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SPECIFICATIONS FOR TRAFFIC CONTROL

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## SPECIFICATIONS FOR TRAFFIC CONTROL

### 200. 1. SCOPE

These Specifications and the Work Zone Traffic Control Manual govern operations pertaining to the regulation and guidance of traffic safely through or around the work.

### 200. 2. DEFINITIONS

#### 2.1 Work Zone Traffic Control Manual

The Department's Traffic Engineering Branch has developed a manual intended to provide a single source for traffic control standards for use on Manitoba's highways. All references in this Specification to signs, sign schedules and drawings shall be interpreted to mean those shown in the Work Zone Traffic Control Manual or any amendment to the Work Zone Traffic Control Manual issued by the Traffic Engineering Branch.

#### 2.2 Work Zone

A work zone is an area of the highway with construction, maintenance, or utility work activities. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles. It extends from the first warning sign or flashing lights on a vehicle to the "Construction Ends" sign or the last temporary traffic control device. A work zone may be for short or long durations and may include stationary and mobile activities.

#### 2.3 Work Area

A work area is located within a work zone and is defined as any portion of the highway on which the Contractor's staff and equipment are performing work and/or where a construction related hazard exists. There may be multiple work areas within a single work zone. Two or more work areas separated by less than one kilometre will be considered as a single work area.

#### 2.4 Traffic Control Device

A traffic control device is any approved gateway assembly, sign, barricade, channelization device or other device placed upon, over or adjacent to a roadway, which is intended to regulate, warn, or guide road users.

#### 2.5 Traffic Control Level

A traffic control level will specify the type and application of traffic control devices and workforce necessary to regulate traffic having regard to traffic volume, geometrics and type of work on the project.

**Traffic control required on the project will be determined by the Engineer and identified in the bid items as Level I, II, III or IV.**

#### 2.6 Traffic Management Plan (TMP)

A Traffic Management Plan (TMP) is a detailed plan for the placement of all traffic control devices within the work zone. The typical TMP templates included in the Work Zone Traffic Control Manual shall be used as the basis for a project TMP on simple traffic control projects. For complex traffic control projects, a site specific TMP must be developed.

## 2.7 Designated Construction Zone

A Designated Construction Zone (DCZ) is a work zone where The Highway Traffic Act authorizes double fines for speeding whether or not there are workers/equipment present and whether or not there is a reduction in the maximum speed within the DCZ.

Traffic authorities and contractors working on their behalf establish and identify a DCZ by using the signage prescribed in the Designated Construction Zones Regulation.

## 200. 3. GENERAL

### 3.1 Interference with Traffic

The Contractor shall not close the highway or reduce the width or number of traffic lanes available for traffic except as specified in the Contract or approved by the Engineer.

The Contractor shall at all times carry on the work in a manner that will create the least interference with traffic, consistent with the performance of the work.

Construction equipment shall not be parked in such a manner as to obscure or in any way block the road users' view of traffic control devices. Employees' vehicles may only be parked on the roadway if they are being used in the performance of the work.

The Contractor shall keep the travelled way free of foreign objects such as spilled earth, rock, timber and other items that may fall from his transporting vehicles. Materials spilled by or dropped along or across any public travelled roadway, both within and outside the contract limits, shall be removed immediately.

The Contractor shall provide and maintain reasonable access to property fronting or in the vicinity of the work. Where temporary disruption of access is authorized by the Engineer, the Contractor shall make adequate arrangements with the affected property owners.

### 3.2 Traffic Management Plans

The Contractor shall prepare and submit a separate Traffic Management Plan (TMP) for each stage of planned construction operations. All TMP's shall be reviewed and approved by the Engineer prior to the commencement of the project. The contractor shall ensure that copies of the TMP's are available on site at all times.

Should planned construction operations change after the commencement of the project, the contractor shall prepare a new TMP reflecting the change. The new TMP shall be reviewed and approved by the Engineer prior to the commencement of that stage of work.

### 3.3 Regulatory Speed Reductions

Traffic Management Plans may include regulatory speed reductions within the work zone when a risk analysis indicates that they are required for the safety of workers and/or road users. Longer work zones may have multiple reduced speed areas coinciding with individual work areas of the project.

Where a risk analysis supports the need for a speed reduction, the Director of Traffic Engineering has granted blanket pre-approval for regulatory speed reductions for the following common work zone conditions and hazards. The Contractor shall seek the approval of the Engineer prior to introducing a regulatory speed reduction authorized under the blanket pre-approval.

All other conditions requiring a speed reduction must be approved by the Director of Traffic Engineering.

WORK ZONE CONDITION / HAZZARD	PRE-APPROVED MINIMUM SPEED LIMIT	APPROVED EXTENT OF REDUCED SPEED ZONE
Workers are located in close proximity to traffic (up to a maximum of 12m from an open traffic lane)	60 Km/h	500m in advance of area where workers are active to 300m beyond area where workers are active
A significant unprotected roadside hazard (e.g. excavation area) is located within the clear zone	70 Km/h	500m in advance of roadside hazard to 300m beyond roadside hazard
The conversion of a 4-lane divided highway to 2 lane/2 way operation	80 Km/h	500m in advance of 2 lane/2 way operation to 300m beyond 2 lane/2 way operation

3.4 Placement of Traffic Control Devices

All Traffic control devices shall be placed in accordance with the approved Traffic Management Plan.

Non-portable signs and other fixed traffic control devices shall be installed prior to commencing work.

Portable signs and other temporary traffic control devices shall be positioned prior to commencing work in each work area and they shall be moved and maintained as the work progresses.

3.5 Maintenance of Traffic Control Devices

When the Contractor ceases operations due to darkness, weekends or weather conditions, or changes the method or sequence of operation, traffic control devices shall be checked and only those necessary to protect road users shall remain in place. During periods when they are not applicable, portable devices shall be removed from the roadway; non-portable devices shall be covered or removed.

Traffic control devices shall be monitored to ensure proper location, legibility and condition, and if necessary, shall immediately be properly repositioned, repaired or replaced.

3.6 Reflectivity

Signs, barricades and channelization devices shall be reflectorized to show the same colour and shape by night as by day. The reflective surfaces shall be cleaned or replaced as frequently as necessary to provide full reflectivity. Reflectorized signs will be acceptable if they are clearly visible when illuminated with normal vehicle lights on high beam from a distance of 150 metres.

Reflectivity must meet or exceed ASTM Type IV except for the Flagperson Ahead Sign (MC-64) and the Flagperson paddle (MC-44A and MC-44B) which must meet or exceed ASTM Type XI – Fluorescent.

3.7 Department Traffic Control Devices

Standard traffic control devices existing on the project prior to construction may have to be moved to facilitate the work or to comply with the approved Traffic Management Plan. The Contractor, on instruction from the Engineer, shall remove the devices and stockpile them carefully at an approved site.

Traffic control devices, when supplied to the Contractor by the Department, shall be returned in good condition when the work is completed.

The replacement cost of any traffic control device owned by the Department and which has been damaged or lost during handling by the Contractor shall be deducted from amounts payable to the Contractor.

### **3.8 Limitations on Lane Closures**

**Lane closures on highways shall be limited to the distances listed below unless otherwise identified in the Special Provisions.**

**On multi-lane divided highways, any single lane closure shall be restricted to 10km in length, unless otherwise approved by the Engineer.**

**On two-lane two-way highways, any single lane closure length shall be limited based on a maximum queue wait time of eight (8) minutes. At no time, shall any single lane closure exceed a length of 5km, unless otherwise approved by the Engineer.**

**Individual lane closures shall be separated by a minimum of 5km unless otherwise approved by the Engineer.**

**The Contractor shall, at their own cost, supply appropriate work zone traffic control including additional signs and flag persons at each intersecting roadway when lane closures encompass those intersections.**

## 200. 4. TRAFFIC CONTROL DEVICES

### 4.1 Gateway Assembly

Each end of the project shall be identified by a gateway assembly which shall be supplied, installed and maintained by the Contractor. The location of each gateway assembly will be in accordance with the approved Traffic Management Plan.

When gateway assemblies are not required or additional assemblies are required the number and location will be identified in the Special Provisions.

Unless otherwise directed, the Contractor shall remove the gateway assembly if work is discontinued for the winter.

### 4.2 Signs

The Contractor shall provide signs as shown on the approved Traffic Management Plan. All signs used shall be in accordance with the Work Zone Traffic Control Manual, the Manual of Uniform Traffic Control Devices for Canada or Provincial Regulations.

Department construction and maintenance projects will include the use of bilingual highway construction signs (English/French) on all Provincial Trunk Highways and Provincial Roads that lie within the "Bilingual Signing Area" in Manitoba. Generally, all highway construction signs with verbal messages will be affected. Where applicable, bilingual signing requirements will be identified in the Special Provisions of the tender document.

Portable signs shall be placed on the roadway clear of normal vehicular traffic, stand vertically and be pinned or anchored so that wind gusts will not topple the sign. The bottom of the sign shall be at least 600mm above the surface of the road.

The bottom of non-portable signs shall be at least 1,500mm above the surface of the road. With the exception of Gateway Assemblies, the edge of signs shall be clear of the highway shoulder line

by at least one metre, and shall be clear of the edge of curbed roadways by at least 300mm in urban areas and 600mm in rural areas.

Non-portable sign posts shall be wooden, capable of supporting the sign firmly at the required height and shall have a minimum nominal size of 100mm x 100mm.

In general, signs shall be positioned on the right-hand side of the road. When two or more adjacent lanes accommodate traffic travelling in the same direction, both non-portable and portable signs shall be positioned on both sides of the roadway.

Where bilingual signing is a requirement, the French sign shall be installed behind the English sign at a distance of approximately 30m.

#### 4.2.1 Designated Construction Zone Signage

All projects on provincial highways lasting longer than four hours shall be signed as a Designated Construction Zone (DCZ).

The beginning of the DCZ shall be identified with the 'Designated Construction Zone' sign. This sign shall be affixed to the gateway assembly located at the start of the work zone unless otherwise directed by the Engineer. The sign shall be located so that drivers have an unimpeded view of the sign.

The end of a DCZ shall be marked with the 'Construction Ends' sign. This sign shall be affixed to the gateway assembly located at the end of the work zone unless otherwise directed by the Engineer. The sign shall be located so that drivers have an unimpeded view of the sign.

At least one 'Speed Fines Double' sign must be placed within a DCZ and be no more than 150m after the 'Designated Construction Zone' sign which marks the beginning of the DCZ.

Additional 'Speed Fines Double' signs may be placed within the DCZ to heighten driver awareness. The sign may also be used to mark a portion of road within the DCZ that intersects with another roadway.

Bilingual Traffic Signing Areas shall be signed in both official languages.

#### 4.2.2 Construction Area Sign

The Construction Area sign shall be used in advance of work areas which are separated by more than 5 km from the Gateway Assembly or from other work areas.

For all projects with traffic control level II, III or IV, Construction Area signs are to be installed at the intersection of every Provincial Trunk Highway or Provincial Road. Construction Area signs may be required at other intersecting roadways that enter onto the project. These other roadways will be identified in the Special Provisions.

#### 4.2.3 Temporary Sign Stands

Temporary sign stands, when required, shall be supplied by the Contractor from the following recommended group:

- Flexmast Model PCC3648
- Quadra Flex Model QFVR
- Windmaster Model 4818
- Stellmaster Model 505M

Other acceptable equivalent sign stands will be permitted providing they meet the Specifications and are approved by the Safety Advisor in the Region in consultation with the Department's Traffic Engineering Branch.

#### 4.3 Barricades

A barricade shall consist of one or more similar barricade assemblies placed end to end. When required, barricades shall be reflectorized on both sides.

Class "A" Barricade Assemblies will generally be used to effect a lane or roadway closure and to signify the direction of the detour.

Class "B" Barricade Assemblies will generally be used to effect a complete lane or roadway closure.

Class "C" Barricade Assemblies will generally be used to taper a lane closure and to maintain a lane closure.

#### 4.4 Channelization Devices

Channelization devices shall be used when the traffic flow is impeded as a result of obstructions, work areas, or a reduction in the effective width of the roadway. They shall be used to supplement signs and barricades.

All channelization devices will be approved by the Department. They shall be designed to yield if struck by an errant vehicle, and shall conform to the specifications described herein in terms of size, shape, colour and reflectivity. Unless otherwise directed, only those delineators and channelizers specified in the Department's Work Zone Traffic Control Manual may be installed in a work zone.

##### 4.4.1 Construction Markers

Construction markers may be used to delineate obstructions above the ground, such as gravel windrows, and to delineate excavation areas below the ground level, such as bench cuts.

They shall be mounted on suitable supports, with the bottom of the marker being approximately 900mm above the road surface. They shall be spaced in accordance with the approved Traffic Management Plan.

##### 4.4.2 Polyposts

Polyposts may be used for separating opposing lanes of traffic or for protecting a work area that is parallel to the road. They shall be spaced in accordance with the approved Traffic Management Plan.

##### 4.4.3 Drums

Reflectorized plastic drums may be used to delineate a merging taper or a shoulder taper or to maintain a lane closure.

The Contractor shall provide ballast to prevent movement of the drums by the wind. Drums shall be spaced in accordance with the approved Traffic Management Plan.

##### 4.4.4 Traffic Cones

Traffic cones, when approved by the Engineer, may be used during daylight hours to guide or channel traffic through a work area.



#### 4.4.5 Sequential Flashers

A sequential flashing traffic control device (sequential flasher) shall be used in conjunction with other traffic control devices to close a single lane on a multi-lane highway. The Department will supply the sequential flasher for these lane closures.

The use of sequential flashers for any purpose other than lane closures on multi-lane highways is subject to the approval of the Engineer.

Sequential flashers approved for a use other than lane closures on multi-lane highways shall be supplied by the Contractor and shall be equivalent in size and visibility to the sequential flashers used by the Department.

Sequential flashers shall be located as shown on the approved Traffic Management Plan. In the event that a sequential flasher becomes inoperative, the Contractor shall ensure that adequate traffic control is maintained.

The Contractor shall place, move and maintain all sequential flashers in accordance with written instructions of the Department or supplier as the case may be.

#### 4.4.6 Rigid Channelization Devices

Rigid channelization devices such as concrete median barriers and Triton barriers may be required by the Engineer to channelize or separate traffic. When these types of devices are required, they will be supplied by the Department.

These devices shall be installed as shown on the approved Traffic Management Plan and in accordance with guidelines contained in the Work Zone Traffic Control Manual.

When "Triton" barriers are required to be in use during freezing temperatures, they shall be filled with a brine mixture (normally a 20% sodium chloride (salt), 80% water mixture). Where a brine mixture is required, the Department will supply the sodium chloride.

The Contractor shall notify the Engineer 48 hours in advance of the intended pick-up and delivery time of rigid channelization devices.

### 4.5 Other Devices

#### 4.5.1 Equipment Warning Lights

Equipment warning lights shall be installed on construction equipment and vehicles required to work or stop on the roadway, including service vehicles. Trucks hauling aggregate and earth moving equipment are exempted from this requirement.

The warning light flash shall be visible in daylight under normal atmospheric conditions for a distance of one kilometre. The light shall flash between 50 and 70 times per minute.

No direct payment will be made for providing equipment warning lights as the cost will be considered as being included in Contract bid items.

#### 4.5.2 Pavement Markers

Flexible vertical tabs called "temporary overlay markers" shall be used to delineate lanes of fresh pavement. The tabs shall be applied 100mm from centreline, at the following intervals:

- |                        |           |     |
|------------------------|-----------|-----|
| a) Other than top lift |           | 30m |
| b) On top lift         | -tangents | 20m |
|                        | -curves   | 10m |

The markers shall be applied accurately with reference to a string line or other suitable offset line, and always on the same side of centreline on top lift.

The markers shall be applied by the Contractor immediately after final rolling.

Markers shall be removed by the Contractor in advance of placing a new lift of pavement thereon. The markers shall be removed, collected and disposed of in a manner approved by the Engineer.

The markers shall be supplied by the Contractor and will be pre-approved by the Department prior to use.

#### 4.5.3 Pilot Vehicles

Pilot Vehicles, when listed as a bid item, shall be supplied by the Contractor.

Signs identifying the pilot vehicle shall be mounted above the roof of the vehicle, at least two metres above the ground, and clearly visible by road users from both the front and the back. The signs shall be illuminated during hours of darkness.

At least one equipment warning light shall be mounted to be clearly visible from all directions. It shall be in operation at all times that the vehicle is on duty.

**Pilot vehicles shall be operated only at times and locations permitted by the Engineer.**

#### 4.5.4 Variable Message Signs

A variable message sign (VMS) may be used as an enhancement to the other traffic control devices within the work zone. If the use of a VMS is required by the Engineer, the Department will supply the VMS.

**Where not required by the engineer, the contractor may propose to use VMS as an enhancement to their Traffic Management Plan (TMP). In these cases, the contractor shall supply and operate the VMS device which shall be equivalent in size and visibility to the VMS used by the Department.**

The VMS shall be located as shown on the approved TMP.

## 200. 5. WORK FORCE

### 5.1 Watchperson

The Contractor shall supply a watchperson who shall be available after traffic control devices have been positioned. When equipment is working the Contractor shall delegate one person to assume the duties of the watchperson. When the equipment is shut down the watchperson shall periodically patrol the work to ensure that traffic control devices are properly positioned, in good condition and that the roadway is in a safe condition for road users.

If required, specific inspection frequencies for watchpersons will be listed in the Special Provisions.

In the event that the unsafe condition cannot be physically repaired, the watchperson shall immediately make arrangements to correct the situation.

The Contractor shall register, with the local police force, the name and phone number of the watchpersons who can be contacted in the event of an emergency situation.

## 5.2 Flagperson

Each flagperson shall be trained, certified, and equipped in accordance with The Workplace Safety and Health Act (Manitoba) and associated regulations.

Unless otherwise permitted by the Engineer, the provision of Flagpersons are required under the following circumstances and will be considered incidental to the Contractor's lump sum price for the applicable Level of Traffic Control:

- For Level I and Level II Traffic Control where the contractor's operations cause the need for a Flagperson,
- For Level II Traffic Control where the work includes installing or removing through grade culverts or the operation of earth bridges,
- **For Level III and Level IV Traffic Control two flagpersons are required at each end of a work area where traffic will be stopped, including situations involving pilot vehicles:**
  - **One flagperson shall stop and hold the traffic.**
  - **A second flagperson shall provide advanced warning of any accumulating traffic queue (advanced warning flagperson).**
  - **For low traffic volumes, the requirement for advanced warning flagpersons may be waived which will be identified in the Contract Special Provisions, otherwise the requirement is in force.**
  - **Reasonable alternatives to the advanced warning flagperson requirement may be permitted at the sole discretion of the Engineer.**
- For activities and flagpersons identified in Sections **200.3.8**, 200.5.2.2, 200.5.2.3, 200.5.2.4 and 200.5.2.5, or;
- For specific locations identified in the contract Special Provisions.

Flagpersons may also be required at other areas which, in the opinion of the Engineer, are not adequately protected by traffic control devices. In these instances, Flagpersons will be paid for based on the Flagperson bid item (if available), or by Extra Work.

### 5.2.1 Relief Flagpersons

**The Contractor shall provide relief flagpersons at meal times and where ever necessary to give regular flagpersons relief from duty and prevent flagperson fatigue, in accordance with the Contractor's Workplace Safety and Health Program.**

### 5.2.2 Flagging for Temporary Overlay Marker Installation

**A worker installing temporary overlay markers (TOMS) must be accompanied by at least one flagperson, unless the activity is already being controlled by existing flagpersons.**

When required the flagperson should, at all times, be within 10 metres of the person installing the TOMS.

### 5.2.3 Flagging for String line Installation

**A worker installing a string line shall be accompanied by at least one flagperson, unless the activity is already being controlled by existing flagpersons.**

The flagperson should, at all times, be within 10 metres of the person installing the string line.

#### 5.2.4 Flagging Adjacent to Paving Operations

The Contractor shall provide a flagperson to accompany any self-propelled paver when it is operating on a **lane of the roadway which** is open to vehicular traffic. **Where the paver is operating in a closed lane, the flagperson will not be required.** The flagperson shall at all times be within 10 metres of the paver.

#### 5.2.5 Flagging Adjacent to Milling Operations

The Contractor shall provide a flagperson to accompany any milling equipment when it is operating on a **lane of the roadway which is** open to vehicular traffic. **Where the milling equipment is operating in a closed lane, the flagperson will not be required.** The flagperson shall at all times be within 10 metres of the milling equipment.

#### 5.2.6 Flagging Adjacent to Shoulder Operations

The Contractor shall provide a flagperson to accompany any hopper equipped mechanical spreader when it is operating on a **lane of the roadway which is** open to vehicular traffic. **Where the spreader is operating in a closed lane, the flagperson will not be required.** The flagperson shall at all times be within 10 metres of the mechanical spreader.

#### 5.2.7 Flagperson Ahead Sign

A Flagperson Ahead sign (MC-64) shall be placed in advance of any stationary flagperson.

The back of the Flagperson Ahead sign shall be visible to the flagperson at all times and should not be more than 500 metres from the flagperson.

#### 5.3 Traffic Control Coordinator

On Traffic Control, Levels IV the Contractor shall supply a Traffic Control Coordinator who has been certified in accordance with the Manitoba Heavy Construction Association's Traffic Control Coordinator Training Course or an equivalent training course.

The Traffic Control Coordinator shall not be assigned to duties other than Traffic Control and shall be responsible for:

- planning and coordinating traffic control with the Engineer
- organizing and supervising the movement and relief of flagpersons
- ensuring that flagpersons are properly informed with regard to changes in construction activities and road conditions and are relaying the proper information to road users and project staff
- installing and positioning traffic control devices, and moving or removing them as conditions change
- maintaining traffic control devices and ensuring that their reflective surfaces are clean

The Contractor shall have on site at least one vehicle containing a complete set of extra signs, wooden posts, a posthole auger and other necessary tools and supplies to enable the Traffic Control Coordinator to carry out these duties.

The Contractor shall provide mobile communication between the Traffic Control Coordinator's vehicle and a station or vehicle designated by the Engineer.

#### 5.4 Personal Protective Equipment

Every worker exposed to the hazard of vehicular traffic on a project site on a street, highway, or other roadway, shall be equipped with Personal Protective Equipment as required by the Workplace Safety and Health Act (Manitoba) and associated regulations, where applicable.

### 200. 6. DETOURS

#### 6.1 General

On all detours the Contractor shall supply, erect and maintain traffic control devices in accordance with the approved Traffic Management Plan.

If the Contractor requests and the Engineer approves the construction of a detour which is not specifically required by the Contract, all costs involved in constructing, signing, maintaining and removing the detour shall be at the expense of the Contractor.

The Contractor shall not move or remove any traffic control device relating to detours without the permission of the Engineer. The Contractor shall supply flagpersons as required until traffic control devices moved or removed by the Contractor have been restored.

#### 6.2 Roadside Detours

Roadside detours around bridge projects will be constructed and traffic control devices will be installed by the Department prior to the Bridge Contractor commencing work. The Contractor shall maintain all traffic control devices for the duration of the Contract. The Department will maintain the road surface.

When the Contract requires a roadside detour it shall be constructed at applicable unit prices. The Contractor shall maintain it. Traffic control devices shall be supplied, installed and maintained by the Contractor. The removal of the detour, if required, will be paid for as Extra Work.

#### 6.3 Route Detours

The Department will maintain traffic control devices which it has installed on route detours.

The portion of the highway included within the construction limits shall be closed to traffic except that the Contractor shall provide safe and adequate means of access to adjacent property. The Contractor shall maintain devices which he has installed.

### 200. 7. LEVELS OF TRAFFIC CONTROL

The bid item for Traffic Control will specify which Level of Traffic Control is applicable. The following summarizes the minimum requirements for each individual Level.

#### Level I

In accordance with the approved Traffic Management Plan, the Department will supply necessary traffic control devices and install non-portable signs. The Contractor shall erect portable signs, maintain all traffic control devices and provide;

- a watchperson

When detours are associated with the work, the Contractor shall barricade the area, as specified in Section 6.1.

Level II

In accordance with the approved Traffic Management Plan, the Contractor shall supply, install and maintain applicable signs, barricades and channelization devices and provide:

- gateway assemblies
- a watchperson

Level III

In accordance with the approved Traffic Management Plan, the Contractor shall supply, install and maintain applicable signs, barricades and channelization devices and provide:

- flagpersons
- gateway assemblies
- a watchperson

Level IV

In accordance with the approved Traffic Management Plan, the Contractor shall supply, install and maintain applicable signs, barricades and channelization devices and provide:

- a traffic control coordinator
- flagpersons
- gateway assemblies
- a watchperson

## 200. 8. ENFORCEMENT

The Contractor shall provide for the safe passage and control of traffic within the limits of the project.

If the Contractor fails to provide for the safe passage and control of traffic or fails to correct forthwith an unsatisfactory condition upon being so directed, the Engineer will suspend the work immediately. The Contractor shall not resume work until the Engineer is satisfied that the situation has been rectified and is safe for the road user.

If immediate action is required, the Engineer may correct the unsatisfactory condition and take such other action as he deems necessary to provide for the safe passage and control of traffic.

The Department will deduct, from progress payments, any cost or expense incurred by the Department as a result of taking corrective action. No act, or failure to act on the part of the Engineer, shall relieve the Contractor from his responsibilities.

## 200. 9. BASIS OF PAYMENT

## 9.1 Traffic Control

The lump sum price for providing the required level of traffic control will be compensation in full for performing all work and providing all items necessary or incidental thereto (including the provision of Flagpersons and bilingual signage as required by the Specification or the Special Provisions of the contract).

Forty percent of the lump sum price for Traffic Control will be paid on the first progress payment; thereafter payments will be made in increments of twenty percent when 50%, 75% and 100% of the contract work has been performed.

Traffic control devices or workforce required by the Engineer, in addition to those prescribed in the specific Level of Traffic Control, will be paid for on the basis of Extra Work.

#### 9.2 Pavement Markers

The unit price for each "Temporary Overlay Marker" will be payment in full for supplying and installing each marker and performing all work necessary or incidental thereto.

#### 9.3 Pilot Vehicle

The unit price for "Pilot Vehicle" will be the total amount paid to the Contractor for each hour a vehicle is operated and shall include the cost of supplying the vehicle, providing operators and flagmen, and supplying fuel, oil, grease and repairs necessary to keep the pilot vehicles operating in a safe and efficient manner.

#### 9.4 Flagperson

The unit price per hour for "Flagperson" will be payment in full for providing each flagperson when requested by the Engineer, including Personal Protective Equipment, training, all wages (including work breaks and other like employee benefits and payroll costs) and all operations necessary or incidental thereto for directing traffic safely through a hazardous area.

#### 9.5 Installation and Removal of "Triton" Barriers

"Installing and Removing "Triton" Barriers" will be paid on a linear metre basis of "Triton" barrier installed. This will be payment in full for loading, transporting, unloading, positioning, pinning together, filling with water and emptying the "Triton" Barriers as directed by the Engineer. When the barriers are no longer required, the Contractor shall return the barriers to their original location.

#### 9.6 Installation and Removal of Concrete Median Barriers

"Installing and Removing Concrete Median Barriers" will be paid on a linear metre basis of barrier installed. This will be payment in full for loading, transporting, unloading positioning and pinning together as directed by the Engineer. When the barriers are no longer required, the Contractor shall return the barriers to their original location.