



## ELECTRONICS AND COMMUNICATIONS ENGINEER

**JC:** EF110  
**PB:** 05  
**FLSA:** Exempt

**PC:** 724  
**BU:** 92  
May 2002

*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 electronics and communications engineering duties in the preparation of engineering drawings, plans and specifications for the development, modification and maintenance of the District's electronics and communications equipment and systems, including telephone, radio and automated fare collection; evaluates and reviews design changes during installation; ensures work quality and adherence to specifications; and performs related duties as assigned.

### **CLASS CHARACTERISTICS**

This is the full journey level class within the Electronics and Communications 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 Electronics and Communications 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.

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

1. Performs a variety of professional engineering duties in the preparation of engineering drawings, plans and specifications for the development, modification and maintenance of the District's electronics and communications equipment and systems, including telephone, radio and automated fare collection.
2. Assists in the establishment of schedules and methods for the testing and installation of assigned electronics and communications engineering projects.
3. Prepares acquisition and/or installation cost estimates; coordinates engineering work with that of other divisions and supply contractors.
4. Prepares preliminary engineering calculations, drawings, equipment specifications and other supporting data for new or potential projects.

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5. Conducts tests on installed systems; evaluates failed components and failure trends; makes recommendations to resolve problems.
6. Evaluates and determines appropriate materials for use in electronics and communications equipment and systems.
7. Reviews approved project criteria and on existing installations; gathers data regarding modifications or extensions.
8. Evaluates and specifies maintenance intervals and procedures.
9. Coordinates engineering work with that of other divisions and outside agencies; provides engineering technical support to other divisions, District departments and outside agencies.
10. Prepares preliminary construction cost estimates and other information for management and Project Review Board review.
11. Prepares or reviews a variety of reports and correspondence on assigned electronics and communications engineering projects.
12. Reviews contract and vendor submittals for conformance to drawings and specifications; prepares design revisions and change orders.
13. Oversees the work of assigned installation staff on a project basis.
14. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of electronics and communications engineering.
15. Conducts on-site inspections of electronics and communications installations.

## **QUALIFICATIONS**

### **Knowledge of:**

- Operations, services and activities of a comprehensive electronics and communications engineering Program
- Principles and practices of voice and data communications systems and fare collection systems
- Principles and practices of electronics and communications engineering
- Principles and practices of electrical engineering
- Principles and practices of project scheduling and management
- Principles and practices of contract administration
- Electronics and communications equipment and materials
- Terminology, methods, practices, and techniques used in technical engineering report preparation
- Current office procedures, methods, and equipment including computers
- Specialized computer programs or systems utilized in engineering project design including CADD
- Related Federal, State and local laws, codes and regulations

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### **Skill in:**

- Applying principles and practices of electronics and communications engineering in assigned projects
- Preparing clear and concise reports
- Performing and reviewing complex engineering calculations
- Interpreting and explaining District policies and procedures
- Preparing and reviewing engineering drawings, specifications, and plans
- Developing engineering project work scopes, criteria, budgets and schedules
- Analyzing complex engineering problems, evaluating alternatives, and recommending solutions
- Interpreting and preparing revisions to engineering plans, drawings, and specifications
- Understanding and following oral and written instructions
- 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

### **Other Requirements:**

Must possess a valid California driver's license and have a satisfactory driving record. Physical condition necessary to conduct field inspections and testing as assigned, to walk, stand or sit for prolonged periods of time.

### **MINIMUM QUALIFICATIONS**

#### **Education:**

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

#### **Experience:**

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

#### **Substitution:**

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

### **WORKING CONDITIONS**

#### **Environmental Conditions:**

Office environment. May require prolonged exposure to computer monitors. Field environment; construction site environment; exposure to noise, dust, grease, smoke, fumes, gases, heat, cold, and inclement weather.

#### **Physical Conditions:**

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

**BART EEO-1 Job Group:** 3000 - Engineers  
**Census Code:** 1410 - Electrical Engnr  
**Safety Sensitive:** N