Index 641-020 Concrete 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 concrete 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 weight of 240 pounds (resulting in an approximate one-half 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 one-inch tip deflection at 40 mph. Camera vibration may need to be monitored.

Wind load is calculated assuming a maximum fill height of 25 feet. Do not use the design tables for fill heights more than 25 feet.

Foundations are designed using the diameter of the pole (neglecting the non-structural concrete) and 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
641-3-1BB	ITS Pole, F&I, Concrete - With Lowering Device	EA
641-3-2BB	ITS Pole, F&I, Concrete - Without Lowering Device	EA

See the ***BOE*** and ***Specification 641*** for additional information on payment, pay item use and compensation.