



**CONSTRUCTION SPECIFICATION FOR
ELECTRICAL TRAFFIC CONTROL DEVICES**

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621.01 SCOPE

This specification covers the requirements for the installation of traffic control devices including flasher beacons, flasher mechanisms, downlights, sign light assemblies and internally illuminated signs.

621.02 REFERENCES

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

Ontario Provincial Standard Specifications, Construction

OPSS 604	Installation of Cable
OPSS 609	Grounding
OPSS 610	Removal of Electrical Equipment and Materials
OPSS 620	Traffic Signal Equipment

Ontario Provincial Standard Specifications, Material

OPSS 2461 Signal Heads

CSA Standards

C22.2 No. 45.1-07 (R2012)	Electrical Rigid Metal Conduit - Steel (Tri-National standard, with UL 6 and NMX-J-534-ANCE-2007)
C22.2 No. 45.2-08 (R2013)	Electrical Rigid Metal Conduit - Aluminum, red brass, and stainless steel (Tri-national standard, with NMX-J-576-ANCE and UL 6A)
C22.2 No. 207-15	Portable and Stationary Electric Signs and Displays
C22.2 No. 85-14	Rigid PVC Boxes and Fittings
C22.2 No. 211.2-06 (R2011)	Rigid PVC (Unplasticized) Conduit

621.05 MATERIALS

621.05.01 Flasher Beacons

Flasher beacons shall be according to OPSS 2461.

Each flasher beacon that provides intersection control and each red flasher beacon shall be 300 mm diameter unless otherwise indicated in the Contract Documents.

621.05.02 Lamps and LED Modules

Lamps and LED modules shall be according to OPSS 2461.

621.05.03 Internally Illuminated Signs

Internally illuminated signs shall be according to the general requirements of CSA C22.2 No. 207 and as specified in the Contract Documents.

621.05.04 Cable

Cables shall be according to OPSS 604.

621.05.05 Connectors

Connectors shall be according to OPSS 604 and OPSS 609.

621.05.06 Conduit and Fittings

Rigid PVC conduit and fittings shall be according to CSA C22.2 No. 211.2.

Rigid galvanized steel conduit and fittings shall be according to CSA C22.2 No. 45.1.

Rigid aluminum conduit and fittings shall be according to CSA C22.2 No. 45.2.

621.05.07 Junction Boxes and Fittings

Junction boxes and fittings shall be according to CSA C22.2 No. 85.

621.05.08 Grounding Materials

Grounding materials shall be according to OPSS 609.

621.07 CONSTRUCTION

621.07.01 Flasher Beacons and Downlights

Flasher beacons and downlights for post top mounting shall be aligned facing the direction of approaching traffic and secured with set screws tightened to bite into the pole top tenon by approximately 1 mm.

Flasher beacons for pole front or side mounting shall be aligned facing the direction of approaching traffic and mounted on double arm brackets or mast arms and signal hangers according to OPSS 620.

Flasher beacons, single or in multiple clusters, for aerial mounting shall be arranged on the overhead support cable to provide the required visibility and clearances for each direction of approaching traffic. Mounting hardware shall be securely tightened.

621.07.02 Flasher Mechanisms

Flasher mechanisms shall be mounted on poles or in enclosures with the accompanying conduit, conduit fittings and wiring systems.

621.07.03 Sign Light Assemblies

Sign light assemblies shall be constructed of rigid aluminum conduit and fittings, lamp holders and lamps and shall be installed facing the direction of approaching traffic. Lengths of conduit shall be secured against fittings with lock nuts.

621.07.04 Internally Illuminated Signs

Internally illuminated signs shall be installed on double arm brackets, mast arms and signal hangers or aerial support cables according to OPSS 620.

621.07.05 Wiring

Wiring between the traffic control device and the pole handhole or pole mounted junction box shall be installed and connected according to OPSS 620.

621.07.06 Grounding

Traffic control devices shall be grounded according to OPSS 609.

621.07.07 Removals

Removal of traffic control devices necessary for the installation of work described herein shall be according to OPSS 610.

621.07.08 Quality Control

Pre-installation Testing and Inspection (PIT)

Traffic control devices and connection components shall be inspected prior to installation to ensure that they meet the requirements of the Contract Documents.

Proof of Performance Testing and Inspection (POP)

The work shall be inspected and tested to ensure that it meets the requirements of the Contract Documents; and, without limiting the foregoing, the work shall be inspected to ensure the following:

- a) All components are installed, tested and proven as specified in the Contract Documents
- b) All cables are energized and in working order prior to activating the flasher beacons for public display.

The testing and inspection results shall be documented in a report and submitted to the Contract Administrator within 3 Days of completion of the testing and inspection.

621.09 MEASUREMENT FOR PAYMENT

621.09.01 Actual Measurement

- 621.09.01.01 Flasher Beacons**
- Flasher Beacons and Downlights**
- Sign Light Assemblies for Keep Right Signs**
- Internally Illuminated Signs**
- Flasher Mechanisms**

For measurement purposes, a count shall be made of the number of flasher beacons and downlight combinations, flasher beacons, flasher mechanisms, sign light assemblies and internally illuminated signs installed.

621.09.02 Plan Quantity Measurement

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

621.10 BASIS OF PAYMENT

- 621.10.01 Flasher Beacons - Item**
- Flasher Beacons and Downlights - Item**
- Sign Light Assemblies for Keep Right Signs - Item**
- Internally Illuminated Signs - Item**
- Flasher Mechanisms – Item**

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

When the Contract contains a separate item for the Removal of Electrical Equipment, payment shall be at the Contract price and according to OPSS 610.