



COLORADO
Department of Transportation
Division of Audit



COLORADO
Department of Transportation
Division of Project Support

DATE: November 30, 2017

EC-006

TO: Architectural and Engineering Firms

SUBJECT: Recent Changes to the Master Pricing Agreement Process

We are pleased to announce a update to CDOT's common classifications. We believe that these procedures has improved the Master Pricing Agreement (MPA) process.

Attached you will find CDOT's Architect/Engineer Firms Standard Job Classification guide that will assist you with your new task of matching your firm's job classifications with CDOT's Standard Job Classifications. These standard job classifications were the result of a joint effort with the American Council of Engineering Companies of Colorado. We are requiring that you cross reference your firm's job classifications to these standard classifications when submitting Appendix G, "Employee Classification" as part of your MPA

Thank you for your cooperation and assistance with improving the MPA process.

//s// Kyle Dilbert Manager,
Contracts and Agreements



STANDARD A/E JOB CLASSIFICATIONS

Colorado Department of Transportation

CONTRACTS & MARKET ANALYSIS BRANCH
&
AUDIT DIVISION



ARCHITECTURAL/ENGINEERING FIRMS STANDARD JOB CLASSIFICATIONS

Updated: November 2017

Released: April 8, 2016



DATE: NOVEMBER 30, 2017

TO: ALL ARCHITECTURAL AND ENGINEERING CONSULTANTS

**FROM: KYLE DILBERT, CONTRACTS AND MARKET ANALYSIS BRANCH
JAMES BALLARD, AUDIT DIVISION**

RE: UPDATE TO CDOT COMMON CLASSIFICATIONS

This memo serves as an update to the CDOT Common Classifications, which were originally published in April 2016. Numerous classifications were added, removed, or edited to bring them more in line with what Consultant firms have presented in their Master Pricing Agreements (MPA) over the past year and a half. These new classifications should be implemented immediately in all future MPA submissions (no changes to current submissions are necessary). The original memo follows, with updated contact information.

EFFECTIVE IMMEDIATELY

All Master Pricing Agreements (MPA), Option Letters, and add employee requests will be required to follow the Standard Job Classification procedures described below. Requests currently in process are not affected.

Background

Job classification is a system for objectively and accurately defining and evaluating the duties, responsibilities, tasks, and authority level of a job. The job classification, done correctly, is a thorough description of the job responsibilities from which the proper compensation may be assigned. It has been recognized by the American Council of Engineering Companies (ACEC), Colorado and architecture and engineering firms (A/E) that there is no standardization of job classifications. This creates a problem when determining the fair and reasonableness of an A/E's firm's compensation as required by 48 CFR Part 31 (Federal Acquisition Regulations), Sections 31-201.3(a) and 31-205.6(b)(2).

In 2016, CDOT partnered with the ACEC Colorado and formed a task force to obtain industry's input regarding standardizing job classifications. These job classifications have been reviewed to ensure that they are accurate with respect to title and duties. Currently CDOT must attempt to systematically compare and match the Consultants job specifications, through a position description, with a job classification. This is very time consuming, but more importantly, could result in a misclassification that inaccurately assesses the reasonableness of the hourly rate. With standard job classifications, the

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Consultant, not CDOT, classifies their employees into proper classifications from which CDOT can review those classifications' rates for reasonableness.

Procedures

1. The following procedures are to be followed when a Consultant firm submits their Master Pricing Agreement (MPA) or adds employees to their MPA:
 - It is required that you align each employee's classification with a classification that most closely fits one from the attached CDOT Standard Job Classifications. The classifications will be posted and updated (most recent update in October 2017) on the CDOT Consultants webpage: <https://www.codot.gov/business/consultants/forms>. Please see Attachment 1 for an example.
 - We understand that not all classifications will align exactly with the CDOT Standard Job Classifications. If you have a particular classification that is outside of what is listed, please contact the person below (depending on the request) for guidance. This list is a "living document" so we will add and/or delete classifications as we gain more experience. With your assistance, we can reduce the time it takes CDOT to review requests and assist in a more accurate reflection of your employees' reasonable salaries.
2. Promotions are now permitted prior to the MPA Option Letter or decoupling process (if elected). Please follow the same guidelines as listed for adding employees to the MPA (CDOT EC-001). A promotion is defined as an employee changing a job classification, not simply a pay increase. Salary increases remain once a year.

Closing

This process will be ongoing. As stated earlier, the CDOT Standard Job Classifications is a "living document" that will be updated as necessary. This document will be posted on the web location listed above. Please review the website frequently as this is the most efficient way for CDOT to communicate with our A/E partners.

Should you have any questions regarding an employee's classification for the MPA or adding an employee, please contact the appropriate person below:

- Master Pricing Agreement (MPA) - Listing of Employees

Audit Division: Josh Gosenca or Robyn Lamb
Email: josh.gosenca@state.co.us or robyn.lamb@state.co.us
Telephone: 303-512-4369 or 303-757-9363

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- Adding Employees to the MPA

Engineering Contracts:	George Currie
Email:	george.currie@state.co.us
Telephone:	303-512-4156

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I. ACCOUNTING & FINANCE

Accounting Technician/Bookkeeper

Under supervision, performs a variety of routine tasks, including reconciling bank accounts, posting to and balancing ledgers, processing payroll, preparing draft invoices, assisting in maintenance of accounting files, etc. Typically has some college with 0-2 years of experience.

Accountant

Responsible for maintaining a complete and systematic set of records of business transactions. Balances books and prepares reports to show receipts, expenditures, accounts receivable and payable, and various other items pertinent to the operation of a business. Typically has an associate's or bachelor's degree with 2-5 years of experience.

Accounting Manager

Manages professional level accounting functions and the preparation of reports including earnings, profits/losses, cash balances, and cost accounting. Assigns and reviews work of lower-level staff. Not a controller-level position. Typically has a bachelor's degree or higher with 7+ years of experience.

Financial Analyst

Analyzes past and present financial data of organization and estimates future revenues and expenditures, applying principles of finance. Aids organization with financial functions, such as assessing, auditing, planning, budgeting, taxes, consolidation, cost control, and project control. Evaluates and analyzes capital expenditures, depreciation, proposals, investment opportunities, rate of return, profit plans, operating records, financial statements, etc. Typically has an associate's or bachelor's degree with 1+ years of experience.

Finance Manager

Responsible for the organization's financial information and administration. Supervises accounting, budgeting, and payroll functions. May be a strategic/tactical manager. Reports to CFO. Typically has a bachelor's degree or higher with 7+ years of experience.

II. ARCHITECTS (including Landscape)

Architect I

Plans and designs building projects for clients according to their desires, needs, and financial resources, applying knowledge of design, construction procedures, zoning and building codes, and building materials. Consults with clients to determine functional and spatial requirements, and prepares information regarding design, specs, materials, equipment, estimated costs, and construction time. Typically has technical training and 0-6 years of experience.

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Architect II

Same as above. May have supervisory responsibilities. Typically has a bachelor's degree and 7+ years of experience.

Landscape Architect I

Designs and plans development of land areas for projects, such as parks, highways, commercial/residential sites, etc. Confers with clients, engineering personnel, and architects on overall program. Collects and analyzes data on site conditions such as geographic location, soil, vegetation, drainage, and location of structures for preparation of environmental impact report and development of landscaping plans. May have an associate's degree and license with 0-5 years of experience.

Landscape Architect II

Same as above. May have supervisory responsibilities. Typically has an associate's degree and license with 6+ years of experience.

Urban Planner

Plans and develops comprehensive programs and plans for development, growth, revitalization, and utilization of land and physical facilities of cities, etc. to maximize quality of life. Collects and analyzes data on economic, social, and physical factors affecting land use, projects future community needs, and prepares or requisitions graphic and narrative reports on data. May have an associate's degree or technical training with 1+ years of experience.

III. CADD & DESIGNERS

CADD Technician I

Under general supervision, prepares layouts, drawings, and designs according to engineering specs using CADD or other design software. May have technical training with 0-5 years of experience.

CADD Technician II

In addition to above, carries out more novel or complex assignments using more independent judgment. May review lower-level staff work. May have degree and/or technical training with 6+ years of experience.

Designer/Drafter I

Assists professionals in designing, planning, and execution of segments of projects. Uses BIM, MEP, CADD, and other design software. May have associate's degree or advanced technical training with 0-5 years of experience.

Designer/Drafter II

In addition to above, converses with engineers and other subject matter experts to interpret design concepts, determine nature and type of required detailed working

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drawings, and coordinate work with others. May have associate's degree or advanced technical training with 6+ years of experience.

Designer/Drafter III

Same as above. Has additional experience and supervisory responsibilities, works on more complex projects. May have associate's degree or advanced technical training with 10+ years of experience.

CADD/Designer Supervisor

Responsible for the coordination/supervision of operators/designers. Assigns projects, coordinates schedules and ensures accuracy/adherence to standards. Provides technical advice and troubleshoots issues. May have bachelor's degree with 10+ years of experience.

CADD/Designer Manager

Considered 2nd level manager over projects and personnel to ensure conformance to client requirements. Manages overall design delivery, strategies, scope, and timing of deliverables. May have bachelor's degree with 15+ years of experience.

IV. CONSTRUCTION INSPECTORS & MANAGERS

Construction Inspector I

Observes and inspects construction of bridges, buildings, dams, highways, and other types of construction work to ensure that procedures and materials comply with plans and specifications. May take and test samples. May have certification with 0-2 years of experience.

Construction Inspector II

Same as above. Typically reports to Project Manager or Construction Manager and may have certification with 3-7 years of experience.

Construction Inspector III

Same as above. Inspects difficult/complex phases of construction. May process change orders. May have certification with 8-11 years of experience.

Construction Inspector Lead/Supervisor

Performs/supervises complex tasks. Responsible for training/supervision of technicians and/or large projects. Requires certification and typically has 11+ years of experience.

Construction Manager I

Liaison between field staff and project manager. Ensures adherence to contract terms, performance, quality assurance, compliance requirements, and engineering specs. Prepares change orders. Typically requires associate's degree and 0-5 years of management-level experience.

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Construction Manager II

Same as above. Responsible for larger projects. Typically requires bachelor's degree and 6-10 years of management-level experience.

Construction Manager III

Same as above. Responsible for largest projects. Typically requires bachelor's degree and 11+ years of management-level experience.

V. ENGINEERS

Engineering Intern - Student

Under direction of engineer professionals, performs project assignments to acquire relevant work experience. This is a paid, temporary employment position that may or may not become permanent. Typically has some college and 0 years of experience.

EIT I

Entry-level/new graduate who uses prescribed methods, standard techniques, and practices to perform beginning level engineering assignments under the guidance of experienced engineers. Typically has a bachelor's degree, E.I.T. certification, and 0-2 years of experience.

EIT II

Performs continuing development-level engineering work, requires application of standard techniques and procedures. Receives supervision from experienced engineers on non-routine, complex projects and assignments. Could be new graduate with master's degree in lieu of experience. Typically has a bachelor's or master's degree, E.I.T. certification, and 3-5 years of experience.

EIT III

In addition to above, may coordinate work of technicians. Typically has a bachelor's or master's degree, E.I.T. certification, and 6+ years of experience.

Engineer I

Professional engineer (PE) working under general supervision, establishes basic design criteria and performs a variety of skilled professional engineering work in the office or field. Requires application of standard engineering techniques and procedures and professional judgement to make modifications or execute complex features or solutions. Typically has a bachelor's or master's degree and 4-8 years of experience. Requires a PE certification.

Engineer II

PE with responsibility for technical performance on small to medium projects or designated tasks on large projects. Work requires application of standard engineering techniques and procedures and professional judgment to make modifications or execute

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complex features or solutions. May have some supervisory duties or work more independently. Typically has a bachelor's or master's degree and 9-13 years of experience. Requires a PE certification.

Engineer III

PE with major responsibility for technical performance on medium to large projects or multiple projects. Possesses diversified knowledge of engineering principles and practices. Applies advanced techniques, modifications, and theories, and serves as technical liaison on matters pertaining to field of practice. Supervises other PEs, and may have project management duties. Typically has a bachelor's or master's degree and 14-18 years of experience. Requires a PE certification.

Engineer IV

PE with full responsibility for large, complex projects or a number of large projects. Generally reports directly to the firm's principal/president and has administrative qualifications needed to develop a project or projects with clients. Has project management duties; may be at the vice president (VP) level in the company. Typically has a bachelor's or master's degree and 19+ years of experience. Requires a PE certification.

Engineering Manager

Has on-site responsibility for day-to-day operations of a firm office separate from the main office (i.e. division manager). Responsibilities include divisional marketing, human resources (HR), and project production. Typically reports to a VP. Typically has a bachelor's or master's degree and 10+ years of management-level experience. Requires a PE certification.

Engineering VP

Responsible for a segment, discipline, business unit, geographic region, or project type. In larger firms, there are typically multiple engineering VPs. Typically reports to chief executive officer (CEO) in smaller/medium sized firms, or an executive VP in larger firms. In very small firms, this position could be the top level principal/CEO/president who does actual engineering work and charges directly to projects. Typically has a bachelor's or master's degree, PE certification, and 12+ years of management-level experience.

VI. Geographic Information Systems (GIS)

GIS I

Creates/maintains databases, maps, and graphs that can be combined with geographically referenced data, working with GIS software and programs that have the capacity to relate different types of data, such as socioeconomic, demographic, administrative or political boundaries, land use, land cover, environmental, infrastructure, and transportation networks. Typically requires some college or technical training and 1-2 years of experience.

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GIS II

Same as above. Less oversight of work; more independence. May have limited supervisory responsibilities. Typically has a bachelor's degree and 3-7 years of experience.

GIS III

Same as above. Works without supervision, and may supervise others. Bachelor's degree or higher with 8+ years of experience.

VII. GRAPHIC DESIGNERS

Graphic I

Designs art and layouts for material to be presented by visual communications media such as books, magazines, newspapers, websites, television, and packaging. Typically has a college degree with 1-5 years of experience.

Graphic II

Same as above. May have limited supervisory responsibilities. Bachelor's degree with a minimum of 6+ years of experience.

Graphic Manager

Supervises graphic design staff. Decision-maker with final say of layout and content of materials. Bachelor's degree with a minimum of 7+ years of experience.

VIII. Information Technology (IT)

IT Technician

Plans and coordinates activities such as the installation and upgrading of hardware and software, programming, and systems design, the development of computer network. Assists users with troubleshooting, password changes, updates, etc. Bachelor's degree with 1-5 years of experience.

Network/Systems Administrator

Administers design, organization, and implementation of network, and heads technical support staff who manage and maintain hubs, servers, and routers. Communicates with users, technical teams, and vendors on new technology and system upgrades and to determine software and hardware installation requirements. Typically has bachelor's degree and 3-5 of experience.

Programmer Analyst

Analyzes and critiques computer programs and systems, and develops new programs. Reviews users' requests for new or modified computer programs to determine feasibility, cost, and time required, compatibility with current system, and computer capabilities. Plans, develops, tests, and documents computer programs, applying

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knowledge of programming techniques and computer systems. Bachelor's degree with 5+ years of experience.

IT Department Manager

Responsible for firm's computerized operations. Oversees IT technicians and network administrators. Plans and coordinates activities such as the installation and upgrading of hardware and software. Bachelor's degree with 5+ years of experience.

IX. MARKETING

Marketing Assistant

Provides administrative support for marketing activities. High school graduate with 1-5 years of experience.

Marketing Associate

Gives support to advertising programs to promote products or services. Assists in the development and implementation of annual marketing plans and programs. Some college with 6+ years of experience.

Marketing Manager

Responsible for planning, coordinating, executing and evaluating strategic marketing plans. Leads teams and supervises marketing professionals. Some college with at least 5+ years of management-level experience.

Marketing Director

Senior member of firm management who is responsible for all marketing activities, research, market conditions, and sales potential. Bachelor's degree with 5+ years of management-level experience.

Business Development Associate

Seeks business opportunities for the firm. Majority of time is spent making client contacts. Responsible for developing client relationships and soliciting project opportunities. Reports on planned and executed sales activities to business development manager. Bachelor's degree with 5+ years of experience.

Business Development Manager/Director

Manages and aids in the analyzing, planning, research, and development of organization's objectives and strategic plans in order to achieve business opportunities, growth, and financial profitability. Develops plans to achieve growth and financial profitability via acquisitions, mergers, and/or divestitures. Oversees and contributes to the development and research of building on company strengths, identifying potential new markets and business opportunities, increasing share of market, and obtaining a competitive position in the industry. Bachelor's degree or higher with 7+ years of management-level experience.

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X. OFFICE

Administrative Assistant I

General office duties such as answering phones, preparing correspondence and reports, scheduling and maintaining calendars of appointments, setting up meetings, making travel arrangements, taking meeting minutes, etc. High school graduate with office training and 0-4 years of experience.

Administrative Assistant II

Same as above, but with additional/more complex duties, more experience, and less oversight. High school graduate with computer training and 5+ years of experience.

Executive Assistant

Supports executive by handling a wide variety of situations involving the administrative functions of the office that cannot be brought to the attention of the executive. Advises individuals inside and outside the organization on the executive views on major policies or current issues facing the organization. Contacts or replies to contacts from high-ranking individuals who may be from large national or international firms and may involve unique situations; each contact must be handled differently, using judgment and discretion. Associate's degree with 5+ years of experience.

Office Manager

Manages and organizes office operations and procedures, such as word processing, bookkeeping, preparation of payrolls, flow of correspondence, filing, requisition of supplies, and other clerical services. Coordinates activities of various clerical departments or workers within a department. Evaluates office production, updates procedures, or devises new forms to improve efficiency of workflow. Associate's or bachelor's degree with 5+ years of experience.

Records Specialist

Maintains official records. Oversees on- and off-site storage, retention schedules, and disaster recovery plans. Typically has some college and 2+ years of experience.

HR Generalist

Responsible for day-to-day HR functions such as employee relations, payroll, benefits, training, hiring, etc. Ensures compliance with applicable employment laws. Staff-level position with some independence. May have associate's or bachelor's degree with 3+ years of experience.

HR Manager

Responsible for coordinating the hiring, training, and retention of professional staff for the firm, benefits administration, employee relations, etc. Bachelor's or master's degree with 5+ years of management-level experience.

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XI. PHOTOGRAMMETISTS

Photogrammetist I

Measures and assesses aerial photographs to prepare detailed maps and drawings. Examines source data and prepares prints, contour maps, profile sheets, and related cartographic materials requiring technical mastery of photogrammetric techniques and principles. Requires well-developed mapping skills and knowledge of computer-assisted mapping/drafting (CADD) equipment and software. Typically has some college or technical training and 1-6 years of experience.

Photogrammetist II

Same as above. May supervise others or work independently. Bachelor's degree with 7+ years of experience.

XII. PILOTS

Pilot (non-jet)

Pilots corporate turboprop or piston airplanes to transport passengers, mail, or freight, or for other commercial purposes such as surveying. Examines ship's papers to ascertain factors, such as load weight, fuel supply, weather conditions, and flight route and schedule. Typically has a commercial pilot certificate and 8+ years of experience.

XIII. PLANNERS

Planner I

Develops scope and cost estimates, and manages budgets and schedules. May have a bachelor's degree or certification and 0-5 years of experience.

Planner II

Same as above; more experience/education. May lead small teams. Has bachelor's degree and certification with 6-10 years of experience.

Planner III/Manager

Same as above. Works independently and/or has supervisory responsibilities. Works on large/complex projects. Has bachelor's degree and certification with 11+ years of experience.

XIV. PROJECT & CONTRACT COORDINATORS

Project Coordinator I

Checks master schedule and work orders, establishes priorities, and changes schedule according to projects, work order specifications, and established priorities. May have some college with 1-5 years of experience.

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Project Coordinator II

Same as above. May have limited supervisory responsibilities. Typically has bachelor's degree and 6+ years of experience.

Contract Administrator

Administers activities concerned with contracts for purchase or sale of equipment, materials, or services, and negotiates contract with customer or bidder. Reviews bids from other firms for conformity to contract requirements and determines acceptable bids. Typically has associate's degree or higher and 5+ years of experience.

Contract Manager

Manages activities of professional-level personnel concerned with contracts for purchase or sale of equipment, materials, products, or services. Negotiates contracts with representatives. May manage contracts for entire company, department, or for specified product. Typically has bachelor's degree or higher and 5+ years of management-level experience.

XV. PROJECT MANAGERS

Project Manager I

Plans, coordinates, and oversees activities of entire projects to ensure that goals or objectives are accomplished within prescribed time-frame and funding parameters. Reviews project proposal or plan to determine time-frame, funding limitations, procedures, staffing, and allotment of resources to various phases of projects. Establishes work plan and multi-disciplinary staffing for each phase of project, and arranges for recruitment or assignment of project personnel. Is part of a team on large projects, or has sole responsibility for small, minimally complex projects. May have an associate's or bachelor's degree and 1-5 years of management-level experience.

Project Manager II

Same as above. Has sole responsibility for small- to mid-level projects, and/or multiple projects. Has bachelor's degree and typically has 6-10 years of management-level experience.

Project Manager III

Same as above. Has sole responsibility for mid- to large-level projects, and/or multiple projects. Has bachelor's or master's degree and typically has 11-15 years of management-level experience.

Project Manager IV

Same as above. Has sole responsibility for multiple large, complex projects. May be executive-level employee. Has bachelor's or master's degree and typically has 16+ years of management-level experience.

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XVI. RIGHT-OF-WAY SPECIALISTS

Right-of-Way Specialist

Secures purchase or lease of land and right-of-ways for construction projects through negotiation with property owners and public officials. Ascertains which roads, bridges, and utility systems must be maintained during construction. May examine public records to determine ownership and property rights. May be required to know property law. May have some college and 12+ years of experience.

XVII. SCIENTISTS

Environmental Scientist I

Researches to identify and abate or eliminate sources of pollutants that affect people, wildlife, and their environments. Analyzes and documents measurements and observations of air, water, soil, and other sources to make recommendations on how best to clean and preserve the environment. Designs and evaluates waste disposal sites, preserves water supplies, and reclaims contaminated land and water. Includes all types of scientists (biologists, chemists, geologists, hydrologists, etc.). May have a bachelor's degree and 1-5 years of experience.

Environmental Scientist II

Same as above. Less oversight of work; more independence. May help train lower-level staff or have limited supervisory responsibilities. May have a bachelor's degree or higher and 6-10 years of experience.

Environmental Scientist III

Same as above. Works on large/complex projects. May have supervisory responsibilities. May have a master's degree or higher and 11+ years of experience.

Environmental Scientist Manager

Oversees the work of scientists. Assigns and directs projects. Serves as expert advisor to clients and interfaces with regulatory agencies. May have a master's degree or higher and 10+ years of management-level experience.

Laboratory Assistant

Logs samples, tests materials, supports investigation of problems, and identifies corrective actions. Maintains, sets up, and calibrates equipment. May have some college and 1-5 years of experience.

Laboratory Manager

Responsible for the direction, administration, and operation of the laboratory. Oversees staff and ensures quality/safety standards are met. May have a bachelor's degree and 6+ years of experience.

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Archaeologist

Unearths archaeological sites, and documents, itemizes, and studies unearthed items. Researches, categorizes, and interprets artifacts, architectural features, and types of structures recovered by excavation in order to determine age and cultural identity. May have a bachelor's degree or higher and 5+ years of experience.

Historian

Creates chronological account of past events dealing with some phase of human activity, either in terms of individuals or social, ethnic, political, or geographic groupings. Attains historical data by consulting sources of information, such as historical indexes and catalogs, archives, court records, diaries, news files, and miscellaneous published and unpublished materials. Organizes and evaluates data on basis of authenticity and relative significance. May have a bachelor's degree or higher and 5+ years of experience.

XVIII. SURVEYORS

Survey Technician I

Entry-level; works under the immediate supervision and direction of the project surveyor and/or party chief to perform fieldwork tasks related to boundaries, construction, and mapping requirements of survey projects. Assists with uploading/downloading data and maintaining related records. Typically has some technical school or college, no professional license, and 0-3 years of experience.

Survey Technician II

Same as above, with more experience. Less direct oversight from supervisor. Typically has some technical school or college, no professional license, and 4+ years of experience.

Surveyor I

Professional licensed surveyor who establishes official land, air-space, and water boundaries by surveying. Provides data relevant to size, shape, contour, location, elevation, or dimensions of land or land features. Plans, oversees, or conducts surveys of land areas using special high-accuracy techniques including complex computations. Writes descriptions of land for deeds, leases, and other legal documents. Typically has college degree, professional license, and 1-6 years of experience.

Surveyor II

Same as above. May supervise/train lower-level surveyors and/or survey technicians. Typically has college degree, professional license, and 7+ years of experience.

Party Chief

Plans, organizes, and directs work of one or more survey parties engaged in surveying the Earth's surface to determine precise location and measurements of points, elevations, lines, areas, and contours for construction, mapmaking, land division, titles,

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mining, or other purposes. Assumes legal responsibility for work. Typically has college degree, professional license, and 4+ years of experience.

Survey Manager

Plans, manages, and directs surveying/mapping activities and related projects. Supervises professional surveyors and technicians. Establishes and maintains project priorities, budget, and staff assignments. Reviews projects for financial and legal implications. Typically has bachelor's or master's degree, professional license, and 8+ years of experience.

Principal Surveyor

Final responsibility for planning and direction of all aspects of a firm's surveying operations, including business development, client relations, profitability, and collections. Decisions impact the surveying activities of the firm. Typically has bachelor's or master's degree, professional license, and 10+ years of management-level experience.

XIX. TECHNICAL WRITERS

Word Processor

Types, compiles, edits, prints, and stores documents, such as correspondence, reports, records, forms, minutes of meetings, scientific or technical material, numerical data, and tabular information on word processor or computer equipment, from rough draft, corrected copy, recorded voice dictation, or previous version. Typically has high school and 0+ years of experience.

Technical Writer

Writes and updates material for reports, manuals, briefs, proposals, instruction books, catalogs, and related technical and administrative publications concerned with work methods and procedures, installation, operation, and maintenance. May have some college or technical training and 1+ years of experience.

Technical Editor

Refines work and heads and coordinates activities of writers engaged in preparing technical/scientific material for publication in conjunction with or independent from engineering activities. Supervises technical writers. May have degree or technical training and 3+ years of experience.

Proposal Writer

Coordinates the full life-cycle of proposal development. Reviews requests for proposals, researches/gathers materials and information, and provides technical writing, editing, production, and document management. Maintains library of project descriptions and staff bios. Typically has bachelor's degree and 2+ years of experience.

