



MODIFIED BY EI 95-003 EFFECTIVE 1/18/95 SUPERSEDED BY EB 00-009 EFFECTIVE 1/24/00		ENGINEERING INSTRUCTION <i>New York State Department of Transportation</i>	95-004 <hr/> Supersedes:
Title: Maintenance and Protection of Traffic During Nighttime Operations - Revision to Section 619 of the Standard Specifications			
Distribution: <input checked="" type="checkbox"/> Main Office(30) <input checked="" type="checkbox"/> Local Gov.(31) <input checked="" type="checkbox"/> Regions(32) <input checked="" type="checkbox"/> Contractors/AGC(39) <input checked="" type="checkbox"/> Consultants(34) <input type="checkbox"/> _____ ()	Approved:  <hr/> Philip J. Clark 1/13/95 Deputy Chief Engineer (Design) Date		

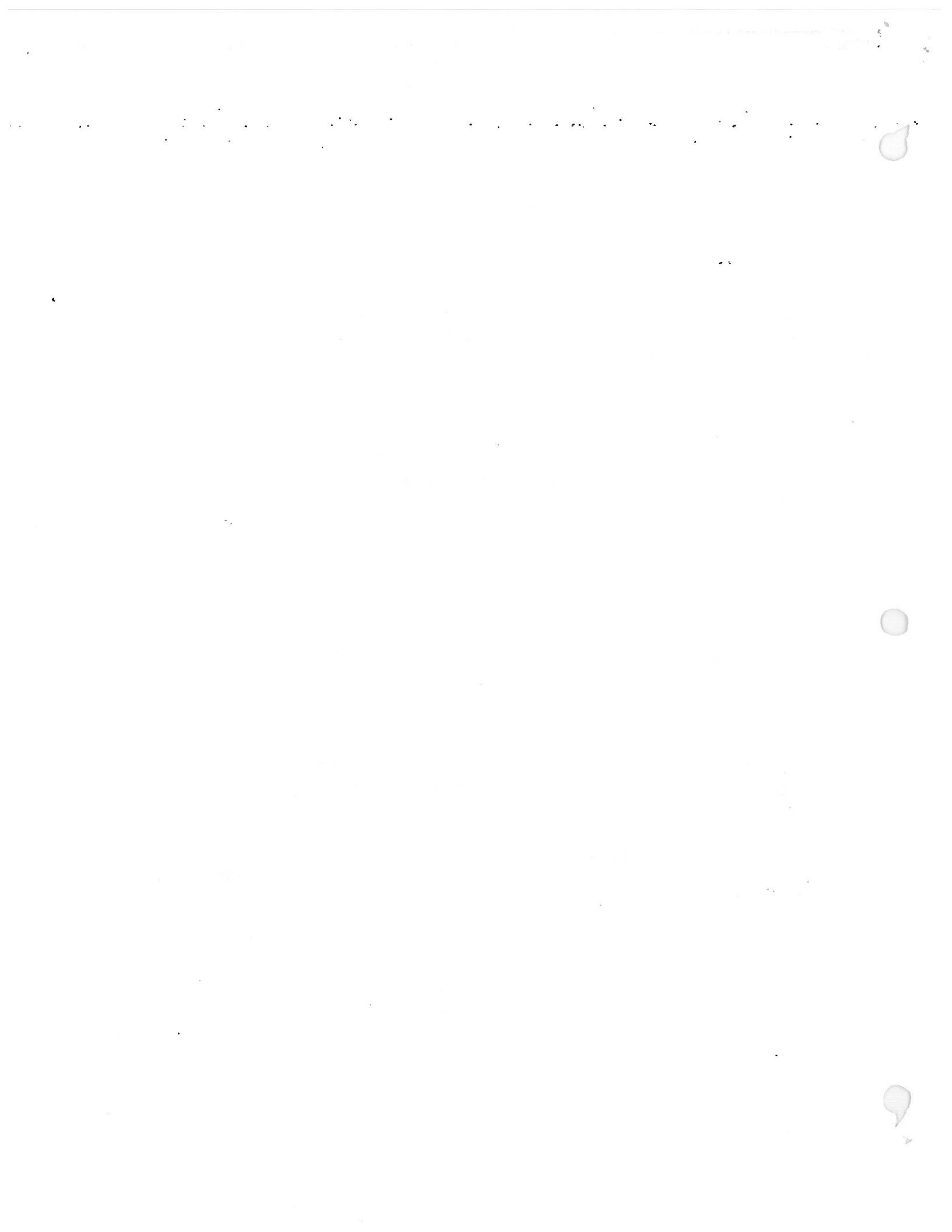
Attached are metric and non-metric versions of a shelf note revising Section 619 of the Standard Specifications. The note adds new sections 619-1.15 and 619-3.13 dealing with maintenance and protection of traffic during nighttime operations.

The non-metric note will be added to all projects containing item 619.01, Basic Maintenance and Protection of Traffic beginning with the letting of May 25, 1995. The metric version will be included in all projects containing item 619.01 M beginning with the letting of June 15, 1995.

Regions with projects in an earlier letting which require or anticipate large-scale nighttime operations are encouraged to request the Design Quality Assurance Bureau to add the note by amendment.

Guidelines for Design and Construction staff related to "Maintenance and Protection of Traffic During Nighttime Construction" and a special specification, "Lighting for Nighttime Operations", are being issued concurrently in separate Engineering Instructions (EI 95-003 and EI 95-005).

Questions on this Engineering Instruction may be directed to Jim Bryden of the Construction Division at (518) 485-1834 or to Steve Witham of the Design Quality Assurance Bureau at (518) 457-7284.



MAINTENANCE AND PROTECTION OF TRAFFIC DURING NIGHTTIME OPERATIONS

Make the following changes to the Standard Specifications of January 2, 1990.

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Under §619-1 DESCRIPTION, add the following after §619-1.14 Removable Reflectorized Pavement Markings:

"619-1.15 Maintenance and Protection of Traffic During Nighttime Operations. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise. In addition to the requirements of basic maintenance and protection of traffic, additional requirements for maintenance and protection of traffic during nighttime operations shall be as follows:

A. Traffic Control Supervision. The Contractor shall provide a full-time traffic control supervisor for nighttime operations with adequate training, experience, and authority to implement and maintain all traffic control operations. The traffic control supervisor must be approved by the Engineer based on a written request by the Contractor detailing the training and experience of the traffic control supervisor. The traffic control supervisor shall be assisted by a full-time traffic control crew equipped with a suitable vehicle or vehicles and a mobile communications system consisting of radios or cellular phones. The duties and responsibilities of the traffic control supervisor shall be included in the plan of nighttime operations. During setup and removal of lane closures and other traffic control setups, the traffic control supervisor and crew shall be assisted by additional workers as necessary.

B. Plan of Nighttime Operations. Thirty days prior to the start of night work, the contractor shall submit a written plan for nighttime operations to the Engineer. The plan shall detail all aspects of the traffic control setup; lighting plans; the functions, responsibilities and identities of the traffic control supervisor and crew; and other details as necessary. It shall include a contingency plan identifying foreseeable problems and emergencies that may arise, and the approach that will be used to address them. This plan shall be revised and updated by the contractor as necessary during the progress of the work to accommodate actual conditions on the project.

C. Project Site Patrol. During nighttime operations, the traffic control supervisor and crew shall constantly patrol the contract area to ensure that conditions on the site are adequate for public safety and convenience at all times, to ensure worker safety from intrusions into the worksite, and to ensure that the provisions for maintenance and protection of traffic in the contract documents and in the plan for nighttime operations are adhered to. The traffic control crew shall maintain and adjust signs, channelizing devices, area lighting and other traffic control devices as necessary.

D. Waiver of Requirements. When the work does not require closure of an active lane, roadway, or ramp and when no construction operations occur adjacent to active traffic lanes; the requirements for a full-time traffic control supervisor and full-time project site patrol shall be waived. However, the contractor shall provide a competent supervisor and workers to install, maintain, adjust, and remove traffic control devices as required by the work operations. The details of the supervision and site patrol to be provided under this waiver shall be included in the plan of nighttime operations.

E. Trained Flaggers. All flaggers used in nighttime operations shall be formally trained in flagging operations. This training may consist of ATSSA (American Traffic Safety Services Association), Union, or trade association training, or training by an individual who has received formal training from a recognized program or agency in work zone traffic control. Prior to the start of work, the contractor shall provide the Engineer with a written summary of training for each individual flagger. When requested by the Engineer, flaggers shall demonstrate their competency in flagging procedures. Flaggers not thoroughly competent in flagging procedures to the satisfaction of the Engineer shall be replaced at once.

F. Emergency Flares. A supply of emergency flares shall be maintained by the Contractor for use in the event of unanticipated situations such as traffic accidents, equipment breakdowns, failure of lighting equipment, etc."

Under §619-3 CONSTRUCTION DETAILS, add the following after §619-3.12 Removable Reflectorized Pavement Markings:

"619-3.13 Maintenance and Protection of Traffic During Nighttime Operations. In addition to the requirements of basic maintenance and protection of traffic, additional requirements for maintenance and protection of traffic during nighttime operations shall be as follows:

A. Worker Protection. All workers involved in nighttime operations shall, at all times, wear reflective hard hats and vests or high visibility apparel as described below:

1. Hard hats shall be equipped with a minimum of 12 square inches of reflective tape on all four sides (i.e. 3 square inches per side).
2. Vests and high visibility apparel shall be orange, yellow, or strong yellow-green in color or fluorescent versions of these colors (flaggers shall wear orange) and shall include retroreflective material, white or silver in color, visible for a minimum of 1000 feet in all directions under headlight illumination.
3. Retroreflective clothing shall be designed to clearly identify the wearer as a person and shall be visible through a full range of body motions.
4. Retroreflective clothing and vests shall be closed front and rear. Open front vests shall not be permitted.
5. All retroreflective clothing and vests shall be in clean condition or replaced as necessary to maintain visibility and reflectivity.

These requirements apply to truck drivers and equipment operators when out of an enclosed cab.

B. Vehicle Protection. All vehicles and equipment in the traffic control zone shall be equipped with rotating amber beacons which shall be visible from all directions for a minimum of 1000 feet during daylight. Beacons shall be mounted in a manner which does not cause glare for the driver or operator.

Vehicles operating or parked on the pavement of a closed roadway or travel lane shall display 4-way flashers or beacons at all times.

Rollers shall display a 2-inch band of reflective tape on the front and rear (100 square inches per end minimum).

All trucks shall display a minimum of 100 square inches of reflective tape on the rear.

Haul trucks shall display a 2 foot by 4 foot orange reflective sign with the legend "Construction Vehicle - Do Not Follow" in black lettering on the tailgate.

All construction equipment when moving at a speed below the operating speed of traffic in an open travel lane or on a shoulder adjacent to an open travel lane shall be equipped with an amber rotating beacon and shall be followed by a chase vehicle equipped with an amber rotating beacon and 4-way flashers.

Vehicles (except for rollers) shall travel facing in the same direction as adjacent traffic in order to avoid glare and confusion to drivers.

C. Signs, Delineation and Guiding Devices. All signs, delineators and guiding devices for nighttime operations shall be kept clean and visible with good reflectivity.

Type III construction barricades shall be used whenever an entire roadway or ramp is closed to traffic.

Plastic drums or 12" by 24" vertical panels shall be used for channelizing and delineating lane closures. Oversize (36") cones may be used on tangent runs beyond the completion of the lane closure tapers. Spacing shall be in accordance with the following:

Estimated Operating Speed (mph)	Maximum Spacing (feet)
20	20
30	30
≥40	40

Delineation at gores or intersections shall be spaced at intervals equal to one-half of the above table values and shall consist of plastic drums or 12" by 24" vertical panels except that every other device may be an oversize (36") cone at the Contractor's option.

When traffic will be traveling adjacent to closed travel lanes; two plastic drums, two 12" by 24" vertical panels or two oversize (36") cones shall be placed transversely in each closed lane at 750 foot maximum intervals (unless a lesser spacing is shown on the plans) except where it would interfere with paving, rolling or other ongoing operations. A Type III construction barricade may be substituted at the Contractor's option. No additional payment for Type III construction barricades will be made when used for this purpose.



MAINTENANCE AND PROTECTION OF TRAFFIC DURING NIGHTTIME OPERATIONS

Make the following changes to the Standard Specifications of January 2, 1995.

Page 6-54

Under §619-1 DESCRIPTION, *add* the following after §619-1.14 Removable Reflectorized Pavement Markings:

"619-1.15 Maintenance and Protection of Traffic During Nighttime Operations. Nighttime operations consists of work specifically scheduled to occur after sunset and before sunrise. In addition to the requirements of basic maintenance and protection of traffic, additional requirements for maintenance and protection of traffic during nighttime operations shall be as follows:

A. Traffic Control Supervision. The Contractor shall provide a full-time traffic control supervisor for nighttime operations with adequate training, experience, and authority to implement and maintain all traffic control operations. The traffic control supervisor must be approved by the Engineer based on a written request by the Contractor detailing the training and experience of the traffic control supervisor. The traffic control supervisor shall be assisted by a full-time traffic control crew equipped with a suitable vehicle or vehicles and a mobile communications system consisting of radios or cellular phones. The duties and responsibilities of the traffic control supervisor shall be included in the plan of nighttime operations. During setup and removal of lane closures and other traffic control setups, the traffic control supervisor and crew shall be assisted by additional workers as necessary.

B. Plan of Nighttime Operations. Thirty days prior to the start of night work, the contractor shall submit a written plan for nighttime operations to the Engineer. The plan shall detail all aspects of the traffic control setup; lighting plans; the functions, responsibilities and identities of the traffic control supervisor and crew; and other details as necessary. It shall include a contingency plan identifying foreseeable problems and emergencies that may arise, and the approach that will be used to address them. This plan shall be revised and updated by the contractor as necessary during the progress of the work to accommodate actual conditions on the project.

C. Project Site Patrol. During nighttime operations, the traffic control supervisor and crew shall constantly patrol the contract area to ensure that conditions on the site are adequate for public safety and convenience at all times, to ensure worker safety from intrusions into the worksite, and to ensure that the provisions for maintenance and protection of traffic in the contract documents and in the plan for nighttime operations are adhered to. The traffic control crew shall maintain and adjust signs, channelizing devices, area lighting and other traffic control devices as necessary.

D. Waiver of Requirements. When the work does not require closure of an active lane, roadway, or ramp and when no construction operations occur adjacent to active traffic lanes; the requirements for a full-time traffic control supervisor and full-time project site patrol shall be waived. However, the contractor shall provide a competent supervisor and workers to install, maintain, adjust, and remove traffic control devices as required by the work operations. The details of the supervision and site patrol to be provided under this waiver shall be included in the plan of nighttime operations.

E. Trained Flaggers. All flaggers used in nighttime operations shall be formally trained in flagging operations. This training may consist of ATSSA (American Traffic Safety Services Association), Union, or trade association training, or training by an individual who has received formal training from a recognized program or agency in work zone traffic control. Prior to the start of work, the contractor shall provide the Engineer with a written summary of training for each individual flagger. When requested by the Engineer, flaggers shall demonstrate their competency in flagging procedures. Flaggers not thoroughly competent in flagging procedures to the satisfaction of the Engineer shall be replaced at once.

F. Emergency Flares. A supply of emergency flares shall be maintained by the Contractor for use in the event of unanticipated situations such as traffic accidents, equipment breakdowns, failure of lighting equipment, etc."

Under §619-3 CONSTRUCTION DETAILS, *add* the following after §619-3.12 Removable ReflectORIZED Pavement Markings:

"619-3.13 Maintenance and Protection of Traffic During Nighttime Operations. In addition to the requirements of basic maintenance and protection of traffic, additional requirements for maintenance and protection of traffic during nighttime operations shall be as follows:

A. Worker Protection. All workers involved in nighttime operations shall, at all times, wear reflective hard hats and vests or high visibility apparel as described below:

1. Hard hats shall be equipped with a minimum of 7600 mm² of reflective tape on all four sides (i.e. 1900 mm² per side).
2. Vests and high visibility apparel shall be orange, yellow, or strong yellow-green in color or fluorescent versions of these colors (flaggers shall wear orange) and shall include retroreflective material, white or silver in color, visible for a minimum of 300 m in all directions under headlight illumination.
3. Retroreflective clothing shall be designed to clearly identify the wearer as a person and shall be visible through a full range of body motions.
4. Retroreflective clothing and vests shall be closed front and rear. Open front vests shall not be permitted.
5. All retroreflective clothing and vests shall be in clean condition or replaced as necessary to maintain visibility and reflectivity.

These requirements apply to truck drivers and equipment operators when out of an enclosed cab.

B. Vehicle Protection. All vehicles and equipment in the traffic control zone shall be equipped with rotating amber beacons which shall be visible from all directions for a minimum of 300 m during daylight. Beacons shall be mounted in a manner which does not cause glare for the driver or operator.

Vehicles operating or parked on the pavement of a closed roadway or travel lane shall display 4-way flashers or beacons at all times.

Rollers shall display a 50 mm band of reflective tape on the front and rear (60 000 mm² per end minimum).

All trucks shall display a minimum of 60 000 mm² of reflective tape on the rear.

Haul trucks shall display a 600 mm by 1200 mm orange reflective sign with the legend "Construction Vehicle - Do Not Follow" in black lettering on the tailgate.

All construction equipment when moving at a speed below the operating speed of traffic in an open travel lane or on a shoulder adjacent to an open travel lane shall be equipped with an amber rotating beacon and shall be followed by a chase vehicle equipped with an amber rotating beacon and 4-way flashers.

Vehicles (except for rollers) shall travel facing in the same direction as adjacent traffic in order to avoid glare and confusion to drivers.

C. Signs, Delineation and Guiding Devices. All signs, delineators and guiding devices for nighttime operations shall be kept clean and visible with good reflectivity.

Type III construction barricades shall be used whenever an entire roadway or ramp is closed to traffic.

Plastic drums or 300 mm by 600 mm vertical panels shall be used for channelizing and delineating lane closures. Oversize (900 mm) cones may be used on tangent runs beyond the completion of the lane closure tapers. Spacing shall be in accordance with the following:

Estimated Operating Speed (km/h)	Maximum Spacing (m)
30	6.0
50	9.0
≥70	12.0

Delineation at gores or intersections shall be spaced at intervals equal to one-half of the above table values and shall consist of plastic drums or 300 mm by 600 mm vertical panels except that every other device may be an oversize (900 mm) cone at the Contractor's option.

When traffic will be traveling adjacent to closed travel lanes; two plastic drums, two 300 mm by 600 mm vertical panels or two oversize (900 mm) cones shall be placed transversely in each closed lane at 225 m maximum intervals (unless a lesser spacing is shown on the plans) except where it would interfere with paving, rolling or other ongoing operations. A Type III construction barricade may be substituted at the Contractor's option. No additional payment for Type III construction barricades will be made when used for this purpose.

