

ITEM 658

DELINEATORS AND OBJECT MARKERS

658.1 Description. This item shall consist of furnishing and mounting delineators and object markers of the types shown on the plans.

658.2 Materials

A. General. Delineators shall consist of one, two, three or nine reflectors of the color specified for the various types as shown on the plans. Delineators shall be either the acrylic plastic prismatic type reflector or the encapsulated reflective sheeting type reflector which conforms to the requirements specified herein; however, all delineators furnished shall be of the same type and manufacture. Object markers shall consist of three or nine reflector units or reflectorized panels of the color specified for the various types.

B. Independently Housed Acrylic Plastic Prismatic Reflector Unit Delineators.

1. General Description. Delineators and object markers shall consist of one, two, three or nine acrylic plastic prismatic reflectors of the color specified for the various types of delineators as shown on the plans, complete with aluminum housing, backplate and assembly hardware. The reflector unit shall be a circular shape conforming with the dimensions shown on the plans.

2. Design and Fabrication. Delineator and object markers housings and backplates shall be 0.063 inch, 3003-H-14 or similar aluminum, conforming with the dimensions shown on the plans, including all assembly hardware and post mounting hardware. The post mounting hardware shall consist of all bolts, nuts, plain washers, lock washers, fastening plates and brackets as required by the plans.

3. Reflector Unit Requirements. The reflector unit shall consist of a clear and transparent plastic face herein referred to as the lens, and a back material attached to the lens to form a unit hermetically sealed against water, dust and air. The lens shall consist of a smooth front surface free from projections or indentations other than for identification. The manufacturer's name or trade mark shall be molded legibly on the reflector unit.

Specific Intensity. Ninety-six percent (96%) or more of the reflector units shall equal or exceed the following minimum values of specific intensity:

Entrance Angle Degrees	Divergence Angle Degrees	Specific Intensity Cp./Foot-Candle/ Reflector-Unit	
		White	Yellow
0	1/10	60	30
20	1/10	30	15
0	1/3	30	15
20	1/3	15	8

Seal Test. Ninety-six percent (96%) or more of the reflector units shall pass the seal test, when tested in accordance with TxDOT Method Tex-845-B.

Heat Test. The reflector units shall pass the heat test when run in accordance with TxDOT Test Method Tex-846-B.

C. Encapsulated Reflective Sheeting Delineators.

1. General Description. Delineators and object markers shall consist of one, two, three or nine units of reflective sheeting of the color specified for the various types as shown on the plans, encapsulated within a clear weatherproof rigid plastic, comprising a sealed optical system, complete with aluminum housing and assembly hardware. The reflector unit shall be a circular shape of approximately three inches diameter or it may be another geometric shape so long as the surface area of the unit will contain an inscribed circle having a diameter of approximately three inches.
2. Design and Fabrication. Delineator housing shall be 0.063 inch 5052-H-14 or similar aluminum, conforming with the dimensions shown on the plans, including all assembly hardware and post mounting hardware. The post mounting hardware shall consist of all bolts, nuts, plain washers, lock washers, fastening plates and brackets as required by the plans.
3. Reflector Requirements. The reflector sheeting shall consist of glass spheres, adhered to a synthetic sheet resin or other suitable non-cellulosic material. The completed encapsulated reflectors shall have the following minimum brightness values:

Entrance Angle Degrees	Divergence Angle Degrees	Specific Intensity Cp./Foot-Candle/ Sq.Foot	
		White	Yellow
0	1/3	130	78
10	1/3	120	72
20	1/3	35	21

D. Center Mount Acrylic Plastic Prismatic Reflector Unit Delineators.

1. General Description. Delineators and object markers shall consist of one, two, three or nine acrylic plastic prismatic reflectors of the color specified for the various types of delineators as shown on the plans, complete with aluminum housing and mounting hardware. The reflector unit base shall be a circular shape conforming with the dimensions shown on the plans.
2. Design and Fabrication. Reflector units shall be securely fastened in a 0.020 inch aluminum housing that completely covers the back, sides and sealing edge of the reflector unit. The delineator shall have a mounting hole in its center with an aluminum grommet with a 3/16 inch inside diameter expanded within its mounting hole. A suitable mounting fastener conforming with the plans or other fastening means approved by the Engineer shall be furnished with each reflector.
3. Reflector Unit Requirements. The reflector unit shall comply with section 658.2 of this Specification with an exception to permit mounting hole.

658.3 Construction Methods. Delineators shall be mounted on the delineator posts as shown on the plans, or as directed by Engineer.

658.4 Measurement. Delineators shall be measured as "each" of the several types of delineators completely assembled and mounted in-place.

658.5 Payment. The work performed and materials furnished as prescribed by this specification, measured as provided under measurement will be paid for at the unit price bid for "Delineators and object markers (Independently Housed)" of the type specified or "Delineators and object markers (Center Mount)" of the type specified, which price shall be full compensation for furnishing, fabricating and erecting the delineators as shown on the plans and as specified herein, including housings, backplates, frames, reflector units, fastening plates or brackets where required and all bolts, nuts and washers.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 658