



Career Service Authority

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Engineer

GENERAL STATEMENT OF CLASS DUTIES

Performs intermediate level professional engineering work on a variety of engineering assignments with emphasis placed upon the application of engineering mathematics, principles, and practices on all phase of routine/moderately difficult engineering projects/assignments.

DISTINGUISHING CHARACTERISTICS

This class performs intermediate level professional engineering work on a variety of engineering assignments. This class is distinguished from the Senior Engineer class that performs full performance professional engineering work on a variety of complex engineering assignments with emphasis placed upon the application of engineering mathematics, principles, and practices in all phases of major engineering projects/assignments. The Engineer class is also distinguished from the Staff Engineer that performs entry level professional engineering work under close supervision while learning and assisting in the design, construction, and/or plan review processes in accordance with standard engineering practices.

Incumbents in the Engineer classification may perform **lead work** over technical employees and may perform **supervision** over technical or clerical employees. This is distinguished from the Engineer/Architect Supervisor that performs professional and supervisory work over professional, licensed engineers and architects, develops, implements, and evaluates engineering plans, work processes, systems, and procedures to achieve annual goals and objectives, and makes budgetary decisions and resources allocation decisions.

Lead work is defined as intermittent or regular performance of some of the elements of supervision which occupies between 20% and 50% of an employee's work time. Lead work is in addition and secondary to the non-supervisory duties performed by an employee. Final accountability remains with the supervisor delegating the lead work assignment. Elements of lead work include: determining priorities, assigning and reviewing work, training employees, and resolving problems.

Supervision is defined as a classification level in which most of the elements of supervision are performed over 50% of the time. A supervisor has the primary responsibility for arranging and directing the work of two or more employees, usually at a specified classification level. **Supervision should not be a predominant duty of an Engineer.**

Guidelines, Difficulty and Decision Making Level:

Guidelines are generally numerous, well established, and directly applicable to the work assignment. Work assignment and desired results are explained by general oral or written instructions.

Duties assigned are generally repetitive and restricted in scope but may be of substantial intricacy. Employee primarily applies standardized practices.

Decisions or recommendations on non-standardized situations are limited to relating organizational policies to specific cases. Problems that are not covered by guidelines or are without precedent are taken up with the supervisor.

Level of Supervision Received and Quality Review:

Under general supervision, the employee receives assignments and is expected to carry them through to completion with substantial independence. Work is reviewed for adherence to instructions, accuracy, completeness, and conformance to standard practice or precedent. Recurring work clearly covered by guidelines may or may not be reviewed.

Interpersonal Communications and Purpose:

Contacts with the public or employees where explanatory or interpretive information is exchanged, defended, and gathered and discretion and judgment are required within the parameters of the job function.

Level of Supervision Exercised:

Coordinates the work of consultants/contractors.

By position, performs lead work or supervises technical staff.

ESSENTIAL DUTIES

The essential duties section is divided into two categories: 1) general duties that are applicable to all Engineers and 2) specific duties applicable to a functional area or discipline. The specific functional areas or disciplines include: Project Management, Plans Review, Traffic Engineering, and Planning & Design. These specific functional areas or disciplines represent the duties performed by the majority of Engineers in the city. The duties performed by incumbents may be described in more than one specific area.

General Engineer duties for all disciplines:

Works on routine/moderately complex projects/assignments and receives supervision on more complex projects/assignments.

Coordinates and approves the work of consultants/contractors.

Attends neighborhood meetings in order to provide information and resolve routine issues.

Attends meetings with other governmental entities and represents the city's interests.

Cultivates, fosters, and maintains positive working relationships with managers, supervisors, employees, and other stakeholders to gain their cooperation and support on assigned projects/assignments.

Prepares a variety of engineering studies, correspondence, records, files, and reports.

By position, performs lead work over technical employees including:

- Develops or modifies work plans, methods, and procedures, determines work priorities, and develops work schedules to provide adequate staff coverage. Provides work instruction and

assists employees with difficult and/or unusual assignments. Assigns and distributes work, reviews work for accuracy and completeness, and returns assignments with recommendations for proper completion.

- Resolves problems encountered during daily operations and determines appropriate solutions.
- Contributes to the development of the performance enhancement plan, documents performance, provides performance feedback, and furnishes information for the formal performance evaluation.
- Responds orally to informal grievances and relays information to the supervisor.
- Documents situations which may be cause for disciplinary action and provides this information to the supervisor.

By position, performs supervision over technical or clerical employees, including:

- Reviews, develops, and/or modifies work plans, methods, and procedures, determines work priorities, and develops work schedules to provide adequate staff coverage. Provides work instruction, assists employees with difficult and/or unusual assignments, and encourages innovation. Assigns and distributes work, reviews work for accuracy and completeness, and returns assignments with recommendations for proper completion.
- Conducts hiring interviews and selects candidate(s) for job opening(s).
- Resolves problems, mediates conflicts encountered during daily operations, determines appropriate solutions, and promotes teamwork. Encourages regular communication and informs staff of relevant business issues and their impact on the organization.
- Develops the performance enhancement plan, documents performance, provides performance feedback, formally evaluates the work of the employee, and provides reward and recognition for proper and efficient performance. Develops and implements training and development plans and opportunities for subordinate staff.
- Encourages and guides others toward goals.
- Ensures quality, effectiveness, and efficiency of unit activities and safety measures.
- Documents causes for disciplinary action, initiates letters of reprimand, and makes formal recommendations for disciplinary action. Responds to formal and informal employee grievances and prepares written responses.

Project Management

Acts as a project manager and administers and monitors the design, construction, maintenance, and/or alteration of routine/moderately difficult projects.

Confers with management in order to maintain established project plans and goals, scope of work, and project work plans including time frames, funding limitations, contract costs, risk factors, and allotment of available resources to various phases of a project.

Reviews projects for code and standards compliance, monitors the progress and quality of a project, and resolves problems by identifying strategies and approaches to overcome barriers.

Tracks schedules, work plans, and cost estimates/projections and monitors projects for conformance to approved plans and contract specifications.

Assists or participates in preparing bid materials defining scope of work and related information necessary for request for qualifications (RFQ) and request for proposals (RFP) and responding to questions concerning the project and/or contract(s).

Monitors the budget for project planning, design, regulatory, and/or construction phases and ensures project deliverables stay on-time, on-target, and on-budget. .

Performs the following duties during the construction phase: verifies that the materials used comply with standards and project specifications, coordinates the scheduling of construction phases, provides

technical assistance to construction personnel, maintains and updates all project documents, and reviews and provides design services for plan modifications required by unforeseen field conditions.

Interacts with utility companies, city agencies/departments, and other governmental agencies to obtain necessary permits and clearances and to ensure regulatory compliance.

Plans Review

Reviews and evaluates blueprints, architectural drawings, design plans, and/or project/development documents submitted for approval utilizing applicable codes/standards/guidelines/laws, appropriate municipal ordinances, and construction and engineering standards, determines review fees, and authorizes the release of approved documents for city permits.

Checks engineering calculations and reviews one or more of the following specialized areas: civil/site engineering, architectural, structural, electrical, plumbing, fire protection, and/or mechanical designs and provides timely oral and/or written communication detailing design and/or construction deficiencies in plans and specifications on routine/moderately difficult designs and plans.

Interacts with the public, professional design consultants, project managers, and contractors to communicate permit application procedures and regulatory and code requirements and interpretations.

Participates in design coordination meetings regarding private development projects and city, state, and regional capital improvement projects in order to ensure timely approval and completion of projects, and resolve any problem areas.

Traffic Engineering

Works in the Traffic Management Center, assists in traffic management for special events, and provides technical support and guidance to event coordinators and safety personnel.

Reviews plans for roadway construction, private development site plans (signs, markings, and street lighting), and new traffic signal construction/reconstruction to ensure compliance with agency standards and policies.

Reviews traffic control/detour plans and approves street occupancy permits.

Performs field inspections and reviews all traffic control devices including traffic signs and pavement markings to ensure compliance with applicable codes and standards.

Identifies traffic safety deficiencies where additional traffic signs and/or pavement markings are needed, prepares work orders for the implementation of modifications, and inspects work orders upon completion to ensure changes were installed as requested.

Assists citizens with problems related to traffic operations, refers problems to the appropriate agency/personnel, and provides prompt responses to citizens.

Planning and Design

Prepares drainage analysis and drainage concept studies for smaller projects including defining the scope of work, coordinating with other city agencies, and reviewing proposals by consultants and submitted reports.

Designs capital improvement projects including project concepts/alternatives and feasibility studies, develops contract bid documents, manages the bidding of projects, and assists the construction crew and inspectors during the construction phase.

Provides summaries and scoped packages for project design and bidding, coordinates multiple entities and groups to ensure successful project delivery, and determines solutions/options to resolve problems, and ensures projects are in line with Master Planning requirements.

Maintains planning and programming documents used to track specific program issues and assists with on-going Master Plan updates by providing input on concerns and issues.

Responds to complaints from citizens, elected officials, and other stakeholders to resolve issues and to ensure compliance with applicable standards and regulations.

Designs public right-of-way infrastructure capital maintenance and/or capital improvement project, obtains federal, state, and other regulatory permits, and coordinates projects with other city departments or external agencies for input and approvals.

Assesses, prioritizes, and recommends resolutions to requests for services or repairs to public right-of-way infrastructure. Requests primarily are received through the City of Denver 311 system but could come from a variety of other City or external sources.

Performs other duties as assigned.

Any one position may not include all of the duties listed. However, the allocation of positions will be determined by the amount of time spent in performing the essential duties listed above.

MINIMUM QUALIFICATIONS

Competencies, Knowledge, & Skills:

Project Management – Applies principles, methods, or tools for developing, scheduling, coordinating, monitoring, evaluating, and managing projects and resources including technical performance.

Engineering – Knowledge of the concepts, principles, theories, and methods required to plan, design, construct, operate, and maintain facilities such as buildings, transportation systems water and sanitary systems, and other public works systems.

External Awareness – Identifies and understands economic, political, and social trends that affect the organization.

Technical Competence – Uses knowledge that is acquired through formal training or extensive on-the-job experience to perform one's job, works with, understands, and evaluates technical information related to the job, and advises others on technical issues.

Decision Making - Makes sound, well-informed, and objective decisions, perceives the impact and implications of decisions, commits to action even in uncertain situations to accomplish program goals, and causes change.

Reasoning - Identifies rules, principles, or relationships that explain facts, data, or other information, analyzes information, and makes correct inferences or draws accurate conclusions.

Financial Management – Prepares, justifies, and/or administers the budget for project area, plans, administers, and monitors expenditures to ensure cost-effective support of project policies, and assesses financial conditions.

Influencing/Negotiating – Persuades others to accept recommendations, cooperate, or change their behavior, works with others toward an agreement, and negotiates to find mutually acceptable solutions.

Planning and Evaluating – Organizes work, sets priorities, and determines resource requirements, determines short- or long-term goals and strategies to achieve them, coordinates with other organizations or parts of the organization to accomplish goals, and monitors progress and evaluates outcomes.

Interpersonal Relationship and Service Orientation – Demonstrated competency in working with a wide range of government departments with diverse business needs, interests, expectations, and requirements.

Oral Communication - Clearly communicates and explains organizational and program policies and work assignments to staff and communicates information about the program area's activities to peers, higher-level managers, administrative staff of other organizations, and internal and external customers.

Written Communication - Composes, reviews, edits, and issues written materials for diverse audiences and communicates purpose in a succinct and organized manner appropriate for context, time, and place. Written materials are of a routine nature and affect the immediate program area(s).

Interpersonal Skills - Establishes and maintains constructive and cooperative interpersonal relationships with staff, peers, higher-level managers, staff from other organizations, internal and external customers, and local stakeholder groups to accomplish a program's mission. Adapts approach to different people and situations.

Teamwork – Encourages and facilitates cooperation, pride, trust, and group identity, fosters commitment and team spirit, and works with others to achieve goals.

Conflict Management – Manages and resolves conflicts, grievance, confrontations, or disagreements in a constructive manner to minimize negative personal impact.

Problem Solving – Identifies problems, determines accuracy and relevance of information, uses sound judgment to generate and evaluate alternatives, and makes recommendations.

Performance Assessment – Knowledge of the principles, methods, and tools for conducting performance assessment to enhance and validate project performance and user acceptance.

Diversity – Is sensitive to cultural diversity, race, gender, and other individual differences in the workforce.

Integrity/Honesty – Contributes to maintaining the integrity of the organization, displays high standards of ethical conduct, understands the impact of violating these standards on an organization, self, and others, and is trustworthy.

Knowledge of planning, coordination, and execution of business functions, resource allocation, and production.

Knowledge of budgeting principles and practices sufficient to be able to assume budgetary responsibilities as required.

Knowledge of various types of contracts, techniques for contracting and procurement, contract negotiation, and administration.

Physical Demands (Physical Demands are a general guide and specific positions will vary based on working conditions, locations, and agency/department needs):

Standing: remaining on one's feet in an upright position.

Walking: moving about on foot.

Sitting: remaining in the normal seated position.

Carrying: transporting an object, usually by hand, arm, or shoulder.

Balancing: maintaining body equilibrium to prevent falling over.

Stooping: bending the body by bending spine at the waist.

Reaching: extending the hand(s) and arm(s).

Handling: seizing, holding, grasping, or otherwise working with hand(s).

Feeling: perceiving attributes of objects by means of skin receptors.

Talking: expressing or exchanging ideas by means of spoken words.

Hearing: perceiving the nature of sounds by the ear.

Eye/hand/foot coordination: performing work through using two or more.

Lifting: raising or lowering an object from one level to another.

Far Acuity: ability to see clearly at 20 feet or more.

Near Acuity: ability to see clearly at 20 inches or less.

Depth Perception: ability to judge distance and space relationships.

Field of Vision: ability to see peripherally.

Accommodation: ability to distinguish and identify different colors.

Working Environment:

Pressure due to multiple calls and inquiries.

Subject to long irregular hours.

Subject to many interruptions.

Subject to varying and unpredictable situations.

Education Requirement:

Bachelor's Degree.

Experience Requirement:

Experience obtained at the Staff Engineer level.

Licensure and/or Certification:

Registration as a Professional Engineer (PE) by the Colorado State Board of Licensure for Professional Engineers at the time of application. Registration as a Professional Engineer (PE) by another state will be accepted in lieu of this requirement providing the applicant is registered by the State of Colorado by the completion of the probationary period.

Possession of a valid driver's license at the time of application.

CLASS DETAIL

FLSA CODE: Exempt

ESTABLISHED DATE: 09/16/1995

REVISED DATE: 03/21/2010

REVISED BY: Patricia Anderson

CLASS HISTORY 3/2010 - This class specification was revised and updated as part of the Engineer/Architect Study (2010).