

1840GE Junior Engineer/Architect

1841GE Engineer/Architect Assistant

1842GE Professional Engineer/Architect

DEFINITION:

Under supervision, performs a variety of projects in the field or in an office utilizing specialized engineering and/or architectural knowledge plans, designs and reviews construction of projects related to airport, landfill and other public works projects; performs professional engineering and project management tasks in a particular specialty, such as airport infrastructure/operations or solid waste management/environmental operations. The series differs from the Civil Engineering series in that it allows for the use of engineers licensed in a wide variety of specialties.

CLASS CHARACTERISTICS:

Junior Engineer/ArchitectThis is the entry level for the Professional Engineer/Architect series. Positions at this level work under close supervision and are assigned the less complex office and field assignments on technical engineering, project management and/or survey, with special emphasis on receiving training. Limited exercise of judgment is required on detail of work and in making preliminary selections and adaptations of engineering/architectural alternatives.

Engineer/Architect AssistantThis is the experienced, non-registered professional engineering level in the series. Positions at this level are distinguished from Junior Professional Engineer/Architect by their journey-level assignments and responsibility for independent engineering/architectural analysis and recommendations. Positions at this level generally work under the project leadership of a Professional Engineer/Architect and are assigned all but the most complex or specialized assignments.

Professional Engineer/ArchitectThis is the professional engineer/architect level in the series and differs from the Assistant level by the requirement for state registration as a professional engineer by the California State Board of Registration for Professional Engineers and Land Surveyors or licensure by the California Architects Board. This level may be assigned as lead to other engineering/architect staff and/or provide direction to contract staff, and is required to independently perform complex or specialized assignments, provide project leadership, train staff, and consult in the area of specialty. Incumbents may independently review, complete and approve County designed plans as the responsible engineer.

ESSENTIAL FUNCTIONS:

- Designs and prepares drawings, specifications and estimates for construction and maintenance of a wide variety of engineering projects in any of the specialized engineering areas.
- Performs high-level professional engineering and/or design work in connection with cost analysis, progress reports and research or other specialized technical studies.

- For airport assignments, projects may include specialized tasks related to the development, construction, reconstruction, alteration and/or maintenance of the airport terminal, the airfield, and related airport facilities as well as buildings, roadways, bridges and drainage structures, sewer systems, water distribution systems, electrical systems, traffic control devices, etc.
- For landfill assignments, projects may include specialized tasks related to drainage structures, access roads, surface water and ground water monitoring systems, landfill gas monitoring systems, landfill gas and leachate control systems.
- Prepares requests for proposal, scopes of work and contract specifications for design and construction services; participates in the selection of consultants and design firms, and negotiates contracts and change orders. Directs the preparation of project designs, prepares independent cost estimates, project specifications and project schedules.
- Manages projects through planning, scheduling and monitoring critical milestones to ensure projects are completed on time and within budget. Reviews progress payment requests submitted by contractors and consultants for contract compliance, and to ensure billing reflects work completed; approves invoices for payment.
- Makes engineering calculations in connection with field and office assignments; prepares cost estimates for public works construction projects.
- May use computer technology to solve engineering problems, create project designs.
- May function as lead over other professional and sub-professional engineering staff in the performance of various tasks in one or more engineering specialty areas.

MINIMUM QUALIFICATIONS:

Junior Engineer/Architect - Graduation from an accredited college with major work in engineering or architecture OR Possession of a valid certificate as an Engineer in Training issued by the California State Board of Registration for Professional Engineers and Land Surveyors OR Certification in an Intern Development Program with the California Architects Board.

Engineer/Architect Assistant - Graduation from an accredited college with major work in engineering OR Possession of a valid certificate as an Engineer in Training issued by the California State Board of Registration for Civil and Professional Engineers OR Certification in an Intern Development Program with the California Architects Board AND One year of engineering/architectural experience subsequent to college graduation or subsequent to receipt of an EIT/IDP certificate, which demonstrates a general knowledge and proficiency in the area of specialty assignment. Receipt of a Master's Degree in a related engineering/architectural field may be substituted for the required experience.

Professional Engineer/Architect - Possession of a valid Certificate of Registration in an engineering area related to the area of specialty assignment OR Licensing by the California Architects Board AND Two years of responsible and varied experience specific to the specialty area of assignment, which applied the knowledge and abilities listed above Receipt of a Master's Degree in a related engineering/architectural field may be substituted for one year of the required experience. Examples of

certificates that may be required, depending upon assignment, include but are not limited to civil, electrical, mechanical, chemical, sanitary or environmental engineering specialties.

All Levels

Possession of a valid California Driver License (Class C or higher) may be required for some assignments.

Assignments at John Wayne airport also require the ability to obtain an Airport Driving Endorsement within ten (10) days of appointment and possession of or ability to obtain, by date of appointment, a valid Airport Access Badge which requires successful completion of fingerprinting and FBI background check .

KNOWLEDGE, SKILLS & ABILITIES – All levels

Thorough Knowledge of

Depending upon assignment, principles and practices of architecture and/or engineering for the field of specialty assignment.

Analysis of statistically determinant and indeterminate structures.

Mathematics, including algebra, trigonometry and physics and their application to engineering.

Strengths, properties and uses of engineering construction materials; building construction practices, methods and materials.

Project/construction management; cost control; and economics.

Federal, State and local building codes ,ordinances, advisory circulars, and regulations pertinent to department operations.

Ability to

Prepare or direct the preparation of a variety of complex engineering or architectural designs, plans, specifications and technical reports.

Oversee/manage complex construction contracts and direct the work of contract staff performing those projects.

Establish and maintain effective working relationships with managers, co-workers, subordinates, contractors, representatives of other County and government agencies and business entities, and members of the Board of Supervisors and various commissions with advisory or oversight roles in the area of specialty assignment.

Carry out complex assignments with minimal supervision.

For the Professional Engineer/Architect Level:

Plan, organize and lead the work of engineers, architects, technical staff and contract professionals on a variety of complex engineering or architectural projects; may be required for some assignments.

PHYSICAL CHARACTERISTICS & ENVIRONMENTAL CONDITIONS – All Levels

Ability to work in a typical office setting, and to use standard office equipment, including using hands, arms and shoulders repetitively to operate a keyboard and to write; body mobility, strength and stamina to perform moderate physical activities such as inspecting various construction projects and facilities, walking on uneven terrain and traversing hills and/or construction sites may be required; vision sufficient to read printed materials including blueprints and computer screens; hearing and speech sufficient to communicate clearly and effectively in person, to groups of people, over the phone and by radio. Ability to work outdoors in adverse weather conditions, and perform tasks under conditions of loud noises and fumes or foul odors. Mobility to drive a motor vehicle in order to attend off-site meetings and visit work sites may be required for some assignments. Some assignments may require prolonged walking, standing, climbing, bending, stooping and kneeling.