# Index 649-020 Steel CCTV Pole

## Design Criteria

***AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (LRFDLTS-1)***; ***Structures Manual (SM)***, Volume 3, FDOT Modifications to LRFDLTS-1; ***Structures Manual (SM)*** Introduction, I.6 References; ***FDOT Design Manual (FDM)***

## Design Assumptions and Limitations

See ***FDM 261*** and ***Structures Manual (SM)***,Volume 3 for additional design criteria.

The steel CCTV poles are designed for:

1. 170 mph wind speed with a 700 year Mean Recurrence Interval (MRI),
2. A one-inch maximum deflection in a 40 mph wind speed (3 second gust), and
3. A camera with an effective projected area (EPA) of 5.6 square feet and a weight of 240 pounds (resulting in an approximate one-inch pole tip deflection at 40 mph).

For future operational needs, an EPA of 25 square feet and weight of 1000 pounds can be accommodated resulting in an approximate 1¾ inch tip deflection at 40 mph. Camera vibration may need to be monitored.

Wind load is calculated assuming a maximum fill height of 5 feet. Do not use the design tables for fill heights more than 5 feet.

Foundations and base plates are designed based on the following soil criteria:

| | |
|---|---|
| Classification: | Cohesionless (Fine Sand) |
| Friction Angle: | 30 Degrees |
| Unit Weight: | 50 lbs/cubic foot (assumed submerged) |

When the designer considers soil types at the specific site location to be of lesser strength properties than shown above, an analysis is required. Auger borings, SPT borings, or CPT soundings may be used as needed to verify the assumed soil properties, and at sites confirmed to be uniform, a single boring or sounding may cover several foundations. Borings in the area that were performed for other purposes may be used to confirm the assumed soil properties.

## Plan Content Requirements

Intelligent Transportation Systems (ITS) Plans:

See ***FDM 942***. Include poles in "*Tabulation of Quantities*".

## Payment

| Item number | Item Description | Unit Measure |
|---|---|---|
| 649-2-1BB | ITS Pole, F&I, Steel - With Lowering Device | EA |
| 649-2-2BB | ITS Pole, F&I, Steel - Without Lowering Device | EA |

See the ***BOE*** and ***Specification 649*** for additional information on payment, pay item use and compensation.