



**SPECIAL PROVISIONS
FOR
TRAFFIC SIGNAL INSTALLATION**

**Kossuth County
TSF-018-3(94)--92-55**

**Effective Date
December 16, 2014**

THE STANDARD SPECIFICATIONS, SERIES 2012, AND DEVELOPMENTAL SPECIFICATIONS FOR TRAFFIC SIGNALS (SUDAS) ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS AND DEVELOPMENTAL SPECIFICATIONS FOR TRAFFIC SIGNALS (SUDAS).

120213.01 GENERAL.

- A.** This part of the Special Provisions consists of the general requirements necessary when furnishing a NEMA controller system installation, video traffic detection system installation, and emergency vehicle preemption system complete, in place, and operative as described in the project plans and these specifications.
- B.** The Developmental Specifications for Traffic Signals (SUDAS) and the Standard Specifications for Highway and Bridge Construction, Series 2012, Iowa DOT, as modified by these specifications, or other appropriate special provisions shall apply to this project. The installation of the traffic control signals and appurtenances shall be in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, as adopted by the Department per 761 of the Iowa Administrative Code (IAC), Chapter 130.

120213.02 CONTROLLER.

The controller shall be a Peek Model ATC-1000 to be compatible with existing City of Algona equipment to remain in place and shall provide the following features:

- Minimum 32 bit microprocessor.
- Portable data card to transfer timing between controllers.
- Keyboard with dedicated function and numeric keys.
- Alphanumeric menu display, minimum size 8 rows x 40 columns.
- Menu screens programmable to allow deletion of unwanted displays.
- Context sensitive help screens selected on keyboard.
- Expandable to 16 phases, 16 overlaps, 2 exclusive pedestrian sequences.
- Advance warning beacon logic.
- Preemption capable.

120213.03 CONFLICT MONITOR.

The conflict monitor shall provide the following features:

- Nonvolatile retention of fault status. Display all channels and colors when power restored.
- Power failure count. Logs up to 200 failures.
- Log date and time of 100 events (min) including reset. Display status at time of fault.
- Selectable input to detect malfunctioning controller.
- Selectable latch options for cvm and 24v failures.
- Enhanced channel monitoring to permit selectable color fault indications.
- Enhanced absence monitoring to permit absence detection with walk input active.
- Individual channel absence timers.
- Multiple status bits for remote monitoring.

120213.04 VIDEO DETECTION SYSTEM.

Video detection system shall be Peek Videotrak IQ to be compatible with existing City of Algona equipment to remain in place and shall provide the following features:

- The VDM (video detection modules) shall process video images from each connected camera.
- VDM shall detect the presence of vehicles in up to 26 detection zones per camera.
- Detector zones shall be programmed via a menu displayed on a video monitor and a pointing device connected to the VDM. A separate computer shall not be required for programming.
- Detector and or system configurations will also be off loaded from the unit via a USB memory stick inserted into one of two USB slots on the face of the unit.
- Camera zoom and focus functions shall be programmed through the user interface on the VDM.
- The system shall include software resident to each VDM that detects vehicles in multiple lanes using only the video image.
- Detection zones shall be directional to reduce false detection from objects traveling in directions other than the desired direction of travel in the detection area.
- Detection zones shall be capable of being programmed to reject false calls from shadows of vehicles in adjacent lanes.
- The video cameras used for traffic detection shall be furnished by the VDM supplier and shall be qualified by the supplier to ensure proper video detection system operation.
- The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection.

120213.05 EMERGENCY PREEMPTION SYSTEM.

Emergency preemption shall be Traffic Systems Sonem 2000 to be compatible with existing City of Algona equipment to remain in place and shall provide the following features.

- Siren activated which is standard equipment on all emergency vehicles shall activate using 'yelp, hi-low, wail' modes.
- Confirmation lights shall be installed on each approach of preemption.
- Detectors shall be directional with an 18 degree cone of sensitivity and a polar curve of 9:1.
- Electrical cable from the detector to controller cabinet shall be No. 18 AWG, 2-conductor, twisted, shielded pair.
- Located in the cabinet shall be a phase selector used to decode the information from each detector.
- Up to 4000 stored events.