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7.1 TEMPORARY CONSTRUCTION SIGNING

7.1.1 GENERAL

This specification covers the installation, maintenance and removal of temporary signing and traffic control devices which are specifically related to construction, repair or emergency situations and which are generally removed when the Work is completed or the situation returns to normal. Permanent signing for normal use of the roadway is covered in Specification 7.7, Permanent Highway Signing.

7.1.2 TYPICAL DRAWINGS

The typical drawings for temporary construction signing are contained in Section II of the Department manual entitled Traffic Accommodation in Work Zones.

7.1.3 MATERIALS

The Contractor shall supply all signing materials including sign posts, weighted stands, brackets and any required mounting hardware and miscellaneous materials required for the erection of temporary construction signs.

All signs, barricades and other traffic control devices shall conform to the requirements for shape, colour and size specified in Section IV of the Department manual entitled "Traffic Accommodation in Work Zones. The orange portion of all signs, barricades and other traffic control devices shall be fully reflectorized using High Brightness, Retroreflective, Non-Metallized, Prismatic Sheeting Material which incorporates durable, transparent, flourescent pigment and meets the following requirements.

BRIGHTNESS REQUIREMENTS (90° Rotation Angle)		
Observation Angle	Entrance Angle	Orange
0.2	-4	200
0.2	+30	92
0.5	-4	80
0.5	+30	50
A Minimum Coefficient of Retroreflection (R_A) cd/ft^2 ($cd \cdot lx^{-1} \cdot m^{-2}$)		

All other colours of sheeting material shall be Type III, High Intensity retroreflective sheeting meeting the requirements of ASTM D4956.

Larger construction signs or oversized signs may be used where conditions require greater visibility in order to be effective. They shall be used in special circumstances where more than average attention value is required from the sign.

7.1.4 EQUIPMENT

The Contractor shall supply all equipment required to complete the Work.

7.1.5 TRAFFIC ACCOMMODATION STRATEGY

The Contractor shall prepare a Traffic Accommodation Strategy detailing the measures he proposes for accommodating traffic throughout the project.

The Traffic Accommodation Strategy shall consist of drawings detailing the configuration of temporary construction signs and other traffic control devices in the work zone(s) and, written confirmation of the methods or procedures being used by the Contractor to address specific traffic safety related issues or situations at the work zone. Additional details concerning the requirements of the traffic accommodation strategy are contained in the Department manual "Traffic Accommodation in Work Zones".

The Contractor shall submit the Traffic Accommodation Strategy to the Consultant 14 days prior to the pre-construction meeting for the project or to a schedule as agreed upon by the Consultant. The Consultant will review the Traffic Accommodation Strategy and communicate any concerns to the Contractor within 7 days of the pre-construction meeting. Any issues or concerns regarding the Contractor's proposed Traffic Accommodation Strategy shall be addressed to the mutual satisfaction of the Contractor and the Consultant prior to the commencement of the Work.

7.1.6 MONITORING TRAFFIC ACCOMMODATION AT THE WORK ZONE

To ensure the traffic accommodation strategy is performing as intended, the Contractor shall monitor and maintain traffic accommodation at the work zone on a regular basis. The Contractor shall designate a specific individual to perform this function to ensure any issues arising are addressed in a consistent and timely manner. Such individuals must be knowledgeable in the process and procedures for accommodating traffic including the use of all types of devices. The Contractor shall identify the individual to the Consultant and Department at the pre-construction meeting.

7.1.7 ERECTION OF SIGNS

Work on the project shall not commence until all necessary temporary construction signs and all other traffic control devices as proposed in the traffic accommodation strategy are in place.

When signs require frequent moves, portable type signs, mounted on weighted stands, may be used. Portable signs shall be placed on the shoulder of the road such that the face of the sign is fully visible to oncoming traffic and the bottom of the sign is not less than 0.3 m above the road surface. The stands shall be securely weighted and erected to ensure against being blown over by prevailing winds or gusts from passing vehicles.

Non-portable signs shall be conspicuously posted, and erected at right angles to the roadway, with the bottom of the sign at a height of 1.5 m above the roadway surface, and not less than 2 m nor more than 6.0 m from the nearest traffic lane.

Traffic signs and devices shall be moved and kept as close to the work area as practical, as construction proceeds.

Objects within or immediately adjacent to the roadway which constitute a hazard to traffic shall be marked with alternating black and orange stripes attached directly to the object or erected immediately in front of it.

The use of signs shall be held to a minimum to prevent confusion.

"STOP" signs shall be installed on all subsidiary roads (local, district, municipal, service or approach) intersecting a primary highway detour route.

Speed zones, where required, shall be posted as indicated on the applicable drawing contained in the Traffic Accommodation in Work Zones manual.

7.1.8 MAINTENANCE AND REMOVAL OF SIGNS

Poorly maintained, defaced, damaged or dirty construction signs shall be replaced, repaired or cleaned without delay. Special care must be taken to ensure that construction materials and dust are not allowed to obscure the face of a sign.

Signs not in effect shall be covered or removed and all construction signs shall be removed after the project is completed.

7.1.9 MODIFICATIONS TO TEMPORARY CONSTRUCTION SIGNING

The Contractor shall be totally responsible for the supply and proper placement of temporary construction signs. However, in the case of potential danger to the travelling public or other circumstances where the Consultant determines that signing is inadequate, the Consultant will require changes to the Contractor's operations to remedy the situation. These changes may involve the use of different types and/or sizes of signs, modifying the number or locations of signs, and any other modifications or additions required to protect the safety of the travelling public.

7.1.10 DAILY RECORDING OF TEMPORARY CONSTRUCTION SIGNING

Each day and as the work area changes, the Contractor shall record the location of all temporary construction signs and any other traffic control devices used at the work areas. The Contractor shall record this information on a form suitable to the Consultant and shall submit it to the Consultant on a weekly basis or when requested.

7.1.11 COMPLIANCE

In cases where the Contractor is not in compliance with the specifications and, in the opinion of the Consultant there is imminent danger to the travelling public, the Consultant has the authority to order the immediate suspension of Work. Such orders must be made in writing.

In other cases where the Contractor is not in compliance with the specifications but, in the opinion of the Consultant the infraction is not causing imminent danger to the travelling public, the Consultant will use the following escalating process to address the situation:

- (i) Issue verbal instructions requiring the Contractor to correct the infraction
- (ii) Issue a written warning instructing the Contractor to correct the infraction
- (iii) Issue a written order instructing the Contractor to suspend Work until the infraction is corrected to the satisfaction of the Consultant.

7.1.12 MEASUREMENT AND PAYMENT

7.1.12.1 **General**

The supply, installation, maintenance and removal of temporary construction signing or other traffic control devices, including any modifications requested by the Consultant, will be considered incidental to the Work and will not be paid for separately.

The preparation of the Traffic Accommodation Strategy and the daily recording of temporary construction signing will also be considered incidental to the Work and will not be paid for separately.

7.1.12.2 **Bonus and Penalty Assessment**

The Contractor will be assessed a \$ 250 penalty for each written warning to correct an infraction issued by the Consultant. (Stage 2 of escalation process)

The Contractor will be assessed a \$ 1000 penalty for each written order to suspend Work issued by the Consultant. (Stage 3 of escalation process or in cases of immediate suspension of Work due to imminent danger)

If neither of the following has occurred prior to the issuance of the Construction Completion Certificate:

- written orders to suspend Work or written warnings issued by the Consultant or
- written orders to suspend Work issued by the Department,

the Contractor will receive a lump sum \$ 2000 payment.