



STATE OF COLORADO

CLASS SERIES DESCRIPTION

July 1, 2008

LAND SURVEYOR

I9B11X TO I9B4XX

DESCRIPTION OF OCCUPATIONAL WORK

This class series uses four levels in the Physical Science and Engineering Occupational Group and describes land surveying work. The work entails the conduct and/or oversight of land survey work in support of engineering projects or other programs. The work involves the application of surveying knowledge or oversight for determining the relative position and areas of property, preparation of maps, plats, legal descriptions, and other survey records/documentation, and establishing survey control for property boundary determinations. Land surveying consists of the performance of work requiring the use of the principles of mathematics, the related physical and applied sciences, and the relevant requirements of law to plan and complete right-of-way plans and legal descriptions. The work may include assisting in the resolution of boundary disputes.

Positions in the upper two classes must be licensed as a Professional Land Surveyor (PLS) in accordance with CRS 12-25-201, et.seq., to perform and/or certify (stamp/seal) surveys performed under their direction/supervision.

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LAND SURVEY INTERN I

I9B1IX

CONCEPT OF CLASS

This class describes the entry level to this series. Work is designed to train positions for a higher level in the class series. Although tasks are similar to those of the next working level, assignments are structured and performed with direction and assistance from others. Positions carry out surveying work processes and operations by learning to apply and follow surveying procedures, techniques, rules and regulations. Once training has been completed, the position may be moved to the next level.

LAND SURVEY INTERN II

I9B2TX

CONCEPT OF CLASS

This class describes the operational, unlicensed surveyor level. Positions in this class perform surveying work as part of a crew or individually. Positions apply the fundamentals of land surveying as they gain practical experience under the direction/supervision of a licensed Professional Land Surveyor. The work may include researching/collecting previous survey or ownership data or records filed with county authorities; planning the conduct of the physical survey with manual, electronic, or computerized equipment, including satellite data; actually performing, as crew chief or an assistant, the on-site survey measurements and data collection; discovering monuments; transcribing, validating, and compiling or analyzing survey data via various computer software programs; and translating data into survey and/or right-of-way documents. Positions may review the work of other surveyors for quality control purposes and train less experienced survey interns in surveying practices and methods. Positions in this class differ from the previous Land Survey Intern I class in all factors.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices. For example, positions decide how individual survey projects will be sequenced or determining survey measurements.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions review design, study, or plan information to determine what it means and how it fits together in order to get practical solutions in the form of measurement methods. Guidelines in the form of rules, standards, contracts, regulations, or specifications exist for most situations.

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Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation. For example, positions search various public records for relevant data to identify probable location of property corners/monuments.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions contact property owners to discover information on property corners/boundaries or to obtain property access permissions.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor or as a work leader. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team.

OR

The work leader is partially accountable for the work product of two or more full-time equivalent positions, including timeliness, correctness, and soundness. At least one of the subordinate positions must be in the same series or at a comparable conceptual level. Typical elements of direct control over other positions by a work leader include assigning tasks, monitoring progress and work flow, checking the product, scheduling work, and establishing work standards. The work leader provides input into supervisory decisions made at higher levels, including signing leave requests and approving work hours. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

PROFESSIONAL LAND SURVEYOR I

I9B3XX

CONCEPT OF CLASS

This class describes the fully operational, licensed Professional Land Surveyor authorized to certify survey documents and legal records. As the responsible charge person for survey work, positions are responsible to oversee all aspects of boundary and area surveying. Positions in this level train other non-licensed positions in the practices and methods of land surveying. Positions also file appropriate monument documents and right-of-way plans with county authorities. A primary responsibility of positions in this class is to stamp/certify surveying documents. Positions in this class differ from the previous Land Survey Intern II class in the Decision Making and Complexity factors based on use of the PLS licensure authorities and may differ in the Line/Staff Authority factor.

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FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. The general pattern, program, or system exists but must be individualized. This individualization requires analysis of data that is complicated. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. For example, positions decide appropriate methods for locating property rights and establishing monuments necessary to identify property boundaries.

Complexity -- The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of surveying and mathematical sciences and physics theories, concepts, and principles in order to tailor them to develop a different approach or tactical plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate so they are relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies. For example, positions analyze known surveying principles, practices, and case law to evaluate the field evidence and written records to decide how to weigh boundary evidence. In addition, positions analyze satellite signal propagation principles when locating GPS control points and designing High Accuracy Networks (HARN) patterns.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of at least one of the following:

Clarifying underlying rationale, intent, and motive by educating others on unfamiliar concepts and theories. This goes beyond what has been learned in training or repeating information that is available in another format. For example, positions train others on the use of satellite, computer-aided survey equipment so they understand the rationale behind its calculation capabilities and limits.

OR

Negotiating as an official representative of one party in order to obtain support or cooperation where there is no formal rule or law to fall back on in requiring such action or change from the other party. Such negotiation has fiscal or programmatic impact on an agency. In reaching settlements or compromises, the position does not have a rule or regulation to enforce but is

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accountable for the function. For example, positions negotiate consultant services or boundary dispute agreements with landowners which have fiscal impact.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor or work leader. The direct field of influence the work of a position has on the organization is as an individual contributor or as a work leader. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team.

OR

The work leader is partially accountable for the work product of two or more full-time equivalent positions, including timeliness, correctness, and soundness. At least one of the subordinate positions must be in the same series or at a comparable conceptual level. Typical elements of direct control over other positions by a work leader include assigning tasks, monitoring progress and work flow, checking the product, scheduling work, and establishing work standards. The work leader provides input into supervisory decisions made at higher levels, including signing leave requests and approving work hours. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

PROFESSIONAL LAND SURVEYOR II

I9B4XX

CONCEPT OF CLASS

This class describes the unit supervisor or staff authority level. The work generally involves the identification, planning, review, and approval of land surveys, right-of-way plans and legal descriptions; prepares scopes of work for consultant contracts, participates in the consultant selection process, and reviews and approves payments. Positions oversee the allocated equipment, personnel, and budgetary resources needed to perform survey projects in support of pre-construction and construction work or other survey needs. The work may also include advising counties on Geographic Information Systems (GIS); using the Global Positioning System (GPS) for surveys and HARN patterns; conducting surveys for surplus property or right-of-way determinations; or managing surveying consultants. At the staff level, positions plan, organize, and evaluate agency survey programs to support engineering or other programs requiring survey support. The work may include coordinating with external survey agencies on regulatory aspects to insure the agency's professional survey programs conform to state regulations and statutes governing land surveying. As a staff authority, the position plans agency survey operations and advises managers, engineers, and other surveyors on the implementation of the statewide, agency survey program. This class differs from the Professional Land Surveyor I class in Line/Staff Authority factor and may differ in the Complexity factor.

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FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. The general pattern, program, or system exists but must be individualized. This individualization requires analysis of data that is complicated. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. For example, positions apply scientific surveying principles in deciding the scope of work for survey contracts on design projects.

OR

The decisions regularly made are at the interpretive level, as described here. Within limits of the strategic master plan and allocated human and fiscal resources, choices involve determining tactical plans to achieve the objectives established by the higher management (strategic) level. This involves establishing what processes will be done, developing the budget, and developing the staffing patterns and work units in order to deploy staff. For example, positions develop unit budgets and staffing requirements for operating a survey unit.

This level of Decision Making also includes inventing and changing systems and guidelines that will be applied by others statewide. By nature, this is the first level where positions are not bound by processes and operations in their own programs as a framework for decision making and there are novel or unique situations that cause uncertainties that must be addressed at this level. Through deliberate analysis and experience with these unique situations, the manager or expert decides the surveying systems, guidelines, and programs for the future. For example, position decides survey specifications for an agency's survey program.

Complexity --The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of surveying and mathematical sciences and physics theories, concepts, and principles in order to tailor them to develop a different approach or tactical plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate so they are relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies. For example, positions analyze known surveying principles, practices, and case law to develop agency surveying specifications. In addition, positions analyze the intent of legal documents, land descriptions, prior surveys, and legal precedents to make boundary/corner determinations for possible land acquisitions.

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OR

The nature of, and need for, analysis and judgment is strategic, as described here. Positions develop guidelines to implement a survey program that maintains the agency's mission. Guidelines do not exist for most situations. In directive situations, positions use judgment and resourcefulness to interpret circumstances in a variety of situations and establish guidelines that direct how a departmental/agency land surveying program will be implemented. For example, positions establish agency guidelines on managing consultant contracts or on monumenting requirements as directed by the State Board of Registration for Professional Engineers and Professional Land Surveyors.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of at least one of the following:

Clarifying underlying rationale, intent, and motive by educating others on unfamiliar concepts and theories. This goes beyond what has been learned in training or repeating information that is available in another format. For example, positions explain the intent of survey projects to consultants.

OR

Negotiating as an official representative of one party in order to obtain support or cooperation where there is no formal rule or law to fall back on in requiring such action or change from the other party. Such negotiation has fiscal or programmatic impact on an agency. In reaching settlements or compromises, the position does not have a rule or regulation to enforce but is accountable for the function. For example, positions negotiate consultant agreements for the conduct of surveys.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as a unit supervisor or staff authority. The unit supervisor is accountable, including signature authority, for actions and decisions that directly impact the pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be a Professional Land Surveyor or at a comparable conceptual level. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

OR

The staff authority is a pacesetter who has a rare level of technical expertise in a field or profession that, as part of the assignment, is critical to the success of an agency. This authority directly influences management decisions at least on an agency-wide basis. Managers and peers recognize and seek this level of technical guidance and direction for development of an agency-wide system or regarding the application of a statewide surveying system within the agency or to its clients.

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DEFINITIONS

Land Surveying: As defined in CRS 12-25-202 - Professional land surveying means any service or work, the adequate performance of which involves: The application of special knowledge of the principles of mathematics; the related physical and applied sciences; and the relevant requirements of law for measuring and locating points, lines, angles, elevations, and the non-natural features in the air, on the surface of the earth, within underground workings, and on the beds of bodies of water for determining relative position and areas as they pertain to the monumenting of property boundaries, condominium measurements, and the platting and layout of lands and subdivisions thereof, including the topography, alignment, and grades of streets and for the preparation of maps, record plats, field note records, and property or legal descriptions that represent these surveys. Professional land surveying may also include other types of surveying.

Professional Land Surveyor: as used in this class description, it is the equivalency of such individuals defined by statutes and rules under the purview of the Colorado State Board of Registration for Professional Engineers and Professional Land Surveyors.

ENTRANCE REQUIREMENTS

Minimum entry requirements and general competencies for classes in this series are contained in the State of Colorado Department of Personnel & Administration web site.

For purposes of the Americans with Disabilities Act, the essential functions of specific positions are identified in the position description questionnaires and job analyses.

CLASS SERIES HISTORY

Effective 7/1/08 (TMM). PSE System Maintenance Study. No changes. Published as proposed 7/31/07.

Effective 7/1/02 (DLF). PSE System Maintenance Study. No changes. Published as proposed 5/15/02.

Effective 1/1/98 (DLF). Added two lower classes to series and revised concept for two upper classes. Published as proposed 10/22/97.

Effective 9/1/93 (DLF). Job Evaluation System Revision project. Published as proposed 6/1/93.

Created 1/15/91. Survey Coordinator (A3050).

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SUMMARY OF FACTOR RATINGS

Class Level	Decision Making	Complexity	Purpose of Contact	Line/Staff Authority
Land Survey Intern I	na	na	na	na
Land Survey Intern II	Operational	Patterned	Detect	Individual Contributor or Work Leader
Professional Land Surveyor I	Process	Formulative	Clarify or Negotiate	Individual Contributor or Work Leader
Professional Land Surveyor II	Process or Interpretive	Formulative or Strategic	Clarify or Negotiate	Unit Supervisor or Staff Authority

ISSUING AUTHORITY: Colorado Department of Personnel & Administration.