

# STATE OF MONTANA

## JOB DESCRIPTION

*Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.*

**Job Title: Surveyor II      Position Number: 32054; 35003; 35013, 92518, 92598, 90768, 90408, 91948, 91308, 91318, 90098**

**Location: Helena    Department: Transportation**

**Division and Bureau: Engineering Division/Highways Bureau**

**Section and Unit: Photogrammetry & Survey Section/Land Survey Unit**

### **Job Overview:**

This position is a journey level Surveyor (Surveyor II). The position is responsible for performing advanced technical and professional field survey work; serving as party chief for field surveys; reviewing surveys to determine the validity of the evidence and methods used and to ensure accurate survey information; maintaining equipment and inventories; and performing other duties as assigned.

The position reports directly to the Land Survey Manager or District Land Survey Manager.

### **Essential Functions (Major Duties or Responsibilities):**

#### **Field & Office Survey Duties - 50%**

Performs a variety of technical and pre-professional field, office and administrative duties in support of ongoing land survey projects and operations.

- 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.) under the direction of a LSI or PLS to recover title, monument, and/or other survey histories pertinent to the survey being conducted.

- Contacts landowners to notify them when survey crews will be on their property and finds out if there are any special circumstances survey crews need to be aware of since the right-of-entry forms were completed.
- Conducts field survey activities by recovering monuments and other survey evidence, operating survey instruments, recording data, setting stakes and monuments and performing other related field survey tasks. Operates machinery and equipment required to accomplish survey tasks including: vehicles, electronic total stations, engineering/digital levels, data collectors, GPS equipment, calculators, computers and software, other standard survey tools and equipment, and various hand tools used for digging, cutting, marking, etc.
- Organizes, computes, and adjusts survey data to be used in compiling reports, maps, plats and exhibits. Examples of these duties include: reducing field notes, making section break-down calculations, making proportionate measurement calculations, adjusting traverses and level notes, drafting, completing corner recordation forms and calculating surveys.
- Submits completed surveys to the professional land surveyor for review, approval, signature, and distribution. Provides professional surveyor with explanations and supporting evidence of what decisions were made and why.
- Compiles and completes corner recordation documentation for certification by professional land surveyor. This requires the compilation and validation of information in relation to the Corner Recordation Act.
- Incorporating research information, gathered field data, computational data, and professional judgments, etc. prepares final documents (i.e. - maps, plats, exhibits, control diagrams, certificates of survey, reports, control abstracts, coordinate listings, etc.) to be used in engineering planning and design, right-of-way acquisition and/or for submission to other agencies.

### **Survey Party Chief - 30%**

Serves as party chief for routine field surveys by overseeing field activities under the guidance of a professional land surveyor.

- Identifies and gathers project background information by reviewing scope of project with professional surveyor. Determines what data needs to be gathered in the field, the resources needed to complete field survey activities information needed to complete survey, determines and gathers required survey background documentation and determines data collection activities for project through discussion with the professional land surveyor. Compares these requirements to available staff and their related expertise/abilities to determine how to complete projects.
- Performs the following land surveying tasks under the supervision of a professional land surveyor: property corner search, retracing GLO surveys, retracing property boundaries,

retracing highway right-of-way, writing legal descriptions, preparing plats, preparing corner recordations, staking property boundaries, making land survey calculations, etc.

- Solicits evidence of original boundary locations including working with landowners to identify and document parcel evidence.
- Submits completed surveys to the professional land surveyor for review, approval, signature, and distribution. Provides professional surveyor with explanations and supporting evidence of what decisions were made and why.
- Solves problems that arise during surveys, which includes correcting inaccurate surveys, identifying and obtaining missing data, communicating with landowners, troubleshooting survey software, and resolving various other problems and errors.

### **Survey Review - 10%**

Reviews in house generated surveys.

- Reviews surveys for soundness of approach, compliance with MDT survey procedures, and compliance with state and federal laws. This position reviews all types of control and topographic surveys, plus preliminary reviews of cadastral surveys. This requires analyzing evidence and methods used, determining the quality of the survey data collected as well as considering a multitude of other variables involved with each survey.
- Identifies areas of non-conformance or substandard work and refers them to the Land Survey Manager or appropriate District Land Survey Manager with recommendations for final action.

### **Equipment Maintenance - 10%**

Maintains equipment and supply inventories to ensure availability and proper functioning to support survey operations.

- Tests new survey procedures and equipment to provide the Survey System Manager or appropriate District 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 supervisor and PLS.
- 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.
- Evaluates, organizes, and prepares equipment to be used in surveys conducted by the Survey Unit.

- Adjusts, maintains, and cleans survey equipment to assure proper alignment, operation, and safety. This includes pegging levels, adjusting tribrachs, checking EDMs on calibration baselines, etc.
- Orders and maintains an inventory of survey supplies to assure availability when needed.

### **Other Duties - 5%**

Performs a variety of other duties as assigned in support of Section, Bureau and MDT goals and objectives examples of other duties are:

- Assisting with other MDT programs on special projects.
- Attending training and educational sessions as required
- As assigned by the Land Survey Manager or appropriate District Land Survey Manager, conducts training sessions for district survey crews on complex survey procedures and the use of state-of-the-art survey equipment and methods.
- Participate in maintaining the National Geodetic Survey (NGS) vertical control network by replacing NGS bench marks, running levels in accordance with NGS specifications, and preparing level data for submission to NGS.

### **Supervision**

The number of employees supervised is: N/A

The position number for each supervised employee is: N/A

### **Physical and Environmental Demands:**

- Extensive statewide travel (travel is estimated to range from 10% to 30% of the time)
- Lifting objects in excess of 30 lbs.
- Ability to walk over uneven terrain or in water
- Continual walking or standing
- Exposure to extreme weather conditions and high-speed traffic
- Operation of motor vehicles and survey and related equipment

### **Knowledge, Skills and Abilities (Behaviors):**

This position requires thorough knowledge of the principles and practices of surveying, geometry, trigonometry, and statistics. The position requires knowledge of survey equipment; survey computation and adjustment software; documentation and research techniques; MDT survey policy and procedures; survey datum; the B.L.M. Manual of Instructions for the Survey of Public Lands;

statute law and common law relating to property boundaries; legal principles of land surveying; the Montana Subdivision and Platting Act; and the Certified Corner Recordation Act. The position requires a working knowledge of MDT highway design and construction.

This position requires skill in the use and operation of survey instruments of all types; planning and executing geodetic control, project control, photogrammetric control, hydrographic, topographic, land (cadastral), retracement, quality control, and construction surveys; operating and troubleshooting computers and survey computation and adjustment software; and in reading and interpreting maps and plans.

**Minimum Qualifications (Education and Experience):**

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to an Associate’s or Bachelor’s Degree in Land Surveying, Geomatics, or a related field from an accredited college or university. Related degrees must include significant coursework in survey related maths, drafting, and surveying techniques, principles and practices.

This position requires a minimum of 2 years of survey experience.

Certifications, licensure, or other credentials include: Certification as a Land Surveyor Intern, per 37-67-326, MCA.

Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

**Special Requirements:**

*List any other special required information for this position*

- |  |  |
|--|--|
| <input type="checkbox"/> Fingerprint check | <input checked="" type="checkbox"/> Valid driver’s license |
| <input type="checkbox"/> Background check  | <input type="checkbox"/> Other; Describe                   |
| MFPE Union Code                            | Safety Responsibilities                                    |

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

**Signatures**

My signature below indicates the statements in the job description are accurate and complete.

---

<b>Immediate Supervisor</b>	<b>Title</b>	<b>Date</b>
-----------------------------	--------------	-------------

---

<b>Administrative Review</b>	<b>Title</b>	<b>Date</b>
------------------------------	--------------	-------------

My signature below indicates that I have read this job description.

---

<b>Employee</b>	<b>Title</b>	<b>Date</b>
-----------------	--------------	-------------

**Human Resources Review**

**Job Code Title: Survey Technician 1    Job Code Number: D12011**

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

- |   |  |
|---|--|
| <input type="checkbox"/> FLSA Exempt                        | <input checked="" type="checkbox"/> FLSA Non-Exempt        |
| <input type="checkbox"/> Telework Available                 | <input checked="" type="checkbox"/> Telework Not Available |
| <input checked="" type="checkbox"/> Classification Complete | <input type="checkbox"/> Organizational Chart attached     |

**Human Resources:**

---

<b>Signature</b>	<b>Title</b>	<b>Date</b>
------------------	--------------	-------------