STATE OF NEW JERSEY
DEPARTMENT OF TRANSPORTATION
TRENTON, NEW JERSEY 08625

METRIC SPECIFICATIONS FOR RAMP METER BLANKOUT SIGNS (FIBER OPTIC)

N.J. Specification No. EBM-FOBS-2 Effective Date: July 1, 2001

New Jersey Department of Transportation Specifications for a Fiber Optic Blankout Sign.

The purpose of these specifications is to describe minimum acceptable design and operating requirements for a Ramp Meter Fiber Optic Blankout Sign.

GENERAL - I

1-1 The fiber optic blankout sign shall display the message(s) and have the dimensions shown on the contract documents.

1-2 The fiber optic blankout sign shall consist of:

A. Fiber optic message module

B. Quartz halogen lamps and color filters

C. Transformers

D. Weatherproof housing with door.

E. Visor

1-3 The legend color shall be lunar white.

1-4 The lunar white filters shall be replaceable and conform to the Federal color standards meeting boundary equations of 1931 C.E.I. (I.C.I.) Standard Observation Chart.

1-5 The formed letters shall conform to the United States Department of Transportation's Standard Alphabet.

CONSTRUCTION - II

2-1 The entire front face of the sign shall be protected by a sheet of polycarbonate mounted in the cast door frame. Lens material shall be 3 millimeter thick clear polycarbonate with vandal resistant properties.

2-2 The sign shall include a 2.5 millimeter thick aluminum weatherproof housing and door.

2-3 The interior of the unit shall be painted with a flat black enamel to eliminate internal reflection and two coats of yellow standard color No. 13538 baking enamel for exterior surfaces.

2-4 The housing shall be supplied with standard 41 millimeter N.P.T. hubs, top and bottom.

2-5 Fiberoptic bundles shall be arranged utilizing bifurcated combed randomization. Randomization shall be by individual fibers.

2-6 Fiberoptic shall be glass fiber bundles assembled on a flat black aluminum panel with mechanical protection for the bundles.

2-7 The glass fibers at the input and output ends shall be ground smooth and polished for maximum light transmission.

2-8 The signal shall completely blankout when not energized.

2-9 Two spare light guides shall be provided for each word.

ELECTRICAL - III

3-1 A quartz halogen lamp shall be used for the message. A G.E. type ENL shall be operated between 10.5 and 10.8 volts, with an average lamp life of not less than 8 000 hours.

3-2 Power consumption shall be no greater than 42 watts per lamp.

3-3 Transformers shall be used to reduce the incoming 120 volts AC to 10.8 volts AC. The transformers shall have a class "A" insulation and shall be rated at 48.5 volt-amps. A constant 120 volt power source is required to display the message.

3-4 The unit shall be capable of continuous operation over a temperature range of -37 °C to +74 °C.

3-5 Electrical connection shall be provided by a barrier-type terminal strip for connection of field wires. The barrier-type terminal strip shall be rated at 50 amps and shall have a minimum barrier height of 16 millimeters and shall utilize M4 x 8 screws as a minimum. Wire access is accomplished through a mounting hub or electrical conduit.

3-6 Transformers shall be used to reduce the incoming 120 volts AC to 10.8 volts AC.

INSTRUCTION AND GUARANTEE - IV

4-1 Upon request, one schematic wiring diagram and installation manual shall be provided with each sign assembly.

4-2 No changes or substitution in these requirements will be accepted unless authorized in writing. Inquiries regarding this specification shall be addressed to the Manager, Office

of Traffic Signal and Safety Engineering, New Jersey Department of Transportation, 1035 Parkway Avenue, P.O. Box 613, Trenton, New Jersey 08625.

4-3 The fiber optic blankout sign shall carry a one-year guarantee from the date of acceptance against any imperfections in workmanship and material.

4-4 The supplier agrees upon request of the Manager, Office of Traffic Signal and Safety Engineering to deliver to the Office, a sample of the fiber optic blankout sign to be supplied in compliance with these specifications for inspection and test before acceptance. After completion of the test, the sample shall be returned.