

EXPECTED IMPLEMENTATION JULY 2009

785 INTELLIGENT TRANSPORTATION SYSTEMS INFRASTRUCTURE. **(REV 1-26-09) (FA 2-4-09) (7-09)**

SUBARTICLE 785-2.2 (of the Supplemental Specifications) is deleted and the following substituted:

785-2.2 Materials: Provide a grounding system that meets the grounding requirements of this section and also those defined in Section 620.

Install a transient voltage surge suppressor (TVSS) both ahead of and behind (i.e., on the supply side and the load side of) the ITS device electronics.

Install TVSS on all power, data, video and any other conductive connection. Use only equipment and components that meet the requirements of these minimum specifications, and are listed on the Department's Approved Product List (APL).

SUBARTICLE 785-3.2.1 (of the Supplemental Specifications) is deleted and the following substituted:

785-3.2.1 Pole: Use a concrete or steel pole in accordance with Design Standard 18111 or 18113 and listed on the Department's Qualified Products List (QPL).

For concrete poles, use concrete meeting the requirements of Section 346 and construct in accordance with Section 450. Obtain concrete poles from a manufacturing plant that is currently on the Department's list of Producers with Accepted Quality Control Programs. Producers seeking inclusion on the list shall meet the requirements of 105-3. Assume responsibility for performance of all quality control testing and inspection required by Sections 346 and 450; however the PCI personnel and plant certifications are not required.

Use a pole that is equipped with a handhole of sufficient size to provide access to the pole interior and for temporarily securing and operating the lowering tool. Ensure that the pole-top tenon is rotatable.

SUBARTICLE 785-3.2.2 (of the Supplemental Specifications) is deleted and the following substituted:

785-3.2.2 Lowering Device: Use a lowering device as shown in the plans. Ensure that the lowering device provides the electrical connections between the control cabinet and the equipment installed on the lowering device without reducing the function or effectiveness of the equipment installed on the lowering device or degrading the overall system in any way. Locate the stainless steel lowering cable inside conduit to avoid cable twisting and to ensure that only the lowering cable is in motion inside the pole when the lowering device is operated. Ensure that all other cables remain stable and secure during lowering and raising operations.

Ensure that the lowering device includes a disconnect unit for electrically connecting the equipment installed on the lowering device's equipment connection box to the power, data, and video cables (as applicable); a divided support arm, a pole adapter for the assembly's attachment to the rotatable pole-top tenon, and a pole-top junction box, as shown in the plans.

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Ensure that all of the lowering device's external components are made of corrosion-resistant materials that are powder-coated, galvanized, or otherwise protected from the environment by industry-accepted coatings that withstand exposure to a corrosive environment. Use only lowering device equipment and components that meet the requirements of these minimum specifications and that are listed on the Department's Approved Product List (APL).

SUBARTICLE 785-3.3 (of the Supplemental Specifications) is deleted and the following substituted:

785-3.3 Installation Requirements: Ensure that the divided support arm and receiver brackets self-align the contact unit with the pole centerline during installation, and that the contact unit cannot twist when subjected to the design wind speeds defined in the FDOT Structures Manual, Volume 9. Supply internal conduit in the pole for the power and video cabling if required by the Engineer.

Ensure all pulleys installed for the lowering device and portable lowering tool have sealed, self-lubricated bearings, oil-tight bronze bearings, or sintered bronze bushings.

Provide 1.25-inch-diameter PVC conduit in the pole for the lowering cable. Verify that a conduit mount adapter is furnished for the interface between the conduit and the internal back side of the lowering device.

785-3.3.1 Concrete Poles: Install foundation and pole in accordance with 641-4.2, except footing dimensions shall be in accordance with Design Standard 18113.

785-3.3.2 Steel Poles: Install foundation and pole in accordance with 649-5 and 649-6.

SUBARTICLE 785-4.1 (of the Supplemental Specifications) is deleted and the following substituted:

785-4.1 Description: Furnish and install an ITS field cabinet for housing ITS equipment and network devices including, but not limited to, managed field Ethernet switches, hub switches, device servers, digital video encoders, fiber optic cable patch panels, and equipment racks for non-intrusive vehicle detection systems. Use only equipment and components that meet the requirements of these minimum specifications, and are listed on the Department's Approved Product List (APL).

SUBARTICLE 785-4.2.9.6 (of the Supplemental Specifications) is deleted and the following substituted:

785-4.2.9.6 Generator and Auxiliary Power Connection: If shown on the plans, furnish an ITS field cabinet that has provisions for the connection of an external power source, such as a portable generator, through a weatherproof, water-resistant, secure interface. This feature should allow authorized personnel to access, connect, and secure an external power source to the cabinet in order to restore power within 5 minutes of arrival at the ITS field cabinet. Provide the field cabinet with a transfer switch rated equal to or higher than the design load of the cabinet's main breaker and the generator input twist-lock connector rating. Ensure that the transfer switch provides a means of switching between normal utility power and auxiliary backup generator power. Ensure that the switching time between sources is no longer than 250 milliseconds. Ensure that the transfer switch meets UL Standard 1008. Ensure that the

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transfer switch does not allow simultaneous active power from two sources and does not allow generator backflow into normal utility AC circuits.

785-4.2.9.6.1 Manual Transfer Switch: Ensure the manual transfer switch is a two-position switch. Label the switch positions as “Generator Power” and “Utility Power”.

Equip the transfer switch with a “Utility-on” indicator, which will illuminate when normal utility power service is available and the switch is in the “Generator Power” position. The indicator must turn off when the transfer switch is moved to the “Utility Power” position. Ensure that the Utility-on indicator is clearly visible outside the cabinet and that the indicator’s on/off state can be visually determined from a distance of 30 feet.

785-4.2.9.6.2 Automatic Transfer Switch: To provide for automatic transition from generator power back to normal utility service after utility power is restored, an automatic transfer switch may be used instead of a manual transfer switch. Ensure that the automatic transfer switch has indicators that display the status of connected power sources and indicate which power source is actively energizing the cabinet.

If a relay circuit is used to provide switching, the normally closed circuits must be connected to normal utility power. The relay shall be energized only by the generator, not by the electric utility service. When energized, the relay must break the connection to normal utility power and make connection to the generator power input. Any automatic transfer switch or relay operated switch must include a bypass switch that permits the automatic switching function to be disabled and permits manual selection of the power sources connected to the cabinet.

785-4.2.9.6.3 Generator Access Panel: Include a generator connection panel consisting of, at a minimum, the manual transfer switch and three-prong, 30-amp twist-lock connector with recessed male contacts for generator hookup. Locate and label the transfer switch and twist lock connector on a panel easily accessible behind a lockable exterior door. Ensure that this access door is labeled as “Generator Access Door”, equipped with a tamper-resistant hinge, and that the door assembly is weatherproof and dustproof. The access door shall be provided with a #2 lock unless otherwise specified in the plans. Provide the access door with a weatherproof opening for the generator cable. The generator hookup compartment itself shall be recessed into the cabinet and be deep enough to allow closing and locking of the access door when the generator cable is connected. Limit the generator hookup compartment and access panel’s intrusion into the cabinet interior to no more than 6 inches. Avoid blocking access to any other equipment in the cabinet. Locate this generator panel as close as possible to the main AC circuit breaker. Ensure that the bottom of the access panel is no less than 24 inches above the bottom of the cabinet. Never locate the generator access panel on the main cabinet door or back door.

Connect wiring from the Cabinet AC+ Input Terminal to the transfer switch. Connect the alternate power source’s wiring on the transfer switch to a receptacle that can accept a 120 VAC generator cord. Install a power service wire between the transfer switch and the existing power distribution panel in the cabinet.