

**CITY OF LOS ANGELES
CIVIL SERVICE COMMISSION**



CLASS SPECIFICATION
POSTED JUNE 1999

05-15-98

STRUCTURAL ENGINEERING ASSOCIATE, 7957

Summary of Duties: Performs professional structural engineering work in the preparation or checking of designs, plans, specifications, estimates, and reports for a variety of structures; and does related work.

Distinguishing Features: Structural Engineering Associate I is the normal entry level to the class. Employees at this level usually have little, if any, experience or special training. They initially perform the less complex professional engineering work under close supervision while learning and assisting in a variety of routine duties. As employees become more experienced, they may work independently and may be responsible for one or more large projects. Positions at this level are designated as three-year temporary training positions under Civil Service Rule 5.30. Employees with two years of full-time City experience as a Structural Engineering Associate I and an Engineer-in-Training (EIT) Certificate, would automatically move to the Structural Engineering Associate II level.

Employees at the Structural Engineering Associate II level perform journey level Structural engineering work requiring a broad knowledge of structural engineering skills. Individuals at this level usually work independently, receiving instructions in general terms, and may be responsible for one or more major City Projects having a wide impact and significant cost. Employees may serve as a lead over a small group of lower level employees.

Employees at the Structural Engineering Associate III level may supervise, or may serve as a lead over a small group of employees, or as a project manager or project engineer involved in work that is technically complex and requires considerable experience, skill and engineering knowledge. Two years of full-time paid, professional experience at the level of Structural Engineering Associate II and registration as a professional engineer with the California State Board of Registration for Professional Engineers is required for advancement to this level.

Employees at the Structural Engineering Associate IV level are non-supervisory technical experts, who shall maintain the skills and expertise necessary to remain at the higher paygrade level. They may conduct extensive research into new technical developments and evaluate their suitability for City use, may prepare

standards for technical design, may develop and conduct training for other employees about new procedures and techniques, or may act as an internal consultant to other employees or on very difficult issues. These positions are designated by Department Management according to the Department's needs. Some positions require registration as a professional engineer with the California State Board of Registration for Professional Engineers, as determined by department management.

Example of Duties: A Structural Engineering Associate:

- checks and may supervise a group of employees who checks, plans for residential and commercial structures for conformance to the City Building Code, zoning ordinances, and applicable state laws;
- may use computer generated calculations to review or conduct analyses of plans involving varying structural systems;
- checks plans for health, fire, and life safety requirements for the varied uses of buildings;
- enforces zoning regulations;
- reviews building and grading permit applications and issues permits;
- answers questions pertaining to Building Code and zoning requirements at a public counter;
- may review and approve soils engineering reports and plans for grading operations;
- may be required to prepare reports and make presentations before City commissions or Council Committees;
- may be required to train other engineering employees in the application of the Building Code, zoning ordinance, State laws, new engineering developments and construction practices;
- trains, and may supervise a small group of employees in the preparation of designs, plans, specifications, quality assurance plans, conceptual and detailed cost estimates, budgetary and authorization for expenditure documents, requisitions to order materials, schedules, EIR's, and negative declarations to EIR's, and other reports necessary for the construction, maintenance and operation of a wide variety of concrete, masonry, steel, metal and timber structures;
- performs dynamic analysis of structures including equipment and equipment support systems;
- administers fabrications and construction contracts;
- prepares feasibility studies, preliminary design, and layouts for proposed structures and facilities;

- advises contractors and construction inspectors on structural problems arising during construction;
- investigates and recommends repair of structural damage or deterioration to existing facilities;
- evaluates wharves and structures for crane, railroad, or other overloads and determines adequacy of structures for proposed loading;
- may act as project engineer, or advises and assists project engineers and construction supervisors on structural engineering problems;
- performs contract administration of engineering consultant contracts for Public Works projects;
- prepares and negotiates change orders with contractors on Public Works construction projects;
- checks and reviews plans submitted by private engineers or developers for structures in the public right-of-way in conformance to City standards and policies;
- provides inspections and makes recommendations for maintenance and repair of City bridges in conformance with California Department of Transportation requirements;
- interprets designs and specifications for construction forces;
- personally performs or assists in the supervision of implementation of quality control/quality assurance activities on construction of all types of structures;
- performs quality control functions for materials used on construction projects, including fabricated assemblies;
- rejects or reports materials which do not meet specifications;
- inspects and makes recommendations regarding the maintenance and strengthening of existing buildings of archaic construction;
- inspects and investigates manufacturing plants prior to the awarding of contracts to determine the adequacy of staff and plant facilities to meet contract requirements;

Example of Duties (cont.):

- performs job administration functions including obtaining permits, contract bid evaluations, and job cost and scheduling control;
- may interpret or clarify assignments and outlines procedures for subordinates, including engineering personnel employed through the use of personal services contracts;
- reviews completed work for conformation to recognized standards and feasibility of construction, as well as for completeness and accuracy;
- reviews project status, initiates changes and provides advice and assistance to engineering and construction personnel;
- prepares plans and calculations for dredging projects;
- recommends corrosion control measures for metal wharves and steel piles;
- may supervise or assist in supervising a large drafting unit engaged in

preparing design drawings for a wide variety of structural and architectural projects;

May occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications: Incumbents must have the following knowledges and abilities:

Knowledges of:

- the principles of structural engineering, including recognized standards, as applied to the preparation or checking of designs, plans, specifications, and estimated for reinforced concrete, masonry, steel, and timber structures, and drafting
- the sources of engineering information;
- engineering mathematics;
- field survey and construction practices;
- engineering mechanics and of mechanics of materials.

The ability to:

- apply engineering principles to the solution of specific problems;
- apply the basic fundamentals of computer aided design and drafting;
- deal tactfully and effectively with employees and the public;
- communicate effectively both orally and in writing;
- prepare clear and comprehensive technical reports, charts and graphs.

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable will be evaluated on an individual basis and depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to accommodate the limitation.

Minimum Requirements:

Graduation from a school of engineering in a recognized four-year college or university with a degree in engineering which includes at least 12 semester units or 18 quarter units of structural engineering courses, or possession of a valid Engineer-in-Training Certificate issued by the California State Board of Registration of Professional Engineers is required.

License: A valid California driver's license may be required.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties, responsibilities, and required qualification of any position shall be.