STATE OF NEBRASKA CLASS CODE: V56654
CLASS SPECIFICATION
EST: 12/95 - REV: 10/11

HIGHWAY BRIDGE DESIGNER II

DESCRIPTION: Under limited supervision of a Registered Professional Engineer (PE), performs structural design work and technical geometric design work; prepares plans for assigned complex bridges and related civil or structural engineering projects; performs related work as required.

EXAMPLES OF WORK: (A position may not be assigned all duties listed and listed examples may not include all duties assigned.)

Prepares final plans for typical (concrete slab, prestressed concrete I-beam and double tee, rolled and welded plate steel) bridge projects, which may include new structures and/or rehabilitation, redecking, widening and overlay, or repair of existing structures. Bridge projects may include stream crossings, grade separations over roadways and railroads, and underpasses.

Prepares shim input data for use by field personnel during construction of the bridge; calculates final shims from survey data provided by field personnel.

Reviews consultant plans for conformity with Nebraska Department of Roads (NDOR) policies and procedures.

Communicates with other divisions within the department, other agencies and branches of government, utility companies, consultants and contractors to ensure proper plan preparation and to solve problems which develop during fabrication and construction.

Reviews shop plans, including the most complex, for general compliance and agreement with contract plans.

Reviews field construction problems, makes recommendation for corrective action, and oversees plan revisions.

Prepares design information packages for consultants to incorporate into the design plans.

Conducts independent design check and plan review of final plans prepared by co-workers to ensure completeness, accuracy and adherence to design specifications.

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

Knowledge of: "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", "Guide Specifications for Horizontally Curved Highway Bridges" and "Guide Specifications for Bridge Railings"; "ANSI/AASHTO/AWS Bridge Welding Code", "A.R.E.A. Manual for Railway Engineering", and "Americans with Disabilities Act (ADA) Accessibility Guidelines".

Ability to: prepare sketches and design computations for use by others in the development of final bridge plans.

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

Knowledge of: NDOR Bridge Design Standards and Bridge Office Policies and Procedures Manual (B.O.P.P.); moderate knowledge of "Nebraska Standard Specifications for Highway Construction"; pertinent parts of "NDOR Roadway Design Standards" "AASHTO Standard Specifications for Highway Bridges" and Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." Physics; engineering principles, including Statics, Strength of materials and engineering mechanics; soil mechanics; the development process of a final set of bridge plans.

Ability to: detect errors, discrepancies and omissions through examination of detailed drawings, calculations and notes; accurately transfer information in numerical, written or sketched form from sources such as survey notes, preliminary sketch sheets and design computations to design plan sheets; read, understand and interpret the terminology and symbols used in roadway plans, traffic signing and lighting plans.

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 possess the required knowledge, abilities and skills. A general qualification guideline for positions in this class is high school education or equivalent AND education or experience in drafting, engineering, or related bridge construction.