

### HIGHWAY MATERIALS AND TESTS MANAGER

DESCRIPTION: Under limited supervision, performs complex engineering work for the Nebraska Department of Roads (NDOR) Materials and Tests Division with a wide latitude of decision-making capabilities related to highway design practice, development of specifications, resolution of construction problems, and analysis and evaluation of material used in highway construction; and providing quality assurance oversight for highway construction and branch laboratories; 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.)

Supervises materials design and manages the flow of projects within the Flexible Pavement Section.

Prepares project cost estimates for all base and surfacing related items prior to contract letting.

Supervises the complete design process for surface rehabilitation projects and Pavement Extension Program projects.

Performs on-site inspections of asphaltic concrete or base construction problems and recommends corrective action during construction.

Prepares preliminary project cost estimates for NDOR administration, Roadway Design, Transportation Planning, Materials and Tests Engineer and District Engineers.

Prepares preliminary project cost estimates for Roadway Design estimating staff pertaining to surface rehabilitation projects and Pavement Extension Program projects.

Monitors contractors' bids to insure accuracy of future estimates.

Writes and supervises the writing of specifications and contract special provisions.

Communicates with District Engineers, Project Managers, Roadway Design engineers and contractors and makes decisions concerning contract, design, or construction issues.

Communicates regularly with District Construction Engineers and District Maintenance Superintendents to improve future specifications.

Sets expectations for and evaluates work performance of the Flexible Pavement Section staff.

Performs field inspections and determines the surface repair or reconstruction schemes that will be required for future projects.

Supervises the distribution of material design information to Quality Assurance staff, District Engineers and Project Managers.

Establishes and/or recommends policy on material testing for the Physical Tests Laboratory.

## HIGHWAY MATERIALS AND TESTS MANAGER (continued)

Provides technical assistance and guidance to Materials and Tests, Bridge, Roadway Design, Construction, Traffic Engineering and Maintenance personnel on a wide variety of manufactured products; provides plan and specification review and development for these divisions.

Coordinates research activities including testing, evaluation, design and field site selection for various concrete, metal and plastic drainage products.

Identifies, investigates, develops solutions and writes reports relating to material problems encountered on highway and bridge construction projects and the maintenance of existing highway facilities.

Reviews correspondence from the Construction Division and from contractors in order to apply price deductions when deficiencies or improper materials have been incorporated into a project.

Provides analysis of failed structures, utilizing a full range of engineering applications and applied technology, such as conducting failure analysis on items such as bridge structural components, lighting and signal structures, culverts and foundations; recommendations for design, repair or retrofit, and replacement are common.

Uses engineering knowledge to design, manufacture and repair specialized equipment used for testing and research applications in the field, as well as in the laboratory.

Corresponds with other states' Departments of Transportation, engineering consultants, contractors and other testing agencies relating to the transfer of technical information, as well as testing and material selection for state, county and federal-aid projects.

Develops and provides training for field construction personnel at the project site, as well as presentations at seminars and Project Manager conferences.

Prepares an annual budget for the Physical Tests Laboratory.

Ensures that all material testing and certification requirements are met by preparing additional estimates for coordination with individual laboratories within the Materials and Tests Division.

Releases the final estimate on construction projects after receipt and verification of required material testing and certifications; determines if contractors are due interest on outstanding payments for the materials portion of the contract.

Prepares Required Documents List showing all materials required for highway construction projects for prime contractors and project managers.

Provides technical oversight of the four NDOR branch laboratories ensuring that adequate equipment is available and resolving day-to-day problems.

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

Knowledge of: construction techniques; construction specifications; materials specifications and test methods; management techniques.

## HIGHWAY MATERIALS AND TESTS MANAGER (continued)

Ability to: plan, organize and coordinate activities of an engineering unit; read and interpret engineering plans and specifications; communicate technical engineering and/or construction materials information orally and in writing; resolve engineering and/or construction materials related problems.

Skill in: organization; the use of engineering and/or construction materials testing equipment; using software applications related to engineering and/or construction materials work.

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

Knowledge of: civil engineering and/or construction materials principles and practices; engineering specifications; supervisory techniques; engineering and/or construction materials testing techniques.

Ability to: plan, organize and coordinate activities; read and interpret plans and specifications; communicate orally and in writing.

Skill in: utilizing engineering and/or construction materials testing principles; performing complex engineering and/or construction materials testing calculations; the use of computers.

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 a civil engineering related field or experience in highway construction or material testing and reporting.

### SPECIAL NOTE

A valid driver's license is required.

Overnight travel may be required.