

# Chapter 25

## Lighting Plans

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# Chapter 25

## Lighting Plans

### 25.1 General

Lighting Plans are usually a component set of plans. Projects with minor lighting may include these features on sheets in the roadway plan set or detailed on the roadway plans. When prepared as component plans they shall be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other lighting sheets. When prepared as component plans, the sheets shall be numbered consecutively with the sheet numbers prefixed by the letter “L”.

The lighting plans shall show the construction details, electrical circuits, pole data, conduits, service points, luminaires, foundations, boring details and other relevant data.

The Lighting Plans shall be assembled as follows:

1. Key Sheet
2. Tabulation of Quantities
3. General Notes (if required)
4. Pole Data and Legend Sheet
5. Plan Sheets or Layout Sheets
6. Foundation Details - High Mast (if required)
7. Boring Data Sheets - High Mast (if required)

In addition, the lighting plans may contain sheets which were prepared separately (perhaps by a sub-consultant) and incorporated into the lighting plans early in the design process (prior to the establishment of sheet numbering). As an option, these may be identified with the following prefixes and placed at the end of the numbered sequence of the lighting plans:

GL-#      Soil Survey and Report of Core Borings normally associated with the lighting plans set

## 25.2 Key Sheet

The key sheet is the first sheet in the component plans set and shall be prepared as described in **Chapter 3**. The location map, length of project box and contract plans set information are not required on this sheet when shown on the lead key sheet. Index of lighting plans shall be shown on the left of the sheet. Other data, including name, consultant contract number, vendor number, and certificate of authorization number of the firm (when plans are prepared by a consultant), shall be shown as described in **Chapter 3**.

If shop drawings are anticipated, the name(s) and address(es) of the Delegated Engineer(s) for shop drawing review(s) shall be shown on the right side of the sheet.

## **25.3 Tabulation of Quantities and Standard Notes**

The tabulation of quantities sheet lists the item numbers, description and quantity of materials. This sheet shall be placed behind the key sheet in plans assembly.

Pay item numbers shall be listed in numerical order. Provisions shall be made to show the original and final quantities per sheet or by station.

On contracts with multiple Financial Project ID's, or Federal Aid and non-Federal Aid quantities, provisions shall be made to tabulate and summarize their respective quantities.

Pay item notes and standard notes that refer to item numbers shall also be shown on this sheet. General notes shall be shown on a separate plan format sheet. This sheet shall be placed behind the tabulation of quantities in the plans assembly. On minor projects, general notes may be combined with the tabulation of quantities sheet.

## **25.4 Pole Data and Legend Sheet**

The pole data sheet shall be prepared on a standard plan format and shall include details and notes pertaining to pole placement and construction.

This sheet shall provide a listing of each pole by pole number. The following information shall also be given for each pole:

1. Circuit Number
2. Roadway Station and Offset
3. Arm Length
4. Luminaire Wattage
5. Mounting Height
6. Pay Item Number

The pay item number will indicate if the pole is a standard pole or a special design. Two pay item numbers are utilized: one for standard poles and one for non-standard poles.

The design values for light intensities and uniformity ratios shall be shown together with a legend and description of the symbols used on the plan sheets.

## 25.5 Plan Sheets

### 25.5.1 Format and Scale

The plan sheets shall be prepared on a standard plan format. The scale shall be such that all details are clear and legible. However, the scale shall not be smaller than 1" = 100'. For simple projects, or for narrow sections of a project, it may be possible to "stack" two plans on one sheet, one below the other. Stationing shall progress from left to right and shall be stacked from top to bottom. Clarity and legibility shall be preserved in all cases.

A north arrow and scale shall be shown at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, each plan portion shall contain a north arrow and scale.

### 25.5.2 Required Information

The basic information pertaining to roadway geometrics and project limits required on the lighting plan sheets is the same as that required on the plan portion of the roadway plan-profile sheets. Topography and construction details need not be shown. Utilities, drainage, signal structures, sign structures, landscape features, sidewalks, driveways, etc. shall be checked for conflicts. Those that may cause conflicts shall be shown.

The lighting layout shall be shown on the plan format. This shall be accomplished by symbols which represent poles, conduits and service points. The symbols used shall be in accordance with the requirements of the FDOT Engineering/CADD Systems Software and shall be used throughout the plans. A flag or note shall be used to identify conduit runs with conductor size or numbers different than that shown on the pole data sheet legend.

The beginning and ending of the lighting limits shall be shown on the appropriate plan sheet(s). The symbols for poles shall be shown at the correct baseline or centerline station and the approximate offset from the roadway noted.

The poles shall be flagged and specific information for each pole shall be shown. The pole number, baseline or centerline station, circuit number and offset from baseline or centerline (for high mast) shall be shown.

The service point locations shall be shown on the plan sheets as determined through utility negotiations. **Index No. 17504** of the **Design Standards** provides details for the service

point. The service point shall be shown at the location where it is to be installed. The following information is not covered on the index and must be shown on the plan sheet:

Description--voltages, phases, etc. Ex: 240/480 Volt, 3 wire, Overhead Breaker sizes--The main breaker size and the number of branch circuits and the breaker size of each.



## 25.6 Foundations and Boring Detail Sheets

The foundation design for standard conventional poles is shown in the ***Design Standards, Index 17515*** and ***Index 17503*** for non-standard conventional poles. The foundation design for standard highmast light poles is shown in the ***Design Standards, Index 17502***. These foundations do not need to be shown in the plans. Foundations for non-standard highmast poles and foundations in soil conditions weaker than those shown in the ***Design Standards*** must be designed by the responsible structures design engineer of record.

Plan sheets showing the boring data for highmast poles and non-standard foundation details shall be included in the lighting plans.

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