

**STATE OF NEW JERSEY
BUREAU OF ITS ENGINEERING
DEPARTMENT OF TRANSPORTATION
TRENTON, NEW JERSEY 08625**

MATERIAL SPECIFICATIONS FOR CONTROLLER, CAMERA

Ensure that the controller is compatible with the camera specified under NJDOT material specifications ITS-Camera.

SECTION I – GENERAL

Ensure that the controller camera consists of a ground mountable cabinet enclosure with all necessary equipment as designed and hardware as a fully assembled unit:

- Controller Cabinet
- Video encoder
- Media converter / Ethernet switch / Communications modem
- Terminal server
- Fiber optic patch panel
- Communications, video, and power cables connectors
- Fiber optic jumper cables

SECTION II – CONTROLLER CABINET

2-1 General Requirements

Ensure that:

- a. The Controller Cabinet conforms to NJDOT electrical details for Meter Cabinet Type "M" Fabricated with the exceptions noted in the controller camera detail. Ensure the Controller Cabinet is equipped with pullout shelves for installing equipment.
- b. a fluorescent fixture is supplied with a lens or shield and a 15 watt type T-12 lamp with rapid start, high power factor ballast and installed in the top front and rear of the cabinet. A switch shall be installed on the inside of the cabinet doors to manually disable the lamps.
- c. All Controller Cabinet terminals, outlets, circuit boards, and other components are labeled using silk screening or a similar permanent process.
- d. The Controller Cabinet has space for installing Code Translator and low voltage power supplies.

2-2 Power Distribution Equipment

Provide power distribution equipment that is NEMA and UL compliant and includes the following as a minimum:

- a. Main Circuit Breaker. 2-Pole, 60 amperes, 240 volt, S/N, NEMA 1 enclosure with a minimum short circuit rating of 22k AIR.
- b. Distribution Panelboard. Single Phase, 3-wire (#14 to 4 AWG), 120/240 Vac, Neutral Installed, 12 – circuit breaker min., fixed main bus rated at 100 ampere and enclosure; each circuit breaker is to be 1-pole, 120 volt, 15 ampere with a minimum short circuit rating of 22 k AIR
- c. (4)-Duplex NEMA 5-15R receptacle for electronic equipment
- d. (1)-Duplex NEMA 5-15R GFCI convenience receptacle
- e. Terminal blocks as required or specified

- f. Surge Suppressors. 10 kA Surge Current rating min. for protection of CCTV and networking equipment. Ensure surge protectors protect all communication signals connecting the control equipment from off-site sources.

2-3 Environmental Systems

- a. Furnish and mount one (1) thermostatically controlled fan with a minimum 100 CFM air flow for ventilation, screened against the entrance to remove dust and foreign matter in the top of the cabinet completely wired and interconnected. Provide and install a contact closure with wiring to indicate that cabinet ventilation has failed. A failure of the ventilation is to be reported when the temperature in the cabinet exceeds a preset temperature selected from an adjustable range from 70 °F to 130 °F.
- b. Filtered air intake ports are to be located on the bottom third of the access door.
- c. Ensure that the fan and air filters are removable and replaceable from inside the cabinet.
- d. Mount a 400 watt blower heater inside the cabinet on one side. Ensure that the heater is controlled by a thermostat which is designed to operate the heating system only when required. Set the low temperature to activate heating at 35 °F. Ensure that the unit turn-off is at 60 °F. Provide a contact closure capable of indicating a low temperature alarm. Ensure that the sensor is adjustable in the range of 41 °F to 5 °F and set to 20 °F.

SECTION III – VIDEO ENCODER

Ensure that the video encoder conforms to NJDOT material specification ITS- Hardened Video Encoder.

SECTION IV – MEDIA CONVERTER/ ETHERNET SWITCH

- 4-1 Ensure that the Media Converter conforms to NJDOT material specification ITS-Media Converter.
- 4-2 Ensure that the Ethernet Switch conforms to NJDOT material specification ITS- Ethernet Switch.

SECTION V– TERMINAL SERVER

Ensure that the Terminal Server conforms to NJDOT material specification ITS –Terminal Server.

SECTION VI– FIBER OPTIC PATCH PANEL

Ensure that the controller assembly contains a 12 port fiber-optic patch panel assembly suitable for terminating 12 single mode fibers using SC connectors. Ensure that the patch panel is suitable for mounting inside the outdoor enclosures and is mounted on the side of the cabinet. Ensure that the Patch Panel conforms to the applicable Material Specification.

SECTION VII– FIBER OPTIC JUMPER CABLES

Provide and install 12-6' long standard full duplex single mode loose tube fiber optic jumper cables with factory installed connectors on both ends. Provide the connector at one end of Type SC and the other end as specified or required to connect to communications equipment. The jumper cable is to be suitable for installation inside the outdoor cabinets. The fiber material characteristics are to be in conformance with the Fiber Optic Cable material spec.