Index 649-010 Steel Strain 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.

Use ***Index 649-010*** in conjunction with the following design programs available for use on the Structures Design Office Website:

- FDOT Strain Pole Program
- University of Florida Bridge Software Institute ATLAS Program

Foundation designs are based on the following conservative soil criteria which cover the great majority of soil types found in Florida:

Classification = Cohesionless (Fine Sand)

Friction Angle = 30 degrees

Unit Weight = 50 pcf (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.

Determine maximum loads placed on poles and select the required pole type meeting the requirements of: Factored Flexural Resistance (M_r) = Φ M_n, Where $M_r > M_u$

Factored Flexural Resistance at Pole Bottom (kip*ft):

Pole Type	PS-IV	PS-V	PS-VI	PS-VII	PS-VIII	PS-IX	PS-X
M_r	160	270	340	450	540	620	730

Plan Content Requirements

Roadway Plans:

Include the "*Strain Pole Schedule*". FDOT CAD Software includes an Excel template.

Signalization Plans:

See the ***FDM 327***. Summarize poles in "*Tabulation of Quantities"*.

Payment

Item number	Item Description	Unit Measure
649-1-ABC	Steel Strain Pole	EA

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