HENNEPIN COUNTY
MINNESOTA

Roadway lighting design

Minimum requirements

Work must be completed under the direct supervision of a Minnesota licensed professional civil engineer.

Description

Roadway lighting design includes developing lighting analysis reports, forms and letters, supporting documentation, lighting plans, special provisions, and engineer's cost estimate for roadway lighting construction projects. This includes all required data collection, field site investigation, coordination with power companies, pole and foundation structural analysis, civil and electrical engineering design, plan preparation, special provision preparation, cost estimation, any calculations and analysis required to produce the deliverables, and providing technical support and construction inspection during bidding and construction concerning the design.

Standards and specifications

May include the following:

- National Electrical Code
- MnDOT Traffic Engineering Manual
- MnDOT Standard Plates Manual
- MnDOT Standard Specifications for Construction
- MnDOT Architectural and Aesthetic Design Guidelines
- American Association of State Highway & Transportation Officials (AASHTO) Green Book
- American Association of State Highway & Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals
- MnDOT Roadway Lighting Design Manual
- Sample lighting plans
- Sample lighting special provisions
- Illuminating Engineering Society of North America, American National Standards Practice for Roadway Lighting

Hennepin County Purchasing and Contract Services
300 South Sixth Street, Minneapolis, MN 55487
612-348-3181 | ptsroster@hennepin.us

- American Association of State Highway & Transportation Officials (AASHTO) Informational Guide for Roadway Lighting
- MnDOT Technical Manual
- American Association of State Highway & Transportation Officials (AASHTO) Roadside Design Guide
- City or state lighting design requirements
- All work completed must meet Hennepin County's CADD Standards, including the use of Bentley OpenRoads Designer Connect Edition.
- Plans will be delivered at 30 percent, 60 percent, 90 percent, and final stages, or as dictated by an associated road design project deliverables schedule.
- Plans, special provisions, and engineer's estimate will be in accordance with all standards listed above.
- The deliverables will use the proper formats, symbols, abbreviations, etc.
- The design will be adequate for the need while at the same time not over-designed.
- Photometric analysis of lighting configuration shall be provided in electronic format.
- Plans must be provided in PDF and Bentley OpenRoads Designer Connect Edition electronic files with proper level assignments.
- Text documents must be provided in Microsoft Word format.
- Spreadsheets must be provided in Microsoft Excel format.

Typical services

Project deliverables may include the following:

- A plan set may be for a stand-alone lighting system project or for lighting that is part of a larger grading/surfacing project, and includes the following:
    - Title Sheet, Estimated Quantities Sheet, Detail Sheets, Layout Sheets, "For Information Only" Sheets of Existing Lighting, Utilities Sheets, and — when construction is complete —"as-built" plans.
- A photometric analysis showing light levels, contours, and uniformity ratio for the roadway, pedestrian facility and/or bike facility; broken down by segment and intersection. Results provided in .pdf and AGI32 format.
- Special provisions defining special requirements for the construction or changes from the Standard Specifications for Construction.
- Engineer's estimate, including "quantities tabulation" and an engineer's estimate for construction cost.
- Supporting document includes meeting minutes, correspondence, applicable calculations, etc.

Published: May 2024