



MECHANICAL ENGINEER

FC: EF240
PB: 05

PC: 724
BU: 92
Revised: February 16, 2005

*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 a variety of professional mechanical engineering duties in the preparation of mechanical engineering plans, specifications and analyses for the development, modification and maintenance of the District's air conditioning, ventilation, fire protection, plumbing, escalators, elevators, automatic fare collection, transit vehicle mechanical equipment, and related mechanical equipment and systems; evaluates and reviews design and field engineering changes during construction; ensures work quality and adherence to specifications; and performs related duties as assigned.

CLASS CHARACTERISTICS

This is the full journey level class within the Mechanical Engineer series. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the operating procedures and policies of the work unit. This class is distinguished from the Senior Mechanical Engineer in that the latter possesses a specialized technical or functional expertise within the area of assignment or may exercise lead supervision over assigned lower level staff.

REPORTS TO

This position reports to a higher level engineer or a manager.

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

1. Performs a variety of professional mechanical engineering duties in the preparation of mechanical engineering plans and specifications for the development, modification and maintenance of the District's air conditioning, ventilation, fire protection, plumbing, escalators, elevators, automatic fare collection, transit vehicle mechanical equipment, and related mechanical equipment and systems.

Mechanical Engineer

Page 2

2. Prepares engineering specifications, drawings, equipment specifications, sketches and other supporting data for new and potential engineering projects.
3. Prepares preliminary engineering design cost estimates and other information for management and project board review.
4. Reviews approved mechanical engineering criteria for new or proposed projects; compiles, researches and analyzes data for modifications to existing systems.
5. Monitors work products to ensure compliance with established policies and procedures; evaluates proposed changes to approved plans and specifications.
6. Assists in the establishment of schedules and methods for providing mechanical engineering construction project oversight services; responsible for the verification of quantities of materials and adherence to specifications; and may recommend resources to be allocated.
7. Prepares a variety of drawings, reports and correspondence on mechanical engineering construction matters including field and design engineering changes, cost estimates, as-built drawings and related documentation.
8. Provides engineering support to other divisions, departments, outside agencies and other engineering staff.
9. As assigned, reviews construction in progress; performs a variety of field testing duties; submits reports.
10. Provides assistance to construction inspectors in the interpretation of plans and resolution of mechanical engineering problems during construction.
11. Reviews construction and design plans to evaluate potential construction problems; monitors construction project expenditures.
12. Utilizes a variety of engineering programs and applications including CADD.
13. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of mechanical engineering.

QUALIFICATIONS

Knowledge of:

Operations, services and activities of a comprehensive mechanical engineering program.

Mechanical Engineer

Page 3

Principles and practices of mechanical engineering design.

Principles and practices of project scheduling and management.

Methods and techniques of field measuring and testing.

Advanced mathematical principles.

Principles and practices of cost estimating.

Mechanical engineering materials and construction methods.

Current office procedures, methods, and equipment including computers.

Specialized computer programs or systems utilized in mechanical engineering design and construction including CADD.

Related building codes, regulations and provisions.

Related Federal, State and local laws, codes and regulations.

Skill in:

Performing a variety of professional mechanical engineering duties.

Applying principles and practices of mechanical engineering.

Interpreting and explaining District policies and procedures.

Preparing clear and concise reports.

Analyzing mechanical engineering problems, evaluating alternatives, and recommending solutions.

As assigned, conducting field tests.

Interpreting and preparing revisions to engineering plans, drawings, and specifications.

Performing accurate engineering calculations.

Understanding and following oral and written instructions.

Interpreting and preparing revisions to engineering plans, drawings, and specifications.

Communicating clearly and concisely, both orally and in writing.

Establishing and maintaining effective working relationships with those contacted in the course of work.

MINIMUM QUALIFICATIONS

Education:

A Bachelor's degree in mechanical engineering or a closely related field from an accredited college or university

Experience:

Two (2) years of (full-time equivalent) verifiable professional mechanical engineering experience.

Substitution:

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

License or Certificate:

Registration as a professional engineer in the State of California.

Mechanical Engineer

Page 4

Other Requirements:

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

Must be physically able to perform field inspections and investigations.

Field activities may include, but are not limited to, walking on uneven surfaces and visiting construction sites.

WORKING CONDITIONS

Environmental Conditions:

Office environment; exposure to computer screens; field environment; construction site environment; exposure to various industrial hazards and unpleasant conditions when conducting field inspections and investigations.

Physical Conditions:

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

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