



## PROFESSIONAL LAND SURVEYOR 1

3144

### GENERAL DESCRIPTION OF CLASS

The PROFESSIONAL LAND SURVEYOR 1 plans, organizes, and leads the work of technicians assigned to field and office survey work. They schedule and plan survey projects, review survey results and resolve scheduling and operational problems. Employees provide technical advice to project teams, agency managers, and to city and county governments. They also review local agency or consultants' surveys, recommend corrections or changes according to departmental standards, policies, and Oregon Revised Statutes.

Positions may be assigned as the senior surveyor of a unit to train, plan, direct, and review the work of other surveying professionals and technicians. Employees in this class stamp survey products and file them with the applicable county surveyor.

### DISTINGUISHING FEATURES

This is the first level of a two-level series. It represents the journey and full proficiency level. Employees at this level recognize and define surveying problems and evaluate methods for their solution, which requires a background of professional education, training and licensure.

The absence of responsibility to represent the agency as an expert in a complex area of specialization, or manage significant projects having a broad impact on state infrastructure distinguishes this class from the higher level. It is further distinguished by the absence of advising management on program or policy-related issues and leading in the development and strategic direction of a specialized surveying area.

The nature, degree of complexity and license requirement of the work distinguishes this class from surveying work performed in the Civil Engineering Specialist and Engineering Technician class series.

### DUTIES AND RESPONSIBILITIES

The duties listed below are not inclusive but characteristic of the type and level of work associated with this class. Individual positions may perform all or some combination of the duties listed below as well as other related duties.

#### 1. Survey

Plan, schedule, and complete location, construction and right of way monumentation surveys for assigned projects and transportation facilities. Representative projects include bridges and related structures, freeway widening, new interchanges, Interstate maintenance, new construction or major reconstruction of state highways, urban highways, safety/operation improvements, Intelligent Transportation System (ITS)-related improvements, related facility construction, and emergency or high priority projects. Review progress of survey work, provide technical advice or direction to crews, provide guidance in the use of special equipment, and ensure safety procedures are followed. Oversee the proper operation, care and maintenance of survey equipment. Operate survey equipment for establishing survey control, locating property corners, recording physical topography and cultural features for the development of basemaps and digital terrain models, laying out roadway alignments, laying out alignments and staking out right-of-way monuments, and performing a variety of construction staking activities. Complete complex calculations using both manual methods and surveying computer software. Upon completion of survey, check, analyze and review survey data for accuracy and completeness.

## **2. Survey Administration**

Provide surveying expertise and data for local agencies' project development, project construction, access permits, development review activities, rail crossings, public transit facilities, light rail projects, and maintenance operations. Coordinate the resolution of survey or project development issues on project teams. Develop and manage survey budget expenditures for assigned projects. Develop and stamp various maps required by the Oregon Revised Statutes and agency policy and file with applicable county surveyor.

Read, interpret and manipulate electronic map data to prepare reports and stakeout data for construction activities. Prepare electronic stakeout files from existing map products provided by designers, engineers, consultants and others or provide guidance in the preparation of these files. Review and critique survey maps and related documents prepared by consultants. Recommend acceptance or corrections to maps and survey documents prepared by consultant firms based on agency, state and applicable county survey standards.

Give advice regarding survey issues, legal aspects of property and boundary surveying. Develop documentation for hearings or court proceedings. Assist with technical training in survey related topics.

## **3. Right of Way Maps and Descriptions**

Develop right of way basemaps by researching vesting deeds, land sales contracts, county assessor maps, subdivision plats, agency drawings, railroad right of way maps, county surveys, road dedications and road vacations. Evaluate the right of way needs to accommodate project construction and determine the boundaries of additional property that should be acquired. Communicate with the project leader, designer, Right of Way Agents, and others regarding matters pertaining to right of way mapping and right of way acquisition. Write legal descriptions of the real property that conform to the right of way drawing.

Research, interpret, and analyze state and outside agency surveys, maps, plats, plans, deeds and survey data to determine highway centerlines. Research previous surveys to obtain background information for assigned projects.

## **4. Mapping**

Provide guidance, complete, and prepare field survey data in appropriate mapping formats, Records of Survey, right of way maps, and survey base maps.

## **5. Photogrammetry**

Coordinate the acquisition of aerial photographs and prepare aerial mosaics, planimetric and topographic maps and digital terrain models used in the location and design of highways, hearing exhibits, and displays for court cases. Advise agency staff on what photogrammetric methods would best fit their needs.

## **RELATIONSHIPS WITH OTHERS**

Employees in this class have regular in-person, telephone, or written contact with city, county, state and federal officials to answer questions and explain policy and regulations; and with other surveying professionals to exchange survey planning and scheduling information or to resolve technical or controversial problems. Employees have periodic in-person or telephone contact with the public or contractor's representatives with divergent views.

**SUPERVISION RECEIVED**

Employees in this class work independently, receiving general supervision from a higher-level surveyor, or manager who reviews work upon completion for conformance to agency policy and standards. Much of the technical work is completed without review.

Employees use general and specific state regulations, state and federal surveying and engineering standards, guidelines, and manuals to complete assigned work; and advise on or approve local government, consultants', and contractors' surveying products.

**KNOWLEDGE AND SKILLS (KS)****General knowledge of:**

Principles, methods, and instruments used in land surveying.
Engineering and surveying mathematical techniques including coordinate geometry and trigonometry.
Engineering and surveying principles and techniques used to produce plans and drawings.
Principles and processes of public works construction projects.
Federal and state statutes, rules and regulations governing land survey methods, standards and record keeping.
Typical software programs used in surveying, drafting, to analyze data, and model information.
Legal considerations of property and boundary surveys.
Contract management and project management principles and techniques.
Structure and content of the English language including the meaning and spelling of words, rules of composition and grammar.
Instructional methods and training techniques.

**Skill to:**

Apply professional surveying principles.
Analyze right of way boundaries by using data produced by advanced survey software.
Make computations sufficient to the level of assignment.
Analyze needs and requirements to plan and complete a survey.
Weigh the relative costs and benefits of a potential action.
Analyze and solve surveying problems.
Develop maps.
Design and conduct studies to identify and recommend solutions to surveying problems.
Read and interpret plans and specifications
Convert and explain verbally and in writing complex technical data in an understandable manner to a variety of people.
Prepare clear and concise reports suited to the needs of the audience.
Effectively represent the agency to the public and outside contractors, and testify in administrative hearings or court proceedings.
Direct and assess the work of other technical and professional surveying personnel.
Plan and manage multiple surveying projects concurrently.
Identify the scope and complexity of a project and assign segments of that project effectively.
Use computer programs to analyze surveying data or produce maps
Apply principles, methods and techniques of related professional disciplines.

**NOTE:** The KNOWLEDGE and SKILLS are required for initial consideration. Some duties performed by positions in this class may require different KS's. No attempt is made to describe every KS required for **all** positions in this class. Additional KS requirements will be explained on the recruiting announcement.

Adopted 10/2005

Revised

STATE OF OREGON  
 Dept. of Administrative Services  
 Human Resource Services Division