

HIGHWAY LIGHTING DESIGNER

DESCRIPTION: Under limited supervision, is assigned own projects and performs technical design work of broad scope, complexity, and diversity in the calculation and preparation of plans for lighting projects, including the most complex, for highways, truck-scales, rest-areas, parking facilities and related lighting engineering projects; performs related work as required.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Prepares lighting plans for all levels of lighting projects, including very complex, which include some or all of these design features: highway lighting with project construction phasing, rest-area parking and grounds lighting, rest-area interior building lighting and wiring schemes, weigh-station building and grounds lighting.

Prepares design and layout of complete lighting systems, including voltage drops, wire size and wiring diagrams, used to determine locations, quantities, types and sizes of construction materials.

Analyzing project file information and applies or modifies appropriate design standards to determine specific project design details and notes.

Revises data and information on plans, design standards, and charts to correct errors, discrepancies, and obsolete portions of construction plans.

Attends and participates in meetings on project design to explain lighting design.

Attends field inspections to gather information, visually verify details, advise construction staff and/or perform final inspections for project acceptance.

Checks the calculations, detailed drawings, finished plans and utility line drawings prepared by co-workers, consultants, and others to assure completeness, accuracy, and adherence to standard specifications or special contract provisions.

Communicates with co-workers and personnel in various federal, state, and local agencies to interpret plans or guidelines, secure services, make recommendations, solve problems and obtain clarification of design concepts or survey data.

Calculates project cost estimates by obtaining approximate costs of material from manufacturer catalogs or bid items and quantities and types of materials needed to make computations.

Writes special contract provisions.

Approves shop drawings and specifications.

Transfers survey data, sketches and information to the plans.

Assembles, files and maintains reports, project files and plans.

HIGHWAY LIGHTING DESIGNER (continued)

FULL PERFORMANCE KNOWLEDGES, ABILITIES, AND SKILLS REQUIRED: (These may be acquired on the job and are needed to perform the work assigned.)

Knowledge of: Nebraska Standard Specifications for Highway Construction; AASHTO, An Informational Guide for Roadway Lighting; IES Roadway Handbook; National Electrical Code Handbook; engineering principles related to design and construction of lighting projects including state and federal guidelines; policies and regulations regarding the design and construction of rest areas and other related projects.

Ability to: Respond to inquires at meetings; plan and coordinate multiple sections/divisions activities relating to lighting design; identify specific information from a substantial amount of related data or information in such sources as reports, survey notes, manuals, and standard specifications.

Skill in: operating the IBM PC Computer and the "Micro-Site-Lite" Lighting Program.

ENTRY KNOWLEDGES, ABILITIES, AND SKILLS REQUIRED: (Applicants will be screened for possession of these through written, oral, performance, and/or other evaluations.)

Knowledge of: Nebraska Department of Roads (NDOR) Roadway Lighting Design Standards; AASHTO Roadway Design Standards; Nebraska Standard Specifications for Highway Construction regarding lighting; mathematics including geometry, trigonometry; engineering terminology; the development process of a complete set of lighting plans; and use of plans, manuals, and project files.

Ability to: perform mathematical calculations including geometry and trigonometry manually or with the aid of a calculator or computer; read, understand, and interpret the terminology and symbols used in survey notes, plans, and aerial photographs; detect errors, discrepancies, and omissions through examination of detailed drawings, tabulations, calculations, and notes; accurately transfer information in numerical, written, or sketched form from sources such as legal descriptions, survey notes, aerial photographs, and preliminary sketch sheets to plans; understand land descriptions including units of measure and bearings.

JOB PREPARATION GUIDELINES: (Entry knowledge, abilities, and/or skills may be acquired through, BUT ARE NOT LIMITED TO, the following coursework/training and/or experience.)

Any combination of training and/or experience that will enable the incumbent to process the required knowledge, skills, and abilities. A general qualification guideline for positions in this class is a high school education or the equivalent AND education or experience in drafting electrical plans, engineering, or highway construction. Experience working with the National Electrical Safety Code and the National Electrical Code are highly desired.