



**STATE OF MONTANA
MONTANA DEPARTMENT OF TRANSPORTATION
JOB PROFILE**

Update
Formal Review

Date Submitted _____

SECTION I - Identification

Working Title:
Surveyor III

Department:
Transportation

Class Code Number: 171256

Division & Bureau:
District or
Engineering Division, Highways Bureau

Class Code Title:
Surveyor

Section & Unit:
District Survey Unit or
Photogrammetry & Survey Section

Pay Band: 6 (Level 1)

Work Address:
Statewide

Position Numbers: 90768, 91948, 91308, 91318, 90098,
35013, 35014, 98099, 92518, 35003, 32054

FLSA Exempt FLSA Non-Exempt Non-Union MPEA Blue Collar

Profile Completed By:
Bryce Larsen & District Surveyors

Work Phone:
406-444-6321

Work Unit Mission Statement or Functional Description:

The MDT's mission is to serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality and sensitivity to the environment.

The Highways and Engineering Division prepares projects for bidding and coordinates highway construction. The division is made up of the Preconstruction and Construction programs; and five District Construction Offices in Missoula, Butte, Great Falls, Glendive, and Billings for budget and workforce purposes.

The Preconstruction program plans and develops details for construction projects. This includes determining location and design features, conducting public hearings and working with local officials, acquiring property for right-of-way and processing contracts up to the time they are awarded to private contractors. The Highways Bureau is made up of diverse programs in the Road Design, Hydraulics and Photogrammetry and Survey Sections.

The Photogrammetry and Survey Section is responsible for the Montana Department of Transportation's photogrammetry and survey programs. Acting as the authority on survey issues for the Department, the Survey Unit is responsible for providing land surveying services, analyzing and reviewing surveys, coordinating surveys, formulating and implementing MDT survey policy, assuring

quality of surveys, securing and managing survey data, serving as the MDT's technical support and resource center for survey issues, and determining and implementing time efficient and cost-effective survey methods.

Each District has a District Survey Unit that is administratively under the District Engineering Services or District Construction program and is under the technical oversight of the Helena Photogrammetry & Survey Section. The District Survey Units are responsible for providing land surveying and support services at the District level.

Describe the Job's Overall Purpose:

This position is a professional land surveyor (**Surveyor III**) for the MDT. The position is responsible for planning and performing professional survey work. Examples of duties include: organizing and overseeing straightforward survey projects, signing off on uncomplicated survey projects, analyzing evidence to determine boundary locations, staking/monumenting property boundaries, coordinating survey reviews to ensure quality, consistency, efficiency, and compliance with established standards and policies, making professional level survey calculations, carrying out complex drafting, providing training to field survey crews and coordinating the operation and maintenance of survey equipment within the Unit. The Survey III is in responsible charge of all survey work being performed under their PLS license. The position reports to the Land Survey Manager or District Land Survey Manager.

SECTION II - Major Duties or Responsibilities

% of Time

A. Survey Project Management

70% of Time

Plans and performs a variety of professional level survey duties in support of ongoing land survey projects and operations.

1. Researches public and private records (i.e.- Bureau of Land Management, National Geodetic Survey, United States Geological Survey, county courthouse, county surveyors, private surveyors, etc.) to recover title, monument, and/or other survey histories pertinent to the survey being conducted. Evaluates recovered records and determines how the information is to be utilized.
2. Makes landowner contacts to solicit and provide survey related information, to obtain permission to survey and to identify and resolve minor survey related complaints and concerns.
3. Coordinates and manages land surveys to establish lost or obliterated property and property controlling corners. Establishes proper corner search methods and procedures for survey crews, researches and analyzes public and private corner location records and recovers and evaluates corner location evidence in the field.
4. Approves and signs routine survey documents. Signature and authorization of the most complicated documents will be handled by District Survey Manager, Survey Project Manager or Land Survey Manager.
5. Directs and oversees the investigation and recovery of field evidence to establish reference points and determine boundary and/or monument locations. This includes comparatively analyzing historical records; making professional judgments as to the character and validity of monuments (historical monuments include stream banks, trees, boulders, etc.); perpetuating corners in accordance with the Corner Recordation Act; ensuring new monuments match the legal deeds as filed in public records; and preparing and publishing all required documentation.

6. Perpetuates public land survey corners in accordance with the Corner Recordation Act by compiling, completing, and certifying corner recordation documentation.
7. Solves problems that arise during surveys. This includes correcting inaccuracies in surveys, identifying and obtaining missing data, communicating with landowners, troubleshooting survey software, and resolving a variety of other ambiguities, problems or issues.
8. Directs the preparation of reports, studies, summaries, and legal documents related to land survey projects to ensure sound judgment and business practices are incorporated. Organizes, computes, adjusts, and analyzes collected field data to make and document final survey related decisions.
9. Oversees subordinate surveyors, provides training and technical assistance; and analyzes and summarizes final survey data.

B. Survey Review and Approval 10% of Time

Coordinates review of in-house surveys to ensure quality, consistency, efficiency, and compliance with standards and policies. This position has sign-off authority and responsibilities for corner recordations and unambiguous certificates of survey. Signature and authorization of more complicated documents will be handled by District Survey Manager or Survey Project Manager or Land Survey Manager.

1. Determines the validity of evidence and methods used in reestablishing corner positions, reviews accompanying legal documents, makes final computations and adjustments, and organizes and outlines survey information in a format usable by others.
2. Reviews, modifies as necessary and signs off on certificates of surveys and corner recordations. Reviews legal documents, exhibits, deeds, ROW plans, etc. to ensure the accuracy and compliance of all documentation. This includes the analyzing existing documentation to define parcel boundaries, writing legal descriptions, reviewing plans and deeds, etc.

C. Survey Crew Oversight and Training 10% of Time

Oversees and trains field survey crews to ensure the timely and efficient collection and recordation of survey data.

1. Directs and oversees surveys to ensure survey data is collected in the proper sequence and manner to support survey and project development operations. This includes consulting with section staff and management, evaluating survey staff and equipment resources, and evaluating survey methods, sequencing and time requirements to plan multiple and concurrent survey projects.
2. Determines required survey, documentation, and data collection activities for project sites. Compares these requirements to available staff and their related expertise/abilities to determine how to complete projects.
3. Reviews survey requests to determine manpower, time, equipment and informational data needed to complete the survey. Determines duty assignments on the site and provides oversight.
4. Observes survey crews to determine compliance with established methods and techniques, and survey and recording requirements. Notifies individual or appropriate supervisor of improper practices or safety concerns. Reports on performance to the supervisor on a daily basis and as part of the formal evaluation process.

5. Provides technical assistance to survey crews on adjustment and operation of survey equipment to assure the full potential of the equipment is being realized.

D. Equipment Maintenance

5% of Time

Directs and coordinates the operation and maintenance of survey equipment within the Section, including vehicles, electronic total stations, theodolites, engineering levels, digital levels, data collectors, CADD workstations, automated systems, GPS survey equipment, and other tools and technologies to ensure effective operations.

1. Develops and establishes equipment development and maintenance plans to ensure that modern technologies are available and appropriately utilized and maintained.
2. Tests new survey procedures and equipment to provide the Land Survey Manager information necessary to incorporate time efficient and cost-effective survey methods and procedures into the survey program. This includes GPS, digital levels, CADD station, etc. Ensures accurate calibration, determines measurements/features and their practical application to survey work, makes recommendations to District Survey Manager or Survey Project Manager.
3. Evaluates, organizes, and prepares equipment to be used in surveys conducted by the Survey Unit.
4. Adjusts, maintains and cleans survey equipment to assure proper alignment, operation, and safety.
5. Orders and maintains an inventory of survey supplies to assure availability when needed.
6. Positions located in Photogrammetry & Survey are responsible for reviewing calibration baseline reports for all MDT survey grade electronic measuring devices and maintaining a record of these reports to establish an adjustment and performance history for each instrument.

E. Other Duties

5% of Time

Performs a variety of other duties as assigned in support of Section, Bureau and MDT goals and objectives. Examples of other duties are: assisting other MDT programs on special projects, attending training and educational sessions as required and providing consultant surveyors, district survey crews and the public with survey information (i.e. - National Geodetic Survey data, MDT survey data, etc.) available through the Helena office.

Which of the duties and/or specific tasks listed under 1. (above) are considered “essential functions” that must be performed by this position (with or without accommodations)? (If you need information or training on the identification of essential functions, please contact MDT Human Resources Division.)

The following duties are considered essential functions because they require specialized expertise and skill and are the primary reasons the job exists:

- Duty A: Survey project management
- Duty B: Survey review and approval
- Duty C: Survey crew oversight and training
- Duty D: Equipment maintenance

The following mental and physical demands are associated with these essential functions:

PHYSICAL

- Lifting objects in excess of 30 lbs.
- Extensive travel throughout the state or district to project locations
- Ability to walk over uneven terrain or in water
- Operating a personal computer
- Communicating in writing, in person and over the phone
- Continual walking or standing
- Exposure to extreme weather and high-speed traffic
- Operation of motor vehicles
- Operation of power tools and/or equipment

MENTAL

- Computing arithmetic operations
- Comparing data
- Compiling information, Analyzing, Coordinating, Synthesizing, Negotiating, Instructing
- Ability to multi-task
- Ability to meet inflexible deadlines
- Decision-making that affects the public health and safety
- Instructing
- Interpersonal skills/behaviors
- Dealing with the public on a regular basis
- Demands for accuracy in all aspects of work

Does this position supervise others? Yes No

Number directly supervised: varies

Position Number(s) of those supervised:

Serves as party chief with full project responsibility for assigned field surveys. A crew of one to three field people encompassing all levels of Engineering Techs., Rotational Engineers, and Survey Aides are typically assigned to survey projects that involve personnel from the Survey Unit or the District Survey Unit.

This position is responsible for:

- | | | | |
|---|-------------------------------------|---|------------------------------------|
| <input type="checkbox"/> Hiring | <input type="checkbox"/> Firing | <input checked="" type="checkbox"/> Supervision | <input type="checkbox"/> Pay Level |
| <input type="checkbox"/> Performance Management | <input type="checkbox"/> Promotions | <input type="checkbox"/> Discipline | |
- Other: scheduling, training, assigning and reviewing work, provides final signature authority, relaying performance information to the supervisor.

SECTION III - Minimum Qualifications - List minimum requirements for the first day of work.

Critical knowledge and skills required for this position:

KNOWLEDGE:

Predominant work of this position requires professional knowledge of the concepts, principles, and applications of land surveying and related mathematics (e.g., geometry, trigonometry, statistics, etc.); legal principles, guidelines, and precedents related to surveying (e.g., Montana Subdivision and Platting Act, Sanitation in Subdivisions Act, Uniform Standards for Monumentation, etc.); case law related to property boundaries; survey computation and data analysis; State and federal survey policy and procedures; and specialized applications of various instrumentation.

SKILLS:

This position requires skill in directing and organizing survey crews and projects; operate standard office software applications (e.g., word processing, database, etc.), and strong written and verbal communications. This position also requires skill in the use of specialized surveying equipment such as electronic total stations, theodolites, engineering levels, digital levels, data collectors, CADD workstations, automated systems, GPS survey equipment, and other tools and technologies.

Behaviors required to perform these duties?

See MDT Core Behaviors.

Education:

Check the one box indicating minimum education requirements for this position for a new employee the first day of work:

- | | |
|---|--|
| <input type="checkbox"/> No education required | <input type="checkbox"/> Related AAS/2-years college/vocational training |
| <input type="checkbox"/> High school diploma or equivalent | <input checked="" type="checkbox"/> Related Bachelor’s Degree |
| <input type="checkbox"/> 1-year related college/voc. training | <input type="checkbox"/> Related Master’s degree |

Please specify the acceptable and related fields of study:

Education & Experience:

Bachelors degree in land surveying or geomatics or related field from an accredited college or university recognized by the U.S. Secretary of Education AND two years of progressively responsible experience in control survey, construction survey, topographic survey, engineering survey and/or land survey including one year experience as a survey party chief.

Related: Civil Engineering Technology or Construction Technology or other curriculums with coursework in math, drafting, and the techniques, principles, and practices of surveying.

Alternative qualifications: Other related education and experience combinations may be considered. A minimum of two (2) years of progressively responsible experience in control survey, construction survey, topographic survey, engineering survey and/or land survey including one year experience as a survey party chief is also required.

Licenses/Certifications:

- Requires Montana Professional Land Surveyor (PLS) license.
- Requires a valid driver’s license.

SECTION IV – Other Important Job Information

Strenuous physical activities are required on the job including digging, cutting, hiking, and packing equipment in excess of 30 lbs. Survey activities are done year around throughout the state exposing the Surveyor to hazards associated with extreme climatic conditions, remote areas, rough terrain, surveying along highway corridors, and risk of injury from potentially dangerous animals. Extensive statewide travel from the District reporting station or Helena headquarters and shifts other than normal are required to accomplish department goals and objectives.

Fingerprint check Valid driver’s license

Driver’s record check Background check Other; Describe

SECTION V – Signatures

Signature indicates this statement is accurate and complete.

Employee:

Name: _____ Title: _____

Signature: _____ Date: _____

Immediate Supervisor:

Name: _____ Title: _____

Signature: _____ Date: _____

Division/District Administrator:

Name: _____ Title: _____

Signature: _____ Date: _____

Department Designee:

Name: Brent Rabe/Designee Title: Human Resources Administrator
Human Resources Division

Signature: _____ Date: _____
