

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Region Operations Technician**

**Class Code: 40411**

**Pay Grade: GH**

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### **A. Purpose:**

The Region Operations Technician is an expert in a specific field of operations that requires the application of engineering technology, and provides quality control over activities in that field within a geographical region of the state to ensure ongoing compliance with applicable department laws and rules.

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

Region Operations Technicians conduct certified bridge inspections throughout the Region; or conduct Independent Assurance (IA) testing for an Area within the Region; or conduct traffic safety data collection and design traffic control plans for the Region; or implement the Beautification program throughout the Region.

### **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 certified bridge inspections to review, evaluate, and rate condition; and determine if temporary maintenance or major improvements are required.
  - a. Schedules inspections within structure categories to comply with state and federal policies.
  - b. Examines structures on site for deficiencies in roadway approaches, guardrails, decks, superstructures, and substructures according to National Bridge Inspection Standards (NBIS).
  - b. Performs soundings and measurements to determine channel profiles and existence of scour.
  - c. Inspects and monitors fracture-critical members on steel structures.
  - d. Determines if deterioration or other problems have affected the integrity of structures and recommends more frequent inspections.
  - e. Notifies Area Engineers and maintenance personnel of needed repairs to structures and provides expertise on materials and methods to be used.
  - f. Conducts final inspections of new and rehabilitated structures in conjunction with area personnel, recommends corrective actions when necessary, and writes a report to the Transportation Region Engineering Specialist – Bridge.
  - g. Recommends maintenance research projects, assists in application of new products, and monitors results.
    - i. Conducts literature reviews of new or different types of materials.
    - ii. Identifies structures in the region that need repair and might benefit from new materials.
    - iii. Assists researchers in application of materials.
    - iv. Monitors and reports results.
  - h. Inspects surface maintenance projects and prepares final documentation.

2. Conducts and reviews Independent Assurance (IA) tests in a region; and coordinates region materials laboratory activities to ensure that materials, procedures, products, and equipment are in compliance with specifications.
  - a. Observes area personnel collecting and processing acceptance tests at construction sites, collects IA samples and processes them in the region laboratory, and compares test results for compliance with testing procedures and rates of acceptance.
  - b. Teaches correct collection and testing methods on the job, and inspects field laboratories for compliance with proper specifications.
  - c. Examines project documentation for completeness and accuracy, checks for certifications, facilitates acquisition of missing test reports and certifications, and prepares reports of findings.
  - d. Maintains region materials equipment and warehouse inventories.
    - i. Prepares testing equipment for projects.
    - ii. Issues warehouse items on request.
  - e. Locates sources of borrow and aggregate for construction projects.
    - i. Meets with landowners to verify permission to drill.
    - ii. Determines locations of test holes to be drilled.
    - iii. Operates drilling equipment and vehicles.
    - iv. Collects core samples and keeps notes on test sites.
    - v. Calls for locations of underground utilities.
  - f. Conducts commercial plant inspections and testing to determine acceptance of concrete reinforced pipe and precast products.
    - i. Tabulates data and issues test results to field office and suppliers.
    - ii. Notifies suppliers of failing test results.
3. Conducts traffic studies, and prepares complete plan sections for traffic control, detours, permanent signing, traffic signals, roadway lighting, and flashing beacons to assist region programs.
  - a. Conducts traffic safety studies for new sign locations, e.g., does traffic counts, speed studies, visual or turn movements, traffic volumes; and recommends changes where warranted.
  - b. Diagrams accidents, identifies problems, and recommends signing solutions.
  - c. Designs plans for traffic signals, permanent signing, flashing beacons, roadway lighting, school and pedestrian crossings, and pavement markings.
  - d. Marks regions' no-passing zones, making sure they are redone after overlays.
  - e. Designs traffic signs and sign supports for use in construction projects, in signing plans, and for replacements.
  - f. Designs and orders signs from commercial vendors and the state penitentiary, ensures fabrication is correct, and distributes as needed.
    - i. Determines legend, symbol height and placement, spacing and sign size.
    - ii. Determines what types and sizes of supports to use.
    - iii. Gets federal approval for sign designs in projects with federal funds.
    - iv. Authorizes signing work orders for maintenance crews.
  - g. Designs plan sheets for traffic control through each phase of construction and for detours, compiles quantities, and writes plan notes instructing contractors about requirements and payment procedures.
  - h. Designs plan sheets for permanent signing and pavement marking, including selection of standard plates, calculation of quantities, plan notes, and design of project-specific marking such as tapers, turn lanes, etc.

4. Implements the Beautification Program in a region to comply with federal and state guidelines.
  - a. Drives state roads in the region annually to check billboards, and takes pictures and updates inventory with current conditions.
  - b. Issues permits for new billboards by verifying legal descriptions, ensuring zoning is commercial, checking sites, and determining spacing.
  - c. Identifies billboards that are put up without a permit, finds landowners and sign owners and explains permitting process.
  - d. Authorizes billboards, or recommends removal if necessary and testifies in court.
  - e. Recommends screening for salvage yards and assists owners to comply with regulations.
  - f. Maintains inventories and data specific to locations of billboards and salvage yards.
5. Performs other work as assigned.

**D. Reporting Relationships:**

Reports to a Region Operations Engineer and may work with a Region Engineering Specialist in the same specialty. Does not supervise but provides expertise in a technical specialty to other staff.

**E. Challenges and Problems:**

Challenged to interpret and implement the guidelines of a specialty program, perform the work necessary to ensure compliance with the guidelines, and teach and train others to follow the guidelines to achieve compliance. This is difficult because while the guidelines may be applied uniquely to individual situations, they must still fall within the overall interpretation and be applied consistently and equitably throughout the region and the state; because the impact of noncompliance with guidelines may be catastrophic which creates extreme pressure on the individual in charge of the program to ensure compliance; because it requires the incumbent to evaluate unclear factors and make judgments and projections; because decisions may be challenged in court and incumbents must be prepared to testify to their decision-making; and because of the sheer size of the regions, the distances that must be traveled, the numbers of structures to inspect, tests to evaluate, signs to monitor, traffic data to collect, design criteria to follow, deadlines to meet, etc. Further challenged to maintain knowledge of current program guidelines by constantly reading, researching, and reviewing documentation and specifications, memorandums of information, laws and rules; and implementing the necessary changes throughout region processes.

Problems include explaining noncompliance to others and helping them to make corrections while still regulating the activities, working on multiple projects simultaneously, coordinating work schedules with other staff members and monitoring work progress to ensure timely completion, working outdoors in adverse conditions, keeping equipment operating correctly and safely, getting access to property from private landowners, etc.

**F. Decision-making Authority:**

Decisions include how to most effectively use available tools to make programs function smoothly and in a timely way such as which components of structures need repair and the methods and materials to be used; whether to increase structure inspection frequency because of deterioration; schedule of structure inspections and equipment, manpower, and traffic control needs during inspections; whether or not to close a structure temporarily because of an

emergency situation; noncompliant items in final structure inspections; evaluation of research materials in specific structure projects and situations and recommendation for use or not; location and number of test holes to drill in a particular area to determine materials present; soil profiles; testing schedules and equipment and forms needed; whether or not testing equipment is calibrated within compliance standards; whether or not material being tested meets specifications; whether or not sampling and testing are done within guidelines; whether or not billboards and sites are legal and whether to initiate contact with owners to make corrections; target areas in which to conduct speed and safety studies; drafts of traffic control plans; whether or not a sign is warranted in a particular location; whether applicants are eligible for signing programs; methods of tracking, collecting, and depositing fees; location of no-passing zones; etc.

Decisions referred include bridge repairs that must be contracted; permanent closure of structures to traffic; whether deficiencies found in final inspections should be repaired, replaced, or penalized; research products and structures on which to test them; structure problems that are critical; purchase of equipment and materials; approval of drilling locations for materials and final evaluation of material quality; action on IA samples that don't meet allowable tolerances; resolutions to improper testing procedures and equipment; final approval of designs and traffic control plans; approval of sign purchases; changes in speed zones; initiation of legal procedures because of noncompliance with beautification program guidelines; resolution of disputes over beautification program laws; etc.

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

Daily contact with Region Engineering Specialists regarding activities and issues in the specialty area; with Area Highway Maintenance Supervisors regarding structure repairs and maintenance; with mechanics to schedule routine maintenance and repairs on equipment; with contractor personnel to monitor sampling, testing, and testing equipment; with Area personnel to coordinate IA testing; occasional contact with landowners for permission to enter their land and prospect for materials; with utility companies to locate cable and pipe lines; with Registers of Deeds to verify legal descriptions; with county highway superintendents to determine areas they want drilled; with billboard and salvage yard owners to resolve issues of noncompliance and explain program laws; with city and county governments to schedule traffic and safety studies; and annual contact with city and county governments to report on structure inspections within their jurisdictions.

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

Work is done in a typical office environment. Work also involves being around traffic and construction equipment, being suspended in a snooper truck over river beds and riprap or climbing riprap and inclines, climbing on superstructures of bridges, being outdoors in adverse weather conditions, lifting heavy items routinely, use of chemicals and heat in some tests, obtaining samples from conveyor belts, and working around drills and other hazardous equipment.

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

Knowledge of:

- National Bridge Inspection Standards (NBIS), the bridge coding system PONTIS, and structure maintenance and repair techniques;
- traffic control standards;
- construction materials, and testing and prospecting procedures and equipment;
- land measures and legal descriptions;
- data collection and evaluation techniques.

Ability to:

- interpret, comprehend, and implement federal and state laws and rules, and department policies;
- interpret and comprehend construction plans;
- operate safely and maintain specialized equipment;
- use Microstation engineering design software to draft plan sheets and calculate quantities;
- train other staff and monitor and direct their work;
- organize and prioritize work assignments for self and others;
- communicate information clearly and concisely;
- work outdoors in all types of weather and lift heavy items routinely;
- establish and maintain effective working relationships with staff, contractors, and the public;
- use a computer.