Index 17515 Standard Aluminum Lighting

Design Criteria

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 5th Edition (LTS-5); ***Structures Manual*** Volume 9, FDOT Modifications to LTS-5; ***Structures Manual*** Introduction, I.6 References.

Design Assumptions and Limitations

See notes in the ***Design Standard*** and ***Structures Manual*** Volume 9.

Selection Procedure:

Determine the height difference between the top of foundation and the top of roadway used to set the fixture mounting height, round as necessary.

1. Determine the design mounting height (40, 45, or 50 feet) and fixture arm length (8, 10, 12, or 15 feet) required.
2. The wind height at fixture equals the design mounting height for poles not on fill. For poles on fill, determine the height of the roadway above the surrounding terrain. The wind height at fixture will equal the design mounting height plus the fill height, rounded up to the next highest 5-foot increment.
3. Determine the pole design variables for each light pole.

Design:

A. Fixture Arm Length of 8-feet, 10-feet, 12-feet or 15-feet. Single arm only.
   1. Design Mounting Height of 40-feet, 45-feet or 50-feet. (May differ from Fixture Mounting Height, see Selection Procedure).
   2. 25-feet maximum height above adjoining ground surface.
   3. Design weight of luminaire assumed to be 75 lbs.
   4. Equivalent projected area of luminaire for design is 1.55 square feet.

B. No bridge or wall mounting permitted.

C. Maximum fill slope at the pole of one vertical to four horizontal. Steeper slopes can be accommodated provided the face of the slope on a horizontal projection from the foundation base is no closer than it would be if a 1:4 slope were projected from the top of the foundation.

D. Unique site circumstances where poorer soil conditions are encountered than shown on Index No. 17515 may require the foundation variables to be modified from those shown. If custom designs are required, the Geotechnical Engineer will provide the soil information to be used by the EOR during the design phase of the project.

E. Use an Importance Factor (I_r) = 0.80 (25-year recurrence interval).

Plan Content Requirements

When used on bridges, in order to minimize vibration of light poles due to traffic, locate light poles near substructure supports.

See ***PPM***, Volume 1, Chapter 7.

Payment

Item number	Item description	Unit Measure
715-41-ABC	Light Pole	EA