

# Lighting Design Analysis Report

[Project Name]

[Project Description]

[Project Location (County)]

Project FPID: [#####-#-##-##]

## Prepared for:

Florida's Turnpike Enterprise  
Mile Post 263, Building 5315  
Ocoee, FL 34761

## Prepared by:

[Company Name]  
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**Submission Information: [Phase ## (## %)]**

**Submission Date: [##/##/#####]**

Engineer of Record: [Name]  
P.E. Number: [#####]

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## Section 1 – General Description

- Describe project location.
  - Provide location map (if required).
- Describe the type and general condition of the existing light fixtures, poles, and electrical equipment (load centers, enclosures, pull boxes, etc.) within the project limits.

## Sections 2, 3, 4 – [Roadway, Underdeck, Sign] Lighting

### [2, 3, 4].1 - Design Methodology

- Describe how the lighting design was developed.
  - Discuss design alternatives (if required).
- Describe reference standards, criteria, etc. used.
- Describe lighting criteria.
- Describe any standards and specifications for light fixtures.
- Describe software used.
- Describe calculation methodology.
- Describe calculation assumptions.

### [2, 3, 4].2 - Photometric Analysis

- Provide luminaire schedule from software.
- Provide calculation summary from software.
- Provide location map showing photometric calculation zones (if multiple zones are used).
- Provide legible point by point calculations (11" x 17" pages).

### [2, 3, 4].3 - Luminaires

- Provide luminaire cut sheet from manufacturer.
- Indicate complete catalog number.

## Section 5 – Airspace Obstruction Analysis

- Provide evaluation of proximity to airport(s) and/or heliport(s).
- Provide evaluation of project site(s).
- Provide analysis of project site and nearby airport(s) and/or heliport(s) against CFR, Title 14, Part 77, 77.9 criteria.
- Provide copies of FAA Forms 7460-1 (if required) or provide "No Airspace Obstructions Letter".

## Section 6 – Load Analysis

- Provide load summary for each circuit and for the load center.

## Section 7 – Voltage Drop Calculations

- Provide voltage drop summary for each circuit and for the load center.
- Provide voltage drop calculation for each circuit and for the load center.
- Provide all equations and data used in the calculations.

### Section 8 – Short Circuit Analysis and Device Coordination

Short Circuit Analysis - (For manual calculations)

- Provide available fault current summary for each piece of electrical equipment.
- Provide available fault current calculation for each piece of electrical equipment.
- Provide one-line/riser diagram.
- Provide all equations and data used in the calculations.

Short Circuit Analysis - (For software based analysis)

- Provide data input summary for one-line/riser diagram.
- Provide one-line/riser diagram.
- Provide calculation summary from software.

Device Coordination

- Provide description of design considerations and device coordination methodology.
- Provide overlays of time current curves as needed.

### Section 9 – Arc Flash Hazard Analysis

- Provide data input summary for one-line/riser diagram.
- Provide one-line/riser diagram.
- Provide calculation summary from software.
- Provide copies of all arc flash labels.

### Section 10 – Conclusions

- Document all major design decisions.
- Document any “non-standard” design items.
- Document any items that the Turnpike should consider for this project or future projects.