

TRANSPORTATION GENERALIST

KIND OF WORK

Skilled road maintenance and/or para-engineering work on Minnesota's transportation system.

NATURE AND PURPOSE

Employees in this class are generally assigned to one or more of the following business lanes: bridge, contract administration, project development, road signing and pavement marking, roadside maintenance, roadway regulation services, roadway surface maintenance, snow and ice removal, soils and materials laboratory, surveys and right of way, and traffic engineering.

BUSINESS LANES

Bridge

- Perform bridge maintenance and repair work.
- Apply journey level skills in carpentry, masonry and metal fabrication in maintenance and repair work.
- Perform waterway maintenance.
- Perform bridge flushing.
- Transport materials and equipment used in bridge maintenance and repair to job site.
- Operate and maintain heavy equipment (e.g. tractors, tractor trailers and forklifts).

Contract Administration

- Field test construction materials.
- Conduct routine roadway construction inspections including monitoring contractor's personnel to make sure they comply with processes, practices and specifications.
- Enter data into CAARS.
- Conduct field counts of construction materials (delivered or consumed).

Project Development

- Measure and estimate project materials and supplies.
- Locate known survey points on project plans and locate plan items in the field.
- Perform basic design functions using Microstation CADD system and GEOPAK.
- Compute estimated quantities and volumes.
- Read and interpret construction plans.

Road Signing and Pavement Marking

- Read and interpret plans.
- Fabricate, repair, remove, assemble and install road signs.
- Operate striper console.
- Mark pavements.
- Operate and maintain heavy equipment.

Roadside Maintenance

- Maintain and construct gravel, bituminous and concrete road surfaces.
- Perform landscaping activities including planting, watering, mowing, conducting vegetation surveys and applying herbicides.
- Repair road surfaces (e.g. pothole patching and sealcoating).
- Perform controlled burning.
- Remove trees and brush.
- Install and repair road approaches.
- Inventory, inspect and repair drainage structures.
- Install and repair guardrails and snow fences.
- Operate and maintain heavy equipment.
- Use power and hand tools.
- Assemble and set up temporary signs.
- Install and repair mailboxes.

Roadway Regulation Services

- Obtain information needed for permits.
- Establish and maintain relationships with landowners, contractors and the general public.
- Review advertising, access, junkyard and utility permits for compliance.
- Research Right of Way maps.
- Review “as-built” permits to update permit records.

Road Surface Maintenance

- Operate ribbon/machine patching equipment.
- Perform finish blade operations.
- Perform mud jacking operations.
- Recognize and fix hazards and road surface defects.
- Operate and maintain heavy equipment such as Class 33 snowplow, front end loader and snow blower.
- Operate and maintain gas, electric and pneumatic power tools such as chain saws, jackhammers and skill saws.
- Calculate quantity and volume of materials needed for surface repair projects.
- Assemble and set up temporary traffic control signs on work sites.
- Recognize and report roadside problems and hazards.

Snow and Ice

- Remove snow and ice using heavy equipment (e.g. 4-wheel drive loader, skid-steer and tractor with loader, blower or bucket attachments).
- Determine anti-icing and de-icing parameters.
- Mix and store anti-icing and de-icing materials.
- Load, operate and maintain snow plow.

Operate and maintain heavy equipment.

- Apply salt, sand, brine and anti-icing agents to road and bridge surfaces.
- Monitor bare pavement indicators for compliance with standards.

Soils and Materials

- Complete and document routine field and lab construction tests and inspections.
- Determine Pass/Fail on materials being tested.
- Operate auger truck.
- Take soil borings.
- Operate Pearpoint camera.
- Test samples of construction and/or maintenance materials.
- Maintain and operate laboratory equipment.
- Modify and calibrate testing and laboratory equipment to meet specialized needs.
- Verify and record incoming samples.

Surveys and Right of Way

- Serve as Rod person.
- Set up and orient tripod.
- Record survey equipment read-outs.
- Operate survey equipment such as level, tape, chain, plumb bob, 2-way radio and distance meter.
- Read and interpret maps and plans.
- Perform basic drafting using Microstation.
- Measure distances and angles.
- Locate known survey points.
- Set up and calibrate Total Station and GPS systems.
- Perform routine drafting of Right of Way maps (routine is defined as few roadways, mostly straight roads and few parcels).
- Record and perform a variety of technical computations on survey data.
- Assist in field operations of a survey crew performing 1st and 2nd order geodetic control surveys and 3rd order control surveys.
- Assist in maintaining survey instruments and equipment.

Traffic Engineering

- Log roadways.
- Conduct inventory of signs.
- Conduct field sign inspections.
- Operate retro-reflectivity equipment.
- Collect turning movement data.
- Conduct speed surveys or similar traffic studies.
- Assist in preparing downloaded Microstation files into signing design files.
- Assist with sign panel designs.
- Assist in assembling standard details and drawings.

SEARCH STRATEGIES (KNOWLEDGE, SKILLS AND ABILITIES)

Minimum Qualifications:

Required qualifications for each specific position/vacancy will be developed based on criteria identified by MnDOT's Human Resource Office. For example, some positions/vacancies may require a Commercial Drivers License plus one year related work experience. In some positions/vacancies an AA/BS degree in Civil Technology, Surveying, Architectural Drafting, Mechanical Drafting or related degree may substitute for other requirements.

Preferred Qualifications:

Preferred qualifications for each specific position/vacancy will be developed based on criteria identified by MnDOT's Human Resource Office. For example, in some positions/vacancies experience using CADD may be desirable, but not necessary.

Est.:

Rev.:

Ckd.:

T.C.:

Former Title(s):