

Lowering Device Specification

804.04 - Camera Lowering device

The camera lowering system shall be designed to support and lower a standard closed circuit television camera, lens, housing, PTZ mechanism, cabling, connectors and other supporting field components without damage or causing degradation of camera operations. The Contractor will ensure that the camera lowering system device and the pole are compatible. The lowering system shall consist of a pole, suspension contact unit, divided support arm, and a pole adapter for attachment to a pole top tenon, pole top junction box, conduit mount adapter and camera connection box. The divided support arm and receiver brackets shall be designed to self-align the contact unit with the pole center line during installation and insure the contact unit cannot twist under high wind conditions. Square support arms are not acceptable. The camera-lowering device shall withstand wind forces of 100mph with a 30 percent gust factor using a 1.65 safety factor. The camera-lowering device to be furnished shall be the product of manufacturers with a minimum of 3 years of experience in the successful manufacturing of camera lowering systems. The lowering device provider shall be able to identify a minimum of 3 previous projects where the purposed system has been installed successfully for over a one-year period of time each. The camera lowering device shall be the CLS Model CDPx-16HDy.

The lowering device manufacturer shall furnish a factory trained representative to assist the electrical contractor with the assembly and testing of the first lowering system onto the pole assembly. The manufacturer shall furnish the applicable DOT engineer documentation certifying that the electrical contractor has been instructed on the installation, operation and safety features of the lowering device. The contractor shall be responsible for providing applicable maintenance personnel "on site" operational instructions.

Suspension Contact Unit

The suspension contact unit shall have a load capacity 600 lbs. with a 4 to 1 safety factor. There shall be a locking mechanism between the fixed and moveable components of the lowering device. The movable assembly shall have a minimum of 2 latches. This latching mechanism shall securely hold the device and its mounted equipment. The latching mechanism shall operate by alternately raising and lowering the assembly using the winch and lowering cable. When latched, all weight shall be removed from the lowering cable. The fixed unit shall have a heavy duty cast tracking guide and means to allow latching in the same position each time. The contact unit housing shall be weatherproof with a gasket provided to seal the interior from dust and moisture.

The prefabricated components of the lift unit support system shall be designed to preclude the lifting cable from contacting the power or video cabling. The lowering device manufacturer shall provide a conduit mount adapter for housing the lowering cable. This adapter shall have an interface to allow the connection of a contractor provided 1.50 inch PVC conduit and be located just below the cable stop block at the back of the lowering device. The Contractor shall supply internal conduit in the pole as directed by the Lowering Device provider. The only cable permitted to move within the pole or lowering device during lowering or raising shall be the stainless steel lowering cable. All other cables must remain stable and secure during lowering and raising operations.

The female and male socket contact halves of the connector block shall be made of materials rated for outdoor use and extreme temperature ranges. The female socket contacts and the male pin contacts shall be copper (conductivity) plated with nickel (strength) plated with gold (corrosion resistance).

The current carrying male contacts shall be 12ga. (1/10 inch in diameter). There shall be four alignment contacts that are longer than the rest which will mate first and break last providing optimum grounding performance. The number of contacts shall be 16 and the camera mounted thereto, shall be capable of performing all of its necessary functions on 16 contacts or less.

The current carrying female socket contacts shall be 12ga. (1/10 inch in diameter). The female socket contacts shall be spring-loaded to provide positive mating.

A composite cable (video, data and power) will be potted and sealed into each half of the connector block. The composite cable will be a continuous run of cable from the top of the pole to the field cabinet or other junction box. No pole top splices will be allowed. The composite cable from the bottom connector will feed into the camera junction box and/or directly to the camera. The coaxial cable will be provide with BNC connectors.

804.05 - Camera Junction Box

The camera junction box shall be of two piece clamshell design with one hinge side and three quarter-turn latches to facilitate easy opening. A safety catch will be provided to prevent the camera junction box from swinging open during unlatching. The general shape of the box shall be square. The Camera Junction Box shall be cast aluminum with stabilizing weights on the inside of the box, designed with ample room inside for interconnections, surge protection, etc. The box shall be provided with 40 pounds of stabilizing weights. The bottom of the Camera Junction Box shall be drilled and tapped with a 1-1/2" NPT thread to accept industry standard dome housings and be able to be modified to accept a wide variety of other camera mountings. The junction box shall have a gasket to prevent water intrusion. The bottom of the box shall incorporate a screened and vented hole to allow airflow and reduce internal condensation.

804.06 - Materials

All pulleys for the camera lowering device and portable lowering tool shall have sealed, self lubricated bearings, oil tight bronze bearings, or sintered- oil impregnated, bronze bushings. The lowering cable shall be a minimum 1/8-inch diameter stainless steel aircraft cable with a minimum breaking strength of 1740 pounds with (7) strands of 19 wire each.

All electrical and video coaxial connections between the fixed and lower able portion of the contact block shall be protected from exposure to the weather by a waterproof seal to prevent degradation of the electrical contacts. The electrical connections between the fixed and movable lowering device components shall be designed to conduct high frequency data bits and one (1) volt peak-to-peak video signals as well as the power requirements for operation of dome environmental controls.

The interface and locking components shall be made of stainless steel and or aluminum. All external components of the lowering device shall be made of corrosion resistant materials, powder coated, galvanized, or otherwise protected from the environment by industry-accepted coatings to withstand exposure to a corrosive environment.

The Camera Manufacturer shall provide weights and /or counterweights as necessary to assure that the alignment of pins and connectors are proper for the camera support to be raised into position without binding. The lowering unit will have sufficient weight to disengage the camera and its control components in order that it can be lowered properly.

The Camera Manufacturer shall provide the power and signal connectors for attachment to the bare leads in the pole top and/or camera junction boxes