

SECTION 672 INTELLIGENT TRANSPORTATION SYSTEMS - BASES

672.1 Description

- (1) This section describes constructing concrete bases for ITS concrete controller cabinets and camera poles.

672.2 Materials

672.2.1 General

- (1) Use schedule 40 PVC electrical conduit conforming to the electrical conduit specified in section 652.
- (2) Furnish bar steel reinforcement conforming to 505.2.
- (3) Furnish grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to 501.2.

672.2.2 Base ITS Controller Cabinet

- (1) Furnish stainless steel bolts, studs, nuts, washers, and either mechanical wedge or epoxy type stainless steel masonry anchors. Thread at least 12 inches (300 mm) of the anchor rod. Ensure that anchors conform to the following:
 - Minimum yield strength of 92,000 psi (635 MPa).
 - Minimum elongation of 14 percent in 4 inches (100 mm).
 - Minimum pull-out strength of 9000 pounds (40 kN)

672.2.3 Base Camera Pole

- (1) Furnish anchor rods, nuts, and washers conforming to AASHTO M 314 grade 55. Ensure that rods have a Charpy V-Notch test value of 15 foot-pounds (20.4 Nm) or greater at 40 F (5C). Use roll threaded anchor rods. Ensure that the entire length of the anchor rods, the nuts, and the washers are hot-dip zinc coated according to AASHTO M 232. Use zinc coated nuts manufactured with sufficient allowance to allow nuts to run freely on the threads.
- (2) Furnish grounding electrodes that are one solid rod with a minimum 8-foot (2.4 m) length and 5/8-inch (16 mm) diameter made of the copper clad type or engineer-approved equal. Furnish a separate 6 AWG stranded bare copper wire to run to pole base.

672.3 Construction

672.3.1 General

- (1) Construct concrete bases including necessary hardware at locations the engineer determines.
- (2) Construct concrete base for ITS controller cabinet and camera pole according to section 501, and provide the surface finish specified in 502.3.7.2 and as the plans show. Inspect the forming and applicable reinforcement for concrete bases before pouring the concrete. Cure the bases for 7 days before installing any material on them.
- (3) Review plans for the number, size, and direction of conduit entrances required at location before placing concrete.

672.3.2 Base Camera Pole

- (1) Drive a grounding electrode vertically into the ground outside the concrete base. Exothermically weld copper wire to the grounding electrode, run to, and terminate at a grounding lug inside the pole base.
- (2) Furnish design drawings for approval before constructing camera pole base to the engineer. Design drawings must be certified by a registered professional engineer.

672.4 Measurement

- (1) The department will measure Base ITS Controller Cabinet and the Base Camera Pole bid items as each individual base acceptably completed.

672.5 Payment

- (1) The department will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
672.0100	Base ITS Controller Cabinet	EACH

672.0200 - 0299

Base Camera Pole (length)

EACH

- (2) Payment for Base ITS Controller Cabinet is full compensation for providing and installing all materials including conduit, bushing, caps or plugs, or both, anchor rods, nuts, washers, bar steel reinforcement if required, and concrete; for excavating, bedding, backfilling, and restoration of ground to original condition including sand, concrete, or other required materials; and for disposing of surplus materials.
- (3) Payment for the Base Camera Pole bid items is full compensation for providing and installing all materials including conduit, bushing, caps or plugs, or both, anchor rods, nuts, washers, grounding electrodes, exothermic welds, copper equipment-grounding wires, bar steel reinforcement if required, and concrete; for excavating, bedding, backfilling, and restoration of ground to original condition including sand, concrete, or other required materials; and for disposing of surplus materials.