



Florida Department of Transportation

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KEVIN J. THIBAUT, P.E.
SECRETARY

February 4, 2020

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **641**
Proposed Specification: **REVISED 6410202 Prestressed Concrete Poles.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Derek Vollmer from the Traffic Engineering and Operations Office to remove the following material and installation language from Division II to Section 996 in Division III.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Strickland, P.E.
State Specifications Engineer

DS/ra

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PRESTRESSED CONCRETE POLES(REV ~~211-34-210~~)

SUBARTICLE 641-2.2 is deleted and the following substituted:

641-2.2 Camera Lowering Device: Use lowering devices that meet the requirements of Section 996 and are listed on the Department's Approved Product List (APL). Permanently mark the lowering device with manufacturer name or trademark, model or part number, date of manufacture, and serial number.

~~—————The lowering device must provide the electrical connection between the control cabinet and the equipment installed on the lowering device without reducing the function or effectiveness of the equipment. The lowering device system support arm must be capable of withstanding service tension and shear up to 1 kip minimum.~~

~~—————The lowering device must include a disconnect unit and power, data, and video cables (as applicable) for connecting equipment, a divided support arm, pole attachment provisions, a rotatable pole top tenon, and a pole top junction box, unless otherwise shown in the Plans.~~

~~—————All external components are to be made of corrosion-resistant materials that are powder coated, galvanized, or otherwise protected from the environment. All finished castings must have a smooth finish free from cracks, blow holes, shrinks, and other flaws. All roller fairlead frames must be corrosion-resistant stainless steel or aluminum. All pulleys used in the lowering device and portable lowering tool must have sealed, self-lubricated or oil-tight bearings, or sintered bronze bushings.~~

~~—————Provide a minimum of 100 feet of composite power and signal cable prewired to the lowering device at the factory unless otherwise shown in the Plans. Splices will not be allowed.~~

~~—————Use only lowering devices designed to withstand the design wind speeds defined in the Department's Structures Manual.~~

SUBARTICLE 641-2.2.1 is deleted:

~~**641-2.2.1 Equipment Connection Box:** Include a 1-1/2 inch National Pipe Thread (NPT) pipe connection point for attaching a camera. Ensure that the equipment connection box has an ingress protection rating of no less than IP55.~~

SUBARTICLE 651-2.2.2 is deleted:

~~—————**641-2.2.2 Disconnect Unit:** The disconnect units must have a minimum load capacity of 600 pounds with a 4:1 safety factor and be capable of securely holding the lowering device and any installed equipment. Fixed and movable components of the disconnect unit must have a locking mechanism between them, with at least two mechanical latches for the movable assembly. The fixed unit must have a heavy-duty cast tracking guide that allows latching in the same position each time. The load must be transferred from the lowering cable to the mechanical~~

~~latches when the system is in the latched position. Interface and locking components must be constructed of stainless steel or aluminum.~~

SUBARTICLE 641-2.2.2.1 is deleted:

~~**641-2.2.2.1 Disconnect Unit Housing:** The disconnect unit housing must be weather proof with an ingress protection rating of no less than IP55.~~

SUBARTICLE 641-2.2.2.2 is deleted and the following substituted:

~~**641-2.2.2.2.1 Connector Block:** Provide modular, self-aligning and self-adjusting female and male socket contact halves in the connector block. Equip the lowering device with enough contacts to permit operation of all required functions of the camera, up to a maximum of 20 contacts and include at least two spare contacts. Provide contact connections between the fixed and movable lowering device components that are capable of passing EIA-232, EIA-422, EIA-485, and Ethernet data signals and 1 volt peak to peak (V_{p-p}) video signals, as well as 120 V_{AC}, 9-24 V_{AC}, and 9-48 V_{DC} power. The lowering device connections must be capable of carrying the signals, voltages, and current required by the devices connected to them under full load conditions.~~

~~Use only corrosion resistant stainless steel hardware. Lubricate all components, including the connector block and contacts, in accordance with the manufacturer's recommendations. Ensure that male contacts used for grounding mate first and break last. All contacts and connectors must be self-aligning and self-adjusting mechanical systems. Provide a spring assisted contact assembly to maintain constant pressure on the contacts when the device is in the latched position.~~

~~Provide connector pins made of brass or gold plated nickel, or gold plated copper.~~

~~Ensure that the current carrying male and female contacts are a minimum of 0.09 inch in diameter and firmly affixed to the connector block. Ensure mated connectors do not allow water penetration.~~

SUBARTICLE 641-2.2.3 is deleted and the following substituted:

~~**641-2.2.3.2 Lowering Tool:** Provide a portable metal frame lowering tool manufactured of corrosion resistant materials with winch assembly and a cable with a combined weight less than 35 lbs that is capable of securely supporting itself and the load. The lowering tool must include a quick release cable connector, and a torque limiter that will prevent over-tensioning of the lowering cable and be equipped with gearing that reduces the manual effort required to operate the lifting handle to raise and lower a capacity load. Ensure that the lowering tool can be powered using a 1/2 inch chuck, variable speed reversible industrial duty electric drill capable of matching the manufacturer recommended revolutions per minute. Provide an adapter with a clutch mechanism and torque limiter for use with the drill.~~

~~The winch assembly must have a minimum drum size width of 3.75 inches and a positive braking mechanism to secure the cable reel during raising and lowering~~

~~operations, and to prevent freewheeling. The lowering cable must wind evenly on the winch drum during operation. Provide a manual winch handle that incorporates a non-shear pin type torque limiter that can be used repeatedly and will not damage the lowering system.~~

~~Provide a minimum of one lowering tool and any additional tools as required in the Plans. Deliver the lowering tool to the Department before final acceptance.~~

~~**641-2.2.4 Lowering Cable:** The lowering cable must be 0.125 inch minimum diameter Type 316 stainless steel aircraft cable (7 strands x 19 gauge) with a minimum breaking strength of 1,760 pounds. Additionally, the lowering cable assembly (as installed with thimble and crimps on one end and a cable clamp inside the latch on the lowering device end), must have a minimum breaking strength of 1,760 lbs.~~

~~All lowering cable accessories, such as connecting links, must have a minimum workload rating that meets or exceeds that of the lowering cable.~~

~~Prefabricated components for the lift unit support system must prevent the lifting cable from contacting the power or video cables.~~

SUBARTICLE 641-2.2.5 is deleted and the following substituted:

641-2.2.5-3 Wiring: All wiring must meet NEC requirements and be installed in accordance with the equipment manufacturers' recommendations for each device connected on the pole, at the lowering device, and in the field cabinet.

SUBARTICLE 641-2.2.6 is deleted and the following substituted:

641-2.2.6-4 External-Mount Lowering System Enclosure for Mounting to Existing Structures: ~~The system must include an upper mounting/junction box, winch assembly and all external conduit and cabling necessary for mounting to existing structures.~~

~~Provide a NEMA 4 rated lower lockable pole-mounted cabinet, constructed of corrosion resistant 5052 sheet aluminum with a minimum thickness of 1/8 inch, to house the winch assembly. The cabinet must allow for unobstructed operation of the winch, access for servicing and provide sufficient clear area for operation of the winch manually and with an electric drill. The outside surface of the cabinet must have a smooth, uniform natural aluminum finish. All inside and outside edges of the winch cabinet must be free of burrs, and all welds must be neatly formed, free of cracks, blow holes, and other irregularities. Cabinet hinges must be vandal resistant and constructed of 14 gauge stainless steel or 1/8 inch aluminum with stainless steel hinge pins.~~

~~The cabinet door must be double-flanged and include neoprene closed-cell gaskets permanently secured on the interior door surfaces that contact the door opening. The cabinet door must not sag. Include a pin tumbler lock keyed for use with a No. 2 key and two keys, unless otherwise directed by the Plans. The cabinet door handle must include a lock hasp that will accommodate a padlock with a 7/16 inch diameter shackle.~~

~~The upper mounting/junction box must include a maintenance access door with captive attachment hardware. Provide all necessary mounting hardware, conduits, standoffs, and conduit mounts required for a complete and functional system.~~

~~The external conduit must be galvanized Schedule 40 with National Pipe Thread Taper (NPT) threads and have a minimum ID of 3 inches at the lower winch cabinet~~

entrance and allow the lowering cable to wind evenly on the winch drum without binding. All conduit couplings and connections between the pole-mounted cabinet and upper mounting/junction box must be watertight.

PRESTRESSED CONCRETE POLES
(REV 2-3-21)

SUBARTICLE 641-2.2 is deleted and the following substituted:

641-2.2 Camera Lowering Device: Use lowering devices that meet the requirements of Section 996 and are listed on the Department's Approved Product List (APL).

SUBARTICLE 641-2.2.1 is deleted:

SUBARTICLE 651-2.2.2 is deleted:

SUBARTICLE 641-2.2.2.1 is deleted:

SUBARTICLE 641-2.2.2.2 is deleted and the following substituted:

641-2.2.1 Connector Block: Lubricate all components, including the connector block and contacts, in accordance with the manufacturer's recommendations.

SUBARTICLE 641-2.2.3 is deleted and the following substituted:

641-2.2.2 Lowering Tool: Provide a minimum of one lowering tool and any additional tools as required in the Plans. Deliver the lowering tool to the Department before final acceptance.

SUBARTICLE 641-2.2.5 is deleted and the following substituted:

641-2.2.3 Wiring: All wiring must meet NEC requirements and be installed in accordance with the equipment manufacturers' recommendations for each device connected on the pole, at the lowering device, and in the field cabinet.

SUBARTICLE 641-2.2.6 is deleted and the following substituted:

641-2.2.4 External-Mount Lowering System Enclosure for Mounting to Existing Structures: The cabinet must allow for unobstructed operation of the winch, access for servicing and provide sufficient clear area for operation of the winch manually and with an electric drill. Include a pin tumbler lock keyed for use with a No. 2 key and two keys, unless otherwise directed by the Plans. Provide all necessary mounting hardware, conduits, standoffs, and conduit mounts required for a complete and functional system.