

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Highway Maintenance Worker

Class Code: 080912

Pay Grade: GG

A. Purpose:

This position performs highway maintenance activities such as plowing and hauling snow, applying snow and control materials, patching asphalt surfaces, filling roadway joints and cracks, flagging and directing traffic, setting up traffic signs, hauling materials and supplies, mowing, clearing brush, spraying weeds, removing trash from roadways and ditches, repairing and replacing road signs and guard rails, etc. Work involves operating electronic and computerized applications and equipment such as truck-mounted snowplows, sanders, loaders, paint stripers, dump trucks, pickups, oil distributors, deicing liquid trucks and tractor-mounted mowers.

B. Distinguishing Feature:

Highway Maintenance Workers function independently with general supervision, perform a variety of highway maintenance procedures, operate specialized equipment, utilize computer hardware and software and electronics and provide on-the-job training to assigned seasonal employees and trusties.

Lead Highway Maintenance Workers coordinate and perform daily work activities and provide work direction to highway maintenance staff and temporary and seasonal employees.

Highway Maintenance Supervisors determine, prioritize and assign work to designated highway maintenance units, and supervise.

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 roadway rehabilitation activities to maintain and extend the service life of existing roads and rights-of-way.
 - a. Repairs and replaces asphalt surfaces.
 - i. Applies asphalt with a lay-down machine.
 - ii. Levels and compacts asphalt surfaces with rollers and motor graders.
 - iii. Calibrates oil distributor spray bar to fit project type and applies oil.
 - iv. Determines required chip spread, calibrates spreader gates, and applies chips.
 - iv. Hand patches asphalt roadways.
 - b. Repairs spalls in concrete surfaces.
 - i. Removes damaged concrete with concrete saws, jack hammers, and mounted pavement breakers.
 - ii. Sets forms, places and ties steel, and finishes concrete.
 - iii. Drills holes with rock drills to place tie and dowel bars.
 - iv. Finishes concrete with power screeds and concrete vibrators.
 - v. Checks concrete strength with Swiss hammers.
 - c. Levels base courses and finishes shoulders with a motor grader.
 - d. Stockpiles aggregates with loaders and crawler tractors.
 - e. Uses loaders and dump trucks to break up old surfaces and haul and stockpile material.
 - f. Mows roadway shoulders and rights-of-way with rotary mowers, and applies herbicides to control vegetation.
 - g. Operates a backhoe to remove and replace culverts, and reshape ditches.
 - h. Obtains clearance to work in rights-of-way.

- i. Use GPS equipment to document condition of assets.
2. Installs and replaces signs, traffic control devices, and pavement and roadway marking to provide direction and safety for users and builders of the state highway system.
 - a. Paints pavement marking stripes by driving a striping truck and operating paint guns.
 - b. Lays out and installs pavement marking patterns.
 - c. Installs, repairs, and replaces traffic signs using a digger-derrick truck.
 - d. Places traffic control devices at work sites according to standard traffic control plans.
 - e. Repairs or replaces damaged or downed signs.
 - f. Document sign repair and maintain inventory in computer data base.
 3. Performs structure repair and rehabilitation activities to extend structure life and make sure they are safe.
 - a. Checks for damaged concrete in bridge decks by using a chain drag and hammer.
 - b. Drills holes into voids, vacuums them, and injects epoxy with epoxy guns.
 - c. Repairs approaches to structures.
 - i. Drills holes with rock drills.
 - ii. Uses a mudjack to mix slurry and raise the concrete.
 - iii. Injects slurry into drilled holes.
 - d. Operates snooper, scissor, and bucket trucks to repair and paint structure and substructure components.
 - e. Cleans bridge decks with pressure washers and sandblasters.
 - f. Examines bridges where accidents have occurred and makes temporary repairs.
 4. Performs winter-time highway maintenance to allow public mobility and safer traveling conditions.
 - a. Conducts morning weekend, and holiday road inspections to determine local weather and road conditions.
 - i. Evaluates conditions and calls local reserve employees as needed.
 - ii. Notifies managers and local authorities of conditions.
 - iii. Enters road condition in IRIS road condition reporting application.
 - iv. Monitors weather and road condition forecasting on MDSS application.
 - b. Removes snow from roadways with truck-mounted plows, four-wheel drive trucks with snow blowers, road graders, loaders, and dozers.
 - c. Mixes and stockpiles ice sand with loaders.
 - d. Distributes de-icing chemicals and abrasive utilizing truck equipped computerized system to alleviate icy conditions.
 - i. Uses truck equipped MDC units to monitor recommended rates.
 - ii. Determines proper material and applications rates based on roadway conditions.
 - e. Manufactures liquid de-icing salt brine.
 5. Maintains and repairs department facilities, rest areas, and roadside parks.
 - a. Maintains and repairs shop buildings, fences, and parking areas.
 - b. Removes and replaces damaged items.
 - c. Paints buildings, shelters, and tables.
 - d. Repairs parking lots.
 6. Performs preventive maintenance and equipment repair to ensure compliance with scheduled maintenance requirements or as needed to accomplish assigned tasks.
 - a. Repairs equipment at job sites.
 - b. Changes oil and other fluids, and lubricates equipment.
 - c. Welds as needed for equipment repairs.
 - d. Purchases parts as needed.
 - e. Responsible to inspect and maintain equipment.
 - i. Perform minor equipment maintenance and repairs.

ii. Wash equipment.

7. Respond to emergency calls such as stranded motorists, hazardous material spills, and accidents.
 - a. Answers calls about weather conditions.
 - b. Calls for emergency services at accident sites and provide assistance to safely maintain traffic through the accident site.

8. Performs other work as assigned.

D. Reporting Relationships:

Reports to a Highway Maintenance Supervisor or an Operations Engineer. Receives daily direction from Lead Highway Maintenance Worker. Does not supervise but may provide on-site training to new employees and seasonal or reserve employees and trusties.

E. Challenges and Problems:

Challenged to know and implement maintenance procedures without direct supervision; and to safely operate a wide variety of wheeled and tracked vehicles, construction equipment, and hand-held tools. Further challenged to complete tasks within deadlines and in accordance with maintenance standards. This is difficult because of influences such as time, weather, changing conditions, traffic, and equipment malfunctions and breakdowns. Varying weather conditions requires crews to be available to report to work on weekends, holidays and at unusual times of day or night. This also may involve reporting to work on short notice and working long hours for extended periods of time.

Problems include work carried over that forces reprioritizing the next day's work, keeping equipment operational, working in unfavorable weather conditions, handling hazardous materials, keeping work sites safe for the public and employees, coordinating with other crews to exchange labor for larger projects, and making quick and correct responses in unpredictable circumstances.

F. Decision-making Authority:

Decisions include identifying maintenance needs, whether to reprioritize assigned work or contact the lead worker for direction, whether assigned seasonal and inmate employees have reached an adequate skill level, the effect of changing conditions on the work at hand, whether the work site is appropriately marked and as safe as possible, equipment calibration and adjustment to apply appropriate rates of applicable material, monitor roadway conditions and recommendations to determine appropriate de-icing chemical usage and application rates, the necessary setting and speed required to remove snow to the appropriate level without endangering driver and equipment and damaging the road, how and when to service and repair equipment, and whether parts need to be repaired or replaced.

Decisions referred include daily work assignments, rehabilitation methods and procedures, materials and rates of application, extent of winter operation, extent of equipment repair, and safety guidelines.

G. Contact with Others:

Contact with the public in traffic control situations, and to provide direction and assistance; and occasional contact with department managers and contractors to review a project in progress, and with emergency personnel regarding traffic accidents or hazardous material spills.

H. Working Conditions:

Works in all weather conditions and extremes; in high-volume, high-speed traffic; around heavy equipment; in dust and noise; around hazardous chemicals, hot material, fire and petroleum product combinations; at high elevations above ground and water; and near utility lines. Work involves heavy lifting; driving in extreme weather and with poor visibility; and being called to work on weekends, holidays, and at night; working long days for extended periods.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- safe operation, maintenance and repair of equipment;
- operation and maintenance of a wide variety of hand and power tools;
- preventive maintenance methods such as changing oil, rotating tires, and lubricating parts;
- on-the-job safety practices as they relate to operating equipment and tools, and handling chemicals such as weed spray, road oils, deicing chemicals;
- use and application of various construction materials;
- work zone traffic control procedures;
- weather conditions and the effect on roadway surfaces;
- computer applications;
- electronic systems to operate various equipment and devices.

Ability to:

- drive and operate manual transmissions;
- operate and maintain a variety of road construction equipment safely and effectively;
- use and maintain hand tools such as chain drags, drills, jackhammers, epoxy guns, pressure washers, sand blasters, power drills and saws, impact wrenches, etc.
- lift and carry as much as 75 pounds routinely, push and pull heavy objects;
- sit for extended periods in rough riding equipment and walk or stand for extended periods;
- routinely kneel, bend, stoop and twist to perform work activities; climb on and crawl under equipment;
- assess changing weather conditions and their effect on the work at hand;
- work outdoors in all weather conditions;
- work around hazardous materials, dust, traffic, and noise; and at high elevations over ground and water;
- work extended hours for an extended period of time;
- be on call and report to work at unusual times of the day or night;
- communicate sufficiently to read and understand written directions and follow and convey instructions;
- provide on-the-job training to seasonal employees and trustees;
- learn and utilize computer applications to complete time forms, receive material recommendations, enter road conditions, document material usage and monitor weather forecasts;
- operate multiple complicated electronic systems.

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.