

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Land Surveyor in Training**

**Class Code: 90640**

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### **A. Purpose:**

Land Surveyors in Training apply the science of surveying measurements, the laws related to boundaries and land use, applicable mathematical and computational theories and principles, natural and other forces which affect positional accuracy, land planning and development concepts pertinent to subdivision of land and property surveys, land record and land tenure concepts, and geodetic and other earth-related sciences to the analysis, design, and execution of surveying projects.

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

Land Surveyors in Training perform legal land surveys under the direction and tutelage of a Land Surveyor.

Land Surveyors oversee and verify the legality of surveying practices and documentation, and establish land ties and project controls in an assigned geographical region of the state.

### **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 land surveys as assigned by a Land Surveyor for the purpose of determining that the boundaries of properties and rights of way, and changes made to existing boundaries correspond as nearly to the original land ties as possible.
  - a. Conducts research of previous plans, historical survey notes and plats, surveying laws applicable to the area and era, plats and deeds, and corner records to collect and compile as much information as possible about original land ties, ownership, and other attachments to the land in question.
  - b. Sets controls for surveying construction projects by tying project points set by survey crews back to the established points of the state plane coordinate system to verify the beginning point, a point at each one-half mile, and an ending point of each project to ensure a consistent coordinate system for all project surveys.
  - c. Searches out corner markers previously set and reestablishes those that are not found by expanding the search area to include other corners from which to measure and reset the missing corner; and ties property corners to project control.
  - d. Creates Microstation drawing files, and coordinating files of information about land ties.
  - e. Assists in staking highway rights of way after the project is completed, implanting and flagging permanent markers on section corners to mark the right of way line and provide information for the department and adjacent landowners.
2. Provides technical and administrative support to assist the Land Surveyor in establishing a central point in the Region for data management of land ties and controls and to facilitate consistency in land surveying procedures.
  - a. Prepares drafts of corner certificates, tying corners to as many other landmarks as feasible to aid in future research.
  - b. Performs topographic surveys.
  - c. Provides technical assistance to Area surveyors on land surveying according to the Bureau of Land Management's Manual of Instructions for the Survey of Public Lands of the United States 1973.

3. Performs other work as assigned.

**D. Reporting Relationships:**

Reports to a Land Surveyor. Does not supervise but routinely provides technical assistance to other surveyors.

**E. Challenges and Problems:**

Challenged to find boundaries in a process that is neither purely legal nor purely scientific. This is difficult because the surveyor must be cognizant of the legal description of the land and any conflicts which may affect it; must be part archeologist to find physical evidence of previous surveys and occupation of the ground; and must understand the concepts of good measurements throughout the process to find and describe what is found and to be able to interpret its relationship to the record. Further challenged to understand the inexactness, uncertainty, and variable nature of measurement and constantly seek new evidence and consequently a higher probability of proving something with confidence.

Problems include extensive research which is time-consuming, with the added pressure of overlooking documentation which can be detrimental to a project and cause legal consequences; retracing 100-year old surveys; finding section corners in large and remote areas that are common in this state; determining the correct location of a lost corner; and keeping current on the specialized technology and laws of the profession.

**F. Decision-making Authority:**

Decisions include determining the correct location of missing corners of land boundaries based on field evidence, the law, and documentation such as plats and deeds and former survey notes; recommendations for appropriate tools and methods to perform specific tasks with the right degree of precision and accuracy; and the feasibility of using landmarks to further delineate corners on corner records.

Decisions referred include verification and final approval of reestablished land corners, of tools and methods to use for projects, and of corner records; work priorities and schedules; and purchase of equipment and supplies.

**G. Contact with Others:**

Daily contact with the Land Surveyor to receive and review work assignments and participate in project planning; with landowners while working on their land, to explain project objectives and to collect information about the land in question; and with Area surveyors to explain processes, methods and laws regarding surveying; and frequent contact with other land surveyors to share information on private land abutting state land and to resolve surveying conflicts.

## **H. Working Conditions:**

Works long days, most often in the summer so facing extreme weather conditions is common; walks long distances over many kinds of terrain; animals, reptiles, and insects are a factor; carries heavy packs of equipment; and for the most part works alone, often in remote areas.

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

Knowledge of:

- mathematics, especially the application of geometry and trigonometry, and physics;
- the laws governing the practice of land surveying and the laws governing the ownership of real property;
- effective practices, methods, techniques, and equipment of land surveying;
- plats, plans, maps, deeds, and geography;
- geodetic surveying.

Ability to:

- choose appropriate tools and methods to perform a specific surveying task with the required degree of precision and accuracy;
- make judgments and decisions based upon the evidence that carries the most weight or is superior in some way;
- understand the application of statutes, and document and defend decisions made;
- interpret legal descriptions of land into tangible positions on the ground;
- apply the science of measurement to take conceptual technical specifications from construction plans to positions on the ground that can be used as a basis for the actual construction;
- find monuments in the field that have corresponding references in documents of ownership;
- search through the public record for written evidence of ownership of property or property descriptions contained in prior documents;
- communicate information effectively and precisely, both orally and in writing;
- see details at close range, i.e., within a few feet of the observer; and to see details at a distance.

## **J. Licenses and Certificates:**

Must be certified as a Land Surveyor in Training (LSIT) according to the guidelines of the South Dakota Board of Technical Professions.