



CONSTRUCTION SPECIFICATION FOR TEMPORARY TRAFFIC CONTROL DEVICES

TABLE OF CONTENTS

706.01	SCOPE
706.02	REFERENCES
706.03	DEFINITIONS
706.04	DESIGN AND SUBMISSION REQUIREMENTS
706.05	MATERIALS
706.06	EQUIPMENT - Not Used
706.07	CONSTRUCTION
706.08	QUALITY ASSURANCE - Not Used
706.09	MEASUREMENT FOR PAYMENT
706.10	BASIS OF PAYMENT

706.01	SCOPE
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This specification covers the requirements for the use of temporary traffic control devices during construction.

706.02	REFERENCES
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This specification refers to the following standards, specifications or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 703 Permanent Small Signs and Support Systems

Ontario Provincial Standard Specifications, Material

OPSS 2001 Signs

Ontario Ministry of Transportation Publications

Ontario Traffic Manual (OTM):
Book 7 - Temporary Conditions (Office and Field Editions)

Designated Sources for Materials (DSM)

706.03 DEFINITIONS

Temporary Traffic Control Signs means all traffic control signs and associated devices identified in OTM Book 7, including vehicles and sign trailers required to support signs and equipment to supply sign lighting; but excludes highway number markers.

Small Sign means small sign as defined in OPSS 703.

706.04 DESIGN AND SUBMISSION REQUIREMENTS

A copy of the traffic control plan shall be submitted to the Contract Administrator at the pre-work meeting.

706.05 MATERIALS

706.05.01 Retroreflective Sheeting

Retroreflective sheeting shall be according to OPSS 2001.

706.05.02 Automated Flagger Assistance Devices

Automated flagger assistance devices (AFAD) shall be according to OTM Book 7.

706.05.03 Temporary Traffic Control Signs

Temporary traffic control signs shall be according to OTM Book 7.

706.05.04 Portable Variable Message Signs

Portable variable message signs (PVMS) shall be supplied from a source named on the ministry's DSM.

706.05.04.01 Modem

Modem requirements for PVMS shall be as specified in the Contract Documents.

706.07 CONSTRUCTION

706.07.01 Temporary Traffic Control Signs

706.07.01.01 General

The work of temporary traffic control signs shall include:

- a) Installation and relocation according to OTM Book 7 unless otherwise specified in the Contract Documents.
- b) Temporarily relocating, modifying as required, and reinstalling existing small signs.
- c) Installing and removing contract information signs.
- d) Installing and removing Speed Fines Doubled (TC-90) signs.

Messaging for all temporary traffic control signs shall be according to OTM Book 7 unless otherwise specified in the Contract Documents.

When a Contract is in a designated bilingual area, bilingual temporary traffic control signs shall be installed. If a bilingual temporary traffic control sign is not available, then the French temporary traffic control sign shall be installed. A French Construction Zone Begins sign (Rb-90AF) and a French Construction Zone Ends sign (Rb-90BF) shall be installed next to the corresponding English Rb-90A and Rb-90B signs. All other French temporary traffic control signs shall be installed 150 m downstream from the English sign.

Temporary traffic control signs shall be installed before work affecting traffic begins, remain operational throughout the duration of the operation requiring signs and be removed upon completion of the operation.

Prior to seasonal shutdown, temporary traffic control signs shall be reviewed and signs that are not required during the seasonal shutdown period shall be removed. At the end of the seasonal shutdown period, the removed signs shall be reinstalled as required.

The condition of the temporary traffic control signs shall meet the quality replacement guidelines specified in OTM Book 7 for the duration of the Work. Signs that do not meet the guidelines shall be removed and replaced.

706.07.01.02 Existing Small Signs

Any existing small signs, excluding Tourism-Oriented Directional Signing and Logo Sign Program signs, removed to accommodate construction shall be kept operational by placement on a temporary support. Temporarily relocated existing small signs shall be kept at the same height, offset and approximate location from traffic as before relocation. All existing small signs shall be reinstalled, at or as close as possible to the original location, according to OPSS 703 upon completion of the Work.

Temporary modifications to existing small signs shall be according to OTM Book 7 unless otherwise specified in the Contract Documents.

706.07.01.03 Contract Information Signs

Contract information signs shall be installed according to OTM Book 7 and removed upon completion of the Work. Contract information signs shall be either a TC-81 sign or an Owner supplied contract information sign.

Owner supplied contract information signs shall be picked up at the location specified in the Contract Documents. The Contractor shall arrange for the pickup of the signs. At Contract Completion, Owner supplied contract information signs shall be returned to the Owner at a location specified by the Contract Administrator.

706.07.02 Road Closing/Restriction Notice Sign (TC-64)

Road closing/restriction notice (TC-64) signs shall be installed and relocated at locations specified in the Contract Documents. Timing requirements for TC-64 signs shall be as specified in OTM Book 7.

The Contract Administrator shall be notified when the Contractor's operations results in changes to the TC-64 sign message details (i.e., dates, times, etc.).

706.07.03 Automated Flagger Assistance Devices

AFAD shall be installed, relocated and removed at locations as specified in the Contract Documents.

If the closure extends across an entrance or side road, a traffic control person shall also be present to direct traffic with a stop/slow paddle according to OTM Book 7.

706.07.04 Portable Variable Message Sign

Installation, including the construction of a temporary base, relocation, and messaging on the PVMS shall be as specified in the Contract Documents. The exact location of the PVMS shall be proposed by the Contractor and shall meet the following criteria:

- a) Maximizes visibility for motorists without impacting safety in accordance with the ministry's clear zone requirements.
- b) Installed on a level surface with adequate bearing capacity to support the weight of the PVMS and temporary base materials.

The Contract Administrator shall approve the location of the PVMS prior to it being deployed. The Contractor Administrator shall be notified at least 2 Business days in advance regarding the delivery, relocation, and removal of PVMS within the construction work zone.

Modem installation, testing, and decommissioning for the PVMS shall be as specified in the Contract Documents.

The PVMS control box shall be secured from entry by unauthorized personnel. There shall be security measures or devices in place to prevent message tampering of the sign.

All PVMS and any temporary base shall be removed upon completion of the Work.

706.07.04.01 Maintenance of Portable Variable Message Sign

Maintenance shall be performed for the continuous operation of the PVMS, as required, throughout the duration of the Contract. Daily inspection of the PVMS shall be conducted to ensure that the PVMS meets the following maintenance requirements:

- a) PVMS sign face is aimed with the sign sight tube to the center of the approach roadway approximately 200m upstream of the sign to ensure maximum visibility.
- b) Solar panels are tilted and rotated to face south.
- c) All pixels and LEDs in the sign face remain operational.
- d) Sign is elevated to its maximum height with the locking pin in place; sign face is to be regularly cleaned from dirt, road salt or debris that may obstruct the visibility of the sign.
- e) Batteries are replaced as needed to ensure that battery levels are maintained per the supplier's operational requirements.
- f) Modems and other remote communications equipment remain operational.

Immediate repairs shall be required whenever there is a failure or cessation of the operation of any component or components of the PVMS. The Contract Administrator shall be notified immediately each time repair work is performed on a PVMS.

706.07.05 Freeway Paving Operations

When paving on a freeway within 3 m of a travelled lane open to traffic with no barrier designed to restrain errant vehicles between the paving operation and traffic, the following protection measures shall be applied:

- a) A temporary regulatory speed reduction of 20 km/hr less than the normal posted regulatory speed (NPRS) shall be implemented during the paving operation. All signing shall be according to OTM Book 7. All existing NPRS signs within the reduced speed zone shall be covered while the temporary regulatory speed

reduction signs are in use. The existing NPRS signs shall be restored when the reduced speed zone is not required and the temporary regulatory speed reduction signs shall be covered.

- b) When a temporary regulatory speed reduction is in effect, a portable variable message sign (PVMS) shall be placed in advance of the first Maximum Speed Ahead signs at a location to be provided by the CA. If the Contract is in a bilingual area, an additional PVMS sign shall be deployed for the approved equivalent French message at least 150 m after the English PVMS. PVMS locations shall be verified to be legible to approaching motorists for at least 300 m and not be obstructed by existing signing or other obstructions. PVMS message details shall be as directed by the Contract Administrator.

When there is only a single lane open to traffic that is adjacent to the paving operation, the use of pace vehicles is permitted to limit the speed of traffic to that of the temporary regulatory speed reduction. The use of pace vehicles shall be according to OTM Book 7.

706.07.06 Management of Excess Materials

Management of excess materials shall be according to the Contract Documents.

706.09 MEASUREMENT FOR PAYMENT

706.09.01 Actual Measurement

706.09.01.01 Automated Flagger Assistance Devices

For measurement purposes, a count shall be made of the number of AFAD installed.

706.09.01.02 Portable Variable Message Sign (Temporary)

For measurement purposes, a count shall be made of the number of PVMS installed.

706.09.01.03 Portable Variable Message Sign, Relocation

For measurement purposes, a count shall be made of the number of PVMS relocated.
PVMS that are temporarily surplus for intermediate stages but will be required later shall be paid as one relocation for the combined moves into and out of the site storage, including any off-site storage required due to space restrictions.

706.09.01.04 Road Closing/Restriction Notice Signs (TC-64)

For measurement purposes, a count shall be made of the number of TC-64 signs installed.

706.09.02 Plan Quantity Measurement

When measurement is by Plan Quantity, such measurement shall be based on the units shown in the clause under Actual Measurement.

706.10 BASIS OF PAYMENT

706.10.01 Automated Flagger Assistance Devices - Item Portable Variable Message Sign (Temporary) - Item Portable Variable Message Sign, Relocation - Item

Payment at the Contract price for the above item shall be full compensation for all labour, Equipment, and Material to do the work.

706.10.02 Temporary Traffic Control Signs - Item

Payment at the Contract price for the above item shall be full compensation for all labour, Equipment, and Material to do the work.

For progress payment, fifty percent of the Contract price shall be paid upon the supply and installation of the complete initial traffic control plan. The balance will be prorated over the balance of the Contract Time.

Reinstallation of temporary traffic control signs after seasonal shutdown shall be at no additional cost to the Owner.

706.10.03 Road Closing/Restriction Notice Signs (TC-64) - Item

Payment at the Contract price for the above item shall be full compensation for all labour, Equipment, and Material to do the work.

Changes to the TC-64 sign message details (i.e., dates, times, etc.) required as a result of the Contractor's operations shall be completed at no additional cost to the Owner.

Progress payments shall be made as follows:

- 60% of the unit price per sign upon installation;
- 20% of the unit price per sign upon relocation;
- 20% of the unit price per sign upon removal.

If no relocation is required:

- 60% of the unit price per sign upon installation;
- 40% of the unit price per sign upon removal.

On each occasion when the Contractor fails to install the TC-64 signs according to the requirements of this specification, or fails to remove the TC-64 signs within two hours of re-opening of the affected roadway, a payment reduction of \$2,000.00 shall be assessed. A further payment reduction of \$2,000.00 per Day, or part thereof, with no maximum payment reduction, shall be assessed until such time as the TC-64 signs are removed.

706.10.04 Removals and Replacements

The removal and replacement of defective workmanship or materials shall be at no additional cost to the Owner.

706.10.05 Freeway Paving Operations

The protection measures specified for freeway paving operations shall be at no additional cost to the Owner.