

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Journey Transportation Technician**

**Class Code: 040408**

**Pay Grade: GG**

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### **A. Purpose:**

Journey Transportation Technicians perform civil engineering technical functions and use developed methods and procedures to complete work assignments that meet engineering specifications such as performing material sampling and testing in the field or in a laboratory, performing inspections of construction activities, performing surveying duties, performing drilling and geotechnical data collection, and documenting work in applicable computer systems and daily dairies.

### **B. Distinguishing Feature:**

Journey Transportation Technicians perform assigned functions within established procedures; and the impact of decisions they make on duties they perform contributes to services used by others in making decisions.

Project Technicians are lead inspectors on formally let projects or a project manager on informally let projects or selected formally let projects; or may perform a combination of both options. Examples of duties include being the point of contact to answer questions from other personnel on the project when the project engineer is unavailable; interpreting plans and specifications for contractors; providing project information to external partners; inspection, testing and surveying; providing field training to new and seasonal employees when called upon; data entry into applicable computer systems; keeping a diary; and assisting with, or completing, the finaling process.

### **C. Functions:**

*(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)*

1. Performs material tests to determine if quality, placement, and amounts meet specifications.
  - a. Performs tests on construction materials to determine whether materials meet the specifications designated in the project plans by taking samples and preparing them for testing, performing required tests, and documenting test results.
  - b. Collects, tests, and records representative samples of construction materials from gravel pits, windrows, stockpiles, roadways, conveyor belts, and storage containers.
  - c. Observes concrete and asphalt plants while processing construction materials, and tests the materials.
  - d. Performs tests on construction materials in a central laboratory by preparing samples for testing, performing required tests, logging test results into the computer, sending results to the field for record keeping purposes.
  - e. Cleans, maintains, and calibrates testing and other laboratory equipment; cleans and maintains a laboratory; and assists with maintenance of a laboratory inventory.
  - f. Assists with testing material in other laboratories.
  - g. Encodes test results in the computer system, and ensures the numbers of tests being done and test results are within established parameters; and keeps a daily diary of activities.
  - h. May train other employees on how to conduct and record tests.

2. Inspects construction materials and procedures to ensure contractors are following department procedures and specifications.
  - a. Monitors earthwork activities such as checking grades for compaction and quality of materials, making sure contractors are matching slopes with slope stakes, etc.
  - b. Monitors on-site placement of paving materials by identifying surface irregularities, checking rolling procedures, and calculating application rates of materials.
  - c. Conducts inspections of bridge decks and recommends repairs.
  - d. Checks drainage structures by inspecting placement of materials; and checking elevations, and drainage slope and direction.
  - e. Inspects placement of signs and delineators.
  - f. Installs quantities of pay items in the computer system, and keeps a daily diary of construction activities.
  - g. May provide training to others if skilled in a certain function.
3. Works on surveying crews in a variety of positions to assist in establishing land measures.
  - a. Uses standard survey equipment for surveys such as preliminary alignments, slope-staking, cross-sections, right-of-way, grade control, measuring topsoil piles, setting lot corners, setting radius points, staking drop inlets, etc.
  - b. Stakes locations for installations such as traffic signals, light poles, service cabinets, conduit crossings, loop directors, junction boxes.
  - c. Surveys stockpiles.
  - d. Plots horizontal and vertical alignments from field notes, prepares field maps and charts.
  - e. Cleans, adjusts, and calibrates survey equipment.
  - f. May train others and direct the survey crew on a temporary basis.
4. Works on drilling crews and operates a variety of drilling equipment to collect subsurface and soil information.
  - a. Sets up and operates a drill rig, drives drill rods to appropriate depths, records friction bearing tests, records number of blows to drive rods from surface to refusal.
  - b. Operates other drill types as needed, e.g., auger drill for drilling holes to determine material types and to install inclinometers for long-term monitoring of ground and structure conditions; core drill to collect core samples; hollow stem auger to retrieve rods that are stuck, use as a temporary casing, drill through rock and gravel; self-propelled drill for horizontal holes to drain water and access off-road drill sites, etc.
  - c. Cleans, repairs, and maintains drilling equipment and transport vehicles.
  - d. Surveys bore hole locations, records numbers and classifications of soil samples collected, logs shallow soil horizons to secure information for soils reports, restores and cleans sites upon completion of field work.
  - e. Prepares samples and cleans samplers.
  - f. May train other drillers in drill operation and safety procedures.
5. Performs other work as assigned.

#### **D. Reporting Relationships:**

Reports to an Engineering Supervisor. Does not supervise.

#### **E. Challenges and Problems:**

Challenged to complete material tests efficiently and in a timely manner so that contractors are not delayed on construction projects. This is difficult because it requires that the correct sampling procedures be followed in collecting material, that the correct amount of material be

selected for the test, knowledge of the current procedures to follow for testing each type of material, and knowledge of specialized equipment and record keeping procedures.

Challenged to inspect construction procedures which requires close attention to work in progress. This is difficult because there may be a lot of activity happening simultaneously, appropriate measurements and monitoring must occur without significant interruption of work flow, work must be stopped if processes are incorrect, corrective actions must be identified and implemented by contacting the project engineer, and specific documentation of each procedure must be meticulously kept as a basis for contractor reimbursement for work done.

Challenged to be a surveyor. This is difficult because it requires working with large amounts of data and recognizing when data may be skewed or inadequate, observing topographical surroundings to identify those that may have an impact on project development, staying current with rapidly changing technology, working in arduous conditions, and working around traffic and equipment in operation.

Challenged to be a drill operator. This is difficult because, all at the same time, it requires watching the gauges and water and air pressures; listening to the equipment for changes in sounds such as a pull-down of the motors; feeling the drill vibrations, pull or lift on the base vehicle; deciding when to increase or decrease revolutions, stop drilling, add water or air; and watching others working around the drill, making sure they are following proper safety procedures while performing their work.

#### **F. Decision-making Authority:**

Decisions include accomplishing assigned functions by selecting the procedures and methods to use from among available choices but requiring the use of judgment in selecting and applying those that are the most appropriate. Decisions produce an end result or standard product or provide a service used by others to make decisions that affect project, program, or organizational objectives.

#### **G. Contact with Others:**

Daily contact with supervisory engineers to receive work direction, with contractors' superintendents to discuss work activities, with coworkers to provide or receive training or exchange work information, and with field staff to exchange information on samples and tests and surveying activities; and occasional contact with the general public to answer questions.

#### **H. Working Conditions:**

Working as a material tester requires exposure to high heat, chemicals, and noise in a laboratory, and in the field exposure to equipment in operation, pressures of time and speed in accomplishing work, traffic, and noise; working as a construction inspector requires close work among varying types of construction equipment in operation, and often working near traffic; working as a surveyor requires exposure to varying environmental conditions, usually in the winter, often along existing highways where traffic is an element of risk, also working off-road which requires extensive walking over rough terrain and conditions while carrying cumbersome and heavy equipment; and working as a driller has extreme conditions of dangerous fast-moving equipment, working around traffic and in remote areas, and extended travel.

## **I. Knowledge, Skills, and Abilities:**

Knowledge of:

- technical processes and methods needed to perform duties associated with transportation engineering and construction; mathematics.

Ability to:

- read and follow construction plans;
- interpret, comprehend, and implement department specifications and special provisions;
- operate, calibrate, and repair assigned equipment;
- keep records of work in accordance with department guidelines;
- provide work direction and training to others;
- prioritize daily work based on department requirements and contractor activities;
- communicate effectively with coworkers, landowners, contractors' employees, and the traveling public;
- consistently apply common courtesy in working with others.

## **J. Licenses and Certificates:**

*(Used for announcement purposes only.)*

Incumbents must have a valid driver's license and must have or obtain a valid commercial driver's license (CDL) within sixty days of hire date to retain employment. The incumbent must have a Class A CDL with the tanker endorsement and no restrictions in order to operate any Class A vehicle that is a truck-tractor/semi-trailer, with manual transmission. The CDL must include an N endorsement (tank vehicle) for specific positions and must have no transmission restrictions.