

## **699 INTERNALLY ILLUMINATED SIGNS.**

**(REV 6-23-01) (FA 8-23-01) (7-02)**

PAGE 757. The following new Section is added after Section 690.

### **SECTION 699 INTERNALLY ILLUMINATED SIGNS**

#### **699-1 Description.**

The work in this Section consists of furnishing and installing an Internally Illuminated Street Name Sign in accordance with the details specified in the Contract Documents.

#### **699-2 Materials.**

**699-2.1 General:** Use internally illuminated street name sign assemblies and associated mounting hardware meeting the requirements of the Minimum Specifications for Traffic Control Signal Devices (MSTCSD) and listed on the Department's Approved Product List (APL). Ensure all internally illuminated street name signs are marked in accordance with Section 603 and the markings are visible after installation.

Replace any component which the Engineer determines is damaged beyond repair at no additional cost to the Department.

**699-2.2 Hardware:** Meet the requirements of 603-2.4.

**699-2.3 Clamp-On Cantilever Arm:** Use only clamp-on cantilever arms which meet all design and wind loading requirements as specified in the Contract Documents. Ensure the clamp is adjustable to accommodate various size poles.

#### **699-3 Submittal Requirements.**

**699-3.1 General:** Free-swinging, internally illuminated signs and clamp-on cantilever arms mounted on the upright poles of mast arm assemblies or monotube signal structures may be accepted either by certification or by shop drawing submittal and approval as stipulated in this Section.

**699-3.2 Acceptance of signs by Certification:** Meet all of the following requirements:

1. Section 699-2,
2. Are not more than 12.0 sq. ft. [1.12.sq. meters] in area, and
3. Weigh no more than 75 lbs. [34 kg].

**699-3.3 Acceptance of signs by Shop Drawing Approval:** Submit Shop Drawing in accordance with Section 5, for internally illuminated street name signs not meeting all of the requirements of 699-3.2.

**699-3.4 Acceptance of Clamp-On Cantilever Arms:** For Cantilever arms supporting signs meeting the requirements of 699-3.2, certify to the Engineer that the arm meets the criteria in this Section. For Cantilever Arms supporting signs which do not meet the requirements of 699-3.2, submit shop drawings and design calculations for the arm design in accordance with Section 5.

#### **699-4 Installation.**

**699-4.1 General:** Secure the brackets to the street name sign housing in accordance with the manufacturers instructions.

**699-4.2 Single Sided Sign Assembly:** Install as specified in the Contract Documents.

**699-4.3 Double Sided Sign Assembly:** Use a free swinging mounting method.

**699-4.3.1 Two Point Support Assembly:** Use a two point support assembly when the street name sign assembly is attached to a mast arm that is perpendicular to the street on which the sign is viewed.

Use a two point mast arm mounting assembly consisting of the following:

1. Stainless steel band or cable type clamp,
2. Clevis,
3. Span wire adapter,
4. Tri-stud hanger body.

Ensure one of the hangers has a mechanism for the horizontal adjustment of the sign.

**699-4.3.2 One Point Support Assembly:** Use a one point support assembly consisting of an articulated horizontal stainless steel band or cable type mast arm clamp, sign bracket and mounting hardware, when the street name sign assembly is attached to a mast arm that is diagonal to the street on which the sign is viewed. Do not use a one point support assembly for internally illuminated street name sign assemblies exceeding 4 feet [1.22 m] in width.

Ensure the band or cable clamp is capable of horizontal rotation of 360 degrees.

**699-4.4 Clamp-On Cantilever Arm:** Attach the arm perpendicular to the street on which the street name sign assembly is viewed. Use a clamp and arm that are galvanized in accordance with ASTM A 123 [ASTM A 123M] unless otherwise specified in the Contract Documents. Ensure the arm has a cap secured in place.

**699-4.5 Electrical Wiring:** Install dedicated 14 AWG conductors to supply power to the sign. Connect the conductors to a dedicated 15 amp circuit breaker located either inside the controller cabinet or inside the electrical service disconnect. Using the same conduit system for both signal cables and internally illuminated sign conductors is permitted, unless otherwise specified.

Install conductors in such a manner as to prevent damage to conductors or conductor insulation. Remove and replace all damaged conductors /insulation at no additional cost to the Department.

Ensure drilled hole(s) through which conductor(s) pass through are fitted with a tight fitting rubber grommet.

Install continuous lengths of conductors between the dedicated circuit breaker and internally illuminated street name signs.

Do not splice conductors unless specified in the Contract Documents.

Provide one photoelectric cell to turn on/off all internally illuminated street name sign at each intersection. Use an 'L' bracket to mount the photoelectric cell as specified in the Contract Documents. Connect the photoelectric cell to a contactor assembly inside the controller cabinet to provide switching of the internally illuminated street name signs.

#### **699-5 Method of Measurement.**

**699-5.1 General:** Measurement for payment will be in accordance with the following tasks.

**699-5.2 Furnish and Install:** The Contract unit price each for Internally Illuminated Street Name Sign, furnished and installed, includes the Internally Illuminated Street Name Sign and Clamp-On Cantilever Arm as specified in the Contract Documents, all support and hanger hardware, photoelectric cell, relay assembly, field wiring to both the sign assembly, photoelectric cell, all miscellaneous materials, and labor necessary for a complete and accepted installation.

**699-5.3 Furnish:** The Contract unit price each for Internally Illuminated Street Name Sign, furnished, includes the Internally Illuminated Street Name Sign, and Clamp-On Cantilever Arm, and materials as specified in the Contract Documents, plus all shipping and handling costs involved in the delivery as specified in the Contract Documents.

**699-5.4 Install:** The Contract unit price each for Internally Illuminated Street Name Sign, installed, includes all miscellaneous materials and labor necessary for a complete and accepted installation as specified in the Contract Documents. The Engineer will supply the Internally Illuminated Street Name Sign and Clamp-On Cantilever Arm, as specified in the Contract Documents.

#### **699-6 Basis of Payment.**

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

Item No. 699-1	Internally Illuminated Street Name Sign - each.
Item No. 2699-1	Internally Illuminated Street Name Sign - each.