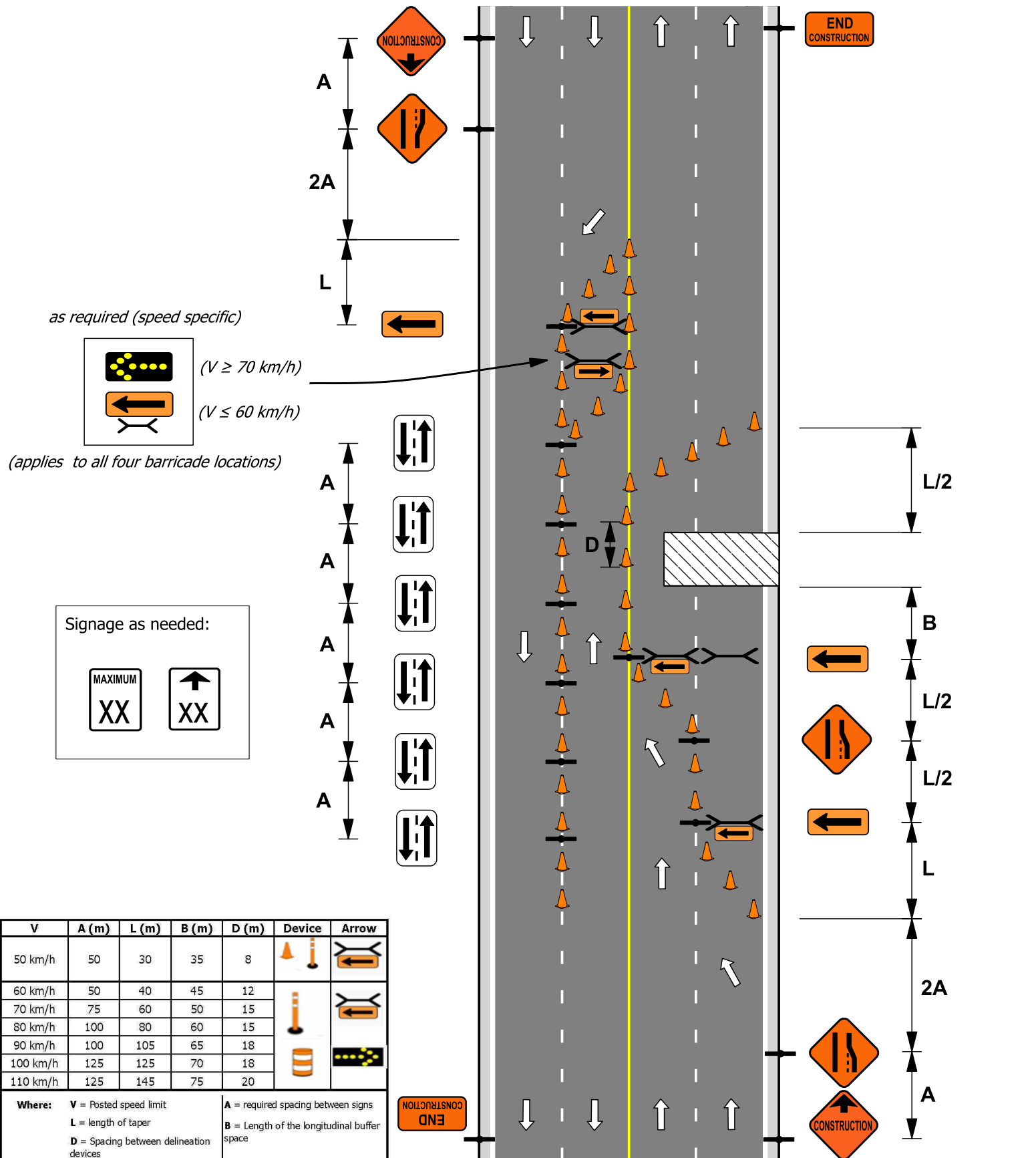
V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

# RIGHT OF WAY CONSTRUCTION ACTIVITY MANUAL

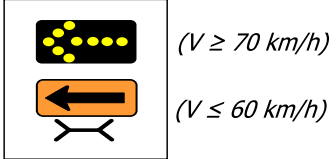


REVIEWED BY: T. Hameed, P.Eng  
 APPROVED BY: R. Anders, P.Eng  
 DATE: JUNE 19, 2015  
 DRAWN BY: D. Law  
 DRAWING NUMBER: RCP - 10

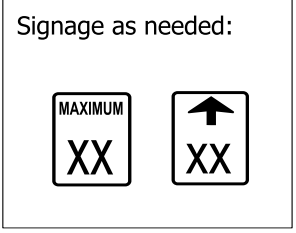
## Multi-Lane Closure Left Lane Closed in Each Direction



as required (speed specific)



(applies to all four barricade locations)



V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

**Where:** V = Posted speed limit  
 L = length of taper  
 D = Spacing between delineation devices  
 A = required spacing between signs  
 B = Length of the longitudinal buffer space

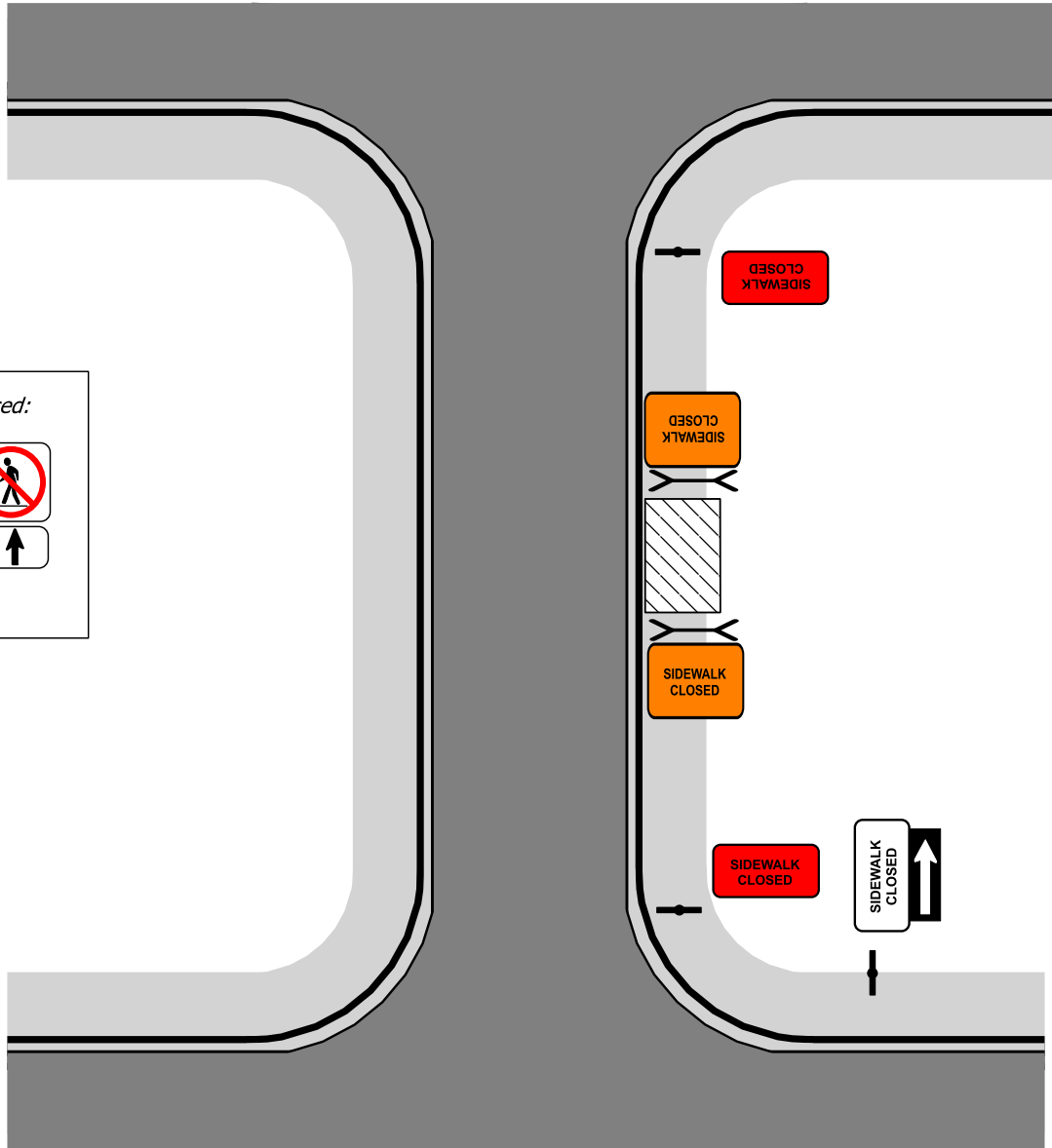
# RIGHT OF WAY CONSTRUCTION ACTIVITY MANUAL



REVIEWED BY: T. Hameed, P.Eng  
 APPROVED BY: R. Anders, P.Eng  
 DATE: JUNE 19, 2015

## Traffic Split

DRAWN BY: D. Law  
 DRAWING NUMBER: **RCP - 11**



Other signs that may be used:

V	A (m)	L (m)	B (m)	D (m)	Device	Arrow
50 km/h	50	30	35	8		
60 km/h	50	40	45	12		
70 km/h	75	60	50	15		
80 km/h	100	80	60	15		
90 km/h	100	105	65	18		
100 km/h	125	125	70	18		
110 km/h	125	145	75	20		

**Where:** V = Posted speed limit  
 L = length of taper  
 D = Spacing between delineation devices

A = required spacing between signs  
 B = Length of the longitudinal buffer space

<b>RIGHT OF WAY          CONSTRUCTION ACTIVITY          MANUAL</b>  <b>Sidewalk Closure</b>	 <b>STRATHCONA          COUNTY</b>	<b>REVIEWED BY:</b> T. Hameed, P.Eng
		<b>APPROVED BY:</b> R. Anders, P.Eng
		<b>DATE:</b> JUNE 24, 2015
		<b>DRAWN BY:</b> D. Law
		<b>DRAWING NUMBER</b> <b>RCP - 20</b>