



SENIOR MECHANICAL ENGINEER

JC: EF270

BU: 92 (NR)

PB: 7

FLSA: Exempt

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job.*

DEFINITION

Performs complex professional engineering work in the preparation of engineering design plans and specifications for the development, modification and maintenance of the District's ventilation, air conditioning, fire protection, plumbing, escalators, elevators and other mechanical systems and equipment; ensures work quality and adherence to established specifications; performs a variety of complex professional tasks relative to assigned area of responsibility; and performs related duties as assigned.

CLASS CHARACTERISTICS

This is the advanced journey level class in the Mechanical Engineer series. Positions at this level possess a specialized, technical or functional expertise within the area of assignment or may exercise lead supervision over assigned lower-level staff. This class is distinguished from the Principal Mechanical Engineer in that the latter performs the most complex work assigned to the series or serves in a working supervisory capacity over lower-level District or contract staff.

REPORTS TO

Assigned Department Manager, Principal Mechanical Engineer or designee

EXAMPLES OF DUTIES – *Duties may include, but are not limited to, the following:*

1. Performs complex and advanced mechanical engineering project duties in the preparation of engineering design plans and specifications for the development, modification and maintenance of the District's ventilation, air conditioning, fire protection, rail vehicle, plumbing, escalators, elevators and other mechanical systems and equipment.
2. Performs engineering design duties, prepares engineering design drawings and specifications, calculations and cost estimates; provides design support during construction.
3. Inspects equipment or facility; analyzes and makes recommendations on engineering solutions for repair, modification and maintenance.
4. Prepares and coordinates the preparation of construction feasibility studies and cost estimates; defines scope and develops conceptual plans; prepares mechanical engineering design project proposals for management review and approval.

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5. Provides assistance in obtaining outside consultant services; schedules consultant proposal submissions; participates in evaluating consultant proposals.
6. Conducts field inspections and investigations at substantial and final completion states; analyzes and provides recommendations to maintenance divisions on complex problem identification and repairs.
7. Coordinates engineering work with that of other engineering divisions and public agencies; administers control of required documentation for mechanical engineering projects.
8. As assigned, may participate in the selection of engineering staff; provides or coordinates staff training; works with employees to correct deficiencies; implements discipline procedures; trains employees in their areas of work including electrical engineering methods, procedures and techniques.
9. Initiates and evaluates design and field engineering changes during construction, takes field measurements of completed work; inspects construction at substantial and final completion stages.
10. Prepares engineering reports, manuals and other correspondence related to work activities.
11. Participates in the preparation and administration of the mechanical engineering program budget; submits budget recommendations; monitors expenditures.
12. Recommends approval of and submits contractor's progress payment applications; maintains documentation of contract deficiencies.
13. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of mechanical engineering.
14. As assigned, conducts field inspections, site investigations and field materials testing duties.

QUALIFICATIONS

Knowledge of:

- Operations, services and activities of a comprehensive mechanical engineering program
- Principles and practices of mechanical engineering design and construction
- Principles and practices of project scheduling and management
- Methods and techniques of field measuring and testing equipment
- Methods and techniques of conducting construction site inspection and investigation.
- Principles and practices of contract administration and management
- Terminology, methods, practices, and techniques used in technical engineering report preparation
- Advanced mathematical principles
- Principles and practices of engineering cost estimating
- Materials and construction methods related to mechanical engineering
- Principles of lead supervision and training
- Current office procedures, methods, and equipment including computers
- Specialized computer programs or systems utilized in mechanical engineering design and

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construction including CADD

- Related building codes, regulations and provisions
- Related Federal, State and local laws, codes and regulations

Skill/ Ability in:

- Developing, reviewing, and modifying complex mechanical engineering plans, designs and specifications
- Leading, organizing and reviewing the work of lower-level engineering staff
- Interpreting and explaining District policies and procedures
- Preparing clear and concise reports
- Managing and administering mechanical engineering construction contracts
- Managing assigned mechanical engineering construction projects
- Performing field inspections and taking measurements
- Analyzing complex mechanical engineering problems, evaluating alternatives, and recommending solutions
- Developing engineering project work scopes, criteria, budgets and schedules
- Interpreting and preparing revisions to engineering plans, drawings, and specifications
- Conducting and overseeing field inspections, measurements, and testing
- Communicating clearly and concisely, both orally and in writing
- Establishing and maintaining effective working relationships with those contacted in the course of work including District officials and the general public

MINIMUM QUALIFICATIONS

Education:

Possession of a bachelor's degree in Mechanical Engineering, or a closely related field from an accredited college or university.

Experience:

The equivalent of three (3) years of full-time professional verifiable mechanical engineering experience, or a closely related experience.

License or Certificate:

Registration as a Professional Engineer in the State of California.

Other Requirements:

Must possess a valid California driver's license and have a satisfactory driving record.

Must be physically able to conduct field inspections and testing as assigned.

Substitution:

Additional professional experience as outlined above may be substituted for the education on a year-for-year basis. A Bachelor's degree is preferred.

WORKING CONDITIONS

Environmental Conditions:

Office environment; exposure to computer screens; field environment; construction site environment; exposure to noise, dust, grease, smoke, fumes, gases, heat, cold, and inclement weather conditions when conducting field inspections and investigations.

Physical Conditions:

Requires maintaining physical condition necessary for walking, standing or sitting for prolonged periods of time.

BART EEO-1 Job Group: 3000 – Engineers
Census Code: 1460 – Mechanical Engineers
Safety Sensitive: No

CLASSIFICATION HISTORY

Created : May 2003
Revised: February 16, 2005
October 2021

Updated :