*INCLUDE SECTION 721 AS NEEDED BASED ON CLAUSE INSTRUCTIONS*

$$721.00A

**Section 721. — ELECTRICAL AND ILLUMINATION MATERIAL**

Revised 25 May 2022

*INCLUDE CLAUSE $$721.01A WHEN INSTALLING PULL BOXES FOR TRAFFIC COUNTERS (IF USED, ALSO INCLUDE APPLICABLE SECTION 636 CLAUSES)*

$$721.01A

721.01(b). Add the following:

For boxes fabricated with fiberglass reinforced polymer concrete, conform to ANSI/SCTE 77 and tier 22 loading.

Furnish a waterproof, detachable, cast iron lid conforming to AASHTO M 105, Class 30 with lift opening. Ensure the pull slots are rated for a minimum pull out of 3,000 pounds and the pull boxes are rated for a minimum wheel load of 20,000 pounds. Furnish stainless steel lock down bolts for the lid.

Furnish granular backfill conforming to AASHTO M 80, Class E and AASHTO M 43, Size Number 57 or 67.

*INCLUDE CLAUSE $$721.01B FOR TRAFFIC COUNTERS WHETHER ONLY TRAFFIC LOOPS ARE BEING REPLACED/REPAIRED, OR A FULL TRAFFIC COUNTER SYSTEM IS BEING INSTALLED (IF USED, ALSO INCLUDE APPLICABLE SECTION 636 CLAUSES)*

$$721.01B

721.01(c)(2). Add the following:

For loop detector wire, furnish type THHN #14 AWG, stranded, single-conductor conforming to the International Municipal Signal Association (IMSA) Specification 51-7.

For lead-in cable, furnish type THHN, stranded, single-conductor conforming to the IMSA Specification 50-2.

*INCLUDE CLAUSE $$721.01C FOR NEW CONSTRUCTION OR FULL DEPTH PAVEMENT PROJECTS*

$$721.01C

As an acceptable alternative to sawcutting, furnish preformed inductive loops with 3 to 5 turns of #14 AWG cable with an insulation of XLPE (cross-linked polyethylene) encased in PVC pipe for use in new construction before the pavement is installed.

*INCLUDE CLAUSE $$721.01D FOR BONDING EQUIPMENT AND HARDWARE WHEN MOUNTING CABINET ON A POLE*

$$721.01D

721.01(f). Add the following:

Furnish high strength, corrosion resistant mounting bracket, pole clamps, and related hardware.

Furnish galvanized anchor bolts, nuts, lock washers, and flat washers conforming to ASTM A153.

*INCLUDE CLAUSE $$721.01E FOR NEW CABINET (IF USED, ALSO INCLUDE APPLICABLE SECTION 636 CLAUSES)*

*IF A FAN AND THERMOSTAT ARE REQUIRED FOR THE NEW CABINET, THEN ALSO INCLUDE CLAUSE $$721.01F – VERIFY WITH PARTNER AGENCY IF FAN AND THERMOSTAT ARE NEEDED*

$$721.01E

721.01(k). Delete the Subsection and substitute the following:

**(k) Control enclosure.** Furnish a NEMA 250, *Enclosures for Electrical Equipment (1,000 V Maximum)*, Type 3R outdoor cabinet, watertight, fabricated from ⅛-inch thick ASTM B209 aluminum alloy 5052-H-32, with continuous welded seams, rounded corners, hinge with stainless steel pin, stainless steel external hardware, and backboard for mounting apparatus. The Government will furnish a padlock.

Furnish cabinet with a surge protection device conforming to Table 721-1 at the terminal block on all lead-ins.

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| **Table 721-1** | |
| **Surge Protection Device Minimum Requirements** | |
| **Criteria** | **Rating** |
| Operating voltage | 75 VDC |
| Clamping voltage | 130 VDC |
| Peak surge current | 250 A |
| Technology | Silicon breakover device |
| Operating temperature | -40 °F to 185 °F |
| Weight | 3 ounces |
| Dimensions | 1.2-inch cube |
| Note: VDC = Voltage direct current | |

Furnish a surge protections power strip, 120-volt with RJ-11 surge protection. Connect incoming phone line and modem phone line to power bar RJ-11 ports.

*INCLUDE CLAUSE $$721.01F WHEN A FAN AND THERMOSTAT ARE REQUIRED FOR THE NEW CABINET – VERIFY WITH PARTNER AGENCY IF A FAN IS NEEDED (IF USED, ALSO, INCLUDE CLAUSE $$636.07C)*

$$721.01F

As directed by the CO, furnish a tube axial compact type, 120-volt, corrosion resistant cabinet fan with a minimum 100-cubic foot per minute capacity, minimum 100,000-hour design life, maximum 40-decibel operating noise, and a five-year duty cycle. Fuse the fan at 125 percent of the motor’s ampere capacity. Ensure the fan’s magnetic field does not affect the performance of the surrounding traffic counting equipment.

As directed by the CO, furnish an inline type, single pole, 120-volt, 10-ampere cabinet fan thermostat that is adjustable in 10-degree increments from 70 to 200 °F, and with a turn-on setting that is adjustable from 90 to 120 °F. Run the fan until the cabinet temperature decreases 20 °F below the turn-on temperature.

*INCLUDE CLAUSE $$721.01G FOR SPLICES AND CRIMPS*

$$721.01G

721.01. Add the following:

**(l) Splices and crimps.** Furnish industrial grade copper-alloy wire crimps of appropriate size. Use UL listed crimp type connectors and terminals. Do not splice with wire nuts. Comply with MIL-T-7928. Do not use vinyl plastic electrical tape or liquid electrical coating as a splicing material. If needed for insulation protection, furnish cold and weather resistant, ¾-inch wide, ¼-inch thick tape and a compatible fast drying sealant applied by brush.

If soldering splice, furnish electronic-grade, rosin-core, 60 lead/40 tin solder. Do not use acid-core solder or acid-type soldering pastes.

*INCLUDE CLAUSE $$721.02A FOR POLE AND CABINET PAINT REQUIREMENTS. INCLUDE CLAUSE $$721.02A WHEN A NEW CABINET IS INSTALLED, REGARDLESS OF IT BEING MOUNTED ON A POLE OR NOT (IF USED, VERIFY WITH PARTNER AGENCY IF THE COLOR CODE IS CORRECT AND REVISE AS NECESSARY)*

$$721.02A

721.02(a). Delete the second sentence of the last paragraph and substitute the following:

For the finished coat for the pole and inside and outside of the cabinet, use epoxy modified enamel matching Federal Standard 595B Color No. 20059 (brown), unless otherwise approved by the CO.