Index 21200 Light Pole Pedestal

Design Criteria

AASHTO LRFD Bridge Design Specifications, 6th Edition; ***Structures Design Guidelines (SDG)***

Design Assumptions and Limitations

Use this Index with Indexes 420, 422, 423, 425, 820, 821, 5210, and 5212 as appropriate.

Anchor Bolts were designed for Design Wind, Bridge Deck Height (above MLW), Luminaire Mounting Height, and Luminaire Arm Lengths of Standard (Index 17515), Light Poles.

Design of the additional bridge deck reinforcement is based on the minimum transverse top deck reinforcing required by the ***SDG***.

The pedestal and supporting deck are designed to accommodate Load Case 2; which is an Index 17515 Standard Light Pole with a 50 ft. mount height, 150 mph wind speed, located on a 75 ft. high bridge deck (above ground or MLW) with a 15 ft. arm. Load case 2 requires 4~1 ¼" diameter anchor bolts. Load Case 1 requires 4~1" diameter anchor bolts.

The working loads at the top of the pedestal for Load Case 2 are:

Axial Dead Load = 1.56 kip
Wind Load Moment about Transverse Axis = 40.6 kip-ft
Wind Load Moment about Longitudinal Axis = 28.3 kip-ft
Dead Load Moment about Longitudinal Axis = 1.69 kip-ft
Torsion about Pole Axis = 3.56 kip-ft
Maximum Shear = 1.38 kip

Locate pedestals near to substructure support to minimize vibration of the light poles due to traffic live loads. Locate the centerlines of pedestals a minimum 3'-10" away from centerlines of open joints in railings and ends of railings.

Commentary: Use of this Index with Index 424 (Corral Shape) Traffic Railings is not recommended because the Standard Corral Shape Railing cannot accommodate the required electrical conduit and embedded junction boxes (EJB's).

Plan Content Requirements

In the Structures Plans:

Show Light Pole Pedestals on Plan and Elevation, Superstructure and Approach Slab Supplemental Detail sheets. Use stations or longitudinal dimensions along bridge to define pedestal locations. Include anchor bolt diameters or load case number.

Payment

No separate payment is made for Light Pole Pedestals. See Payment Note on the ***Design Standard***.