**8E**

**FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL**

 (Effective January 1, 2002; Revised April 12, 2023)

Description. This work shall consist of furnishing and installing a Super P Size Full-actuated Controller and Type IV Cabinet at location shown on plan details. A Super P Size Cabinet shall have an additional built-in compartment for battery backup in a single cabinet shell.

CONSTRUCTION REQUIREMENT

General. The Super P Size Full Actuated Controller and Type IV Cabinet shall be a NEMA TS2 Type 1 and meet the requirements of Sections 857, 1073 and 1074 of the Standard Specifications with the following modifications.

1. This item requires that a factory representative capable of ensuring that the controller and cabinet are operating to the satisfaction of the Engineer shall be present at the turn on of the controller and shall remain until the intersection is operating to the satisfaction of the Engineer. Should a defect appear in the controller or cabinet operation, the representative shall return as often as necessary until all defects are repaired.
2. At the preconstruction meeting, the Contractor shall provide the names and phone numbers of two technicians who would be able to respond to controller malfunctions that occur within the 30-day acceptance period after the controller is turned on. If neither person can be reached at the time of the malfunction nor be at the location within 2 hours of receiving the call, any available electrician capable of evaluating and correcting the malfunction may be called at the State’s discretion. All bills resulting from defective operation of the controller or cabinet shall be the responsibility of the Contractor.

Controller.

1. The controller shall be capable of uploading and downloading its database to a laptop computer that has been installed with the proper software. All uploaded data shall be able to be changed within the laptop and then downloaded to the controller. The necessary cables for upload/download shall be provided and upload/download software shall be provided and installed onto the District Three laptop computer if the software and cables have not already been supplied to District Three or the software presently being used by District Three requires updating. The controller shall be the latest version of TS 2 and shall have two (2) data keys.
2. The controller data entry fields shall have a clear distinction between data fields and information. Data fields shall be in matrix format with a minimum of eight phases wide and four date lines deep.
3. The active status screen shall display the following information for all operating phases in an alpha-numeric display.
4. A clear distinction between the following detections for each phase: vehicle recall, vehicle detection, pedestrian recall, and pedestrian detection.
5. A clear distinction among the phases receiving detection.
6. Status displayed simultaneously whenever one or more of the following is operating: vehicle passage timer, maximum phase timer, added initial timer, time before reduction timer, time to reduce timer, existing gap timer, walk timer, don’t walk timer.
7. When a phase ends, the controller shall report whether the exit was a max out, gap out or force out condition. The controller shall show the yellow and red timers timing and any trailing overlap timers timing.
8. The color of all operating overlaps.
9. The phase of the controller shall be as shown in the plans.

 j) The controller shall be the latest version of the fully actuated unit.

Controller Cabinet.

1. The police door compartment shall contain a manual control cord from which the signals may be operated manually. The inside door toggle switches shall be protected from accidental contact by vertical metal slats. The slats shall extend beyond the switches, in a manner like the terminals on the back panel. A plastic plans holder shall be installed on the cabinet door. The holder shall be at least 11 in. high and 17 in. wide, shall open from the side, and shall not interfere with the filter. The holder shall have a means of closing the side opening to prevent water from entering.
2. A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power panel. The cover shall completely shield the service wires, and circuit breaker wires from accidental contact.
3. A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power terminals for the thermostatically controlled exhaust fan. The thermostat shall be of the knob type capable of adjustment by hand and without tools. The thermostat and terminals shall be mounted on the left or right side of the controller cabinet.
4. All harness wiring of connectors A, B, C and D shall be factory installed so that an additional phase may be added to the existing phasing by the addition of a load switch and the proper conflict monitor card pinning.
5. A self-adhering phasing diagram shall be placed on the inside of the cabinet door. Attach a phase and direction decal below the amplifiers.
6. Train the wire along the inside of the cabinet for length and cleanliness.
7. Place a thermostatically controlled electric heater in the cabinet with LED light bulbs.
8. Traffic signal control and cabinet assembly shall be fully tested by the equipment supplier. Five (5) copies of the complete cabinet wiring showing all connections shall be furnished to the Engineer.
9. Control cabinet shall have a pull-out drawer for a place to set a laptop and provide storage for cabinet prints and plans.
10. A generator factory outlet in an enclosed door shall be provided for the Uninterruptable power supply.

Basis of Payment. This work will be paid for at the contract unit price per each for FULL- ACTUATED CONTROLLER AND TYPE IV CABINET,SPECIAL which price shall be payment in full to complete this work.