

STRUCTURAL ENGINEER

DEFINITION

Performs structural engineering planning and design; provides technical direction to District personnel, commissioned architects, and consulting engineers on matters related to structural design; and certifies design plans.

TYPICAL DUTIES

Advises, consults with, and gives technical direction to commissioned architects or structural engineers and on District policies and guides for the design of structural elements of new buildings and the repair and strengthening of existing buildings.

Assists in providing technical direction to personnel of the Structural Engineering Unit in the preparation of structural designs, specifications, and cost estimates.

Reviews plans and specifications submitted by commissioned or consulting structural engineers for conformance to District policies and guides and for possible conflict with other architectural and engineering features, and requests necessary revisions.

Submits recommendations for commissioning of structural engineers by the District, evaluates engineers' proposals on scope of work and fees, reviews engineers' completed work, and recommends partial and final payments.

Assists in the preparation and maintenance of structural engineering standards and specifications to assure conformance to building codes and safety requirements and to improve the quality and economy of construction, maintenance, and operation.

Advises contractors, commissioned architects and engineers, and District construction inspectors on structural engineering problems encountered during construction.

Conducts research and makes reports on structural systems, structural components, installation methods, and their costs.

Confers with and advises District personnel, manufacturers' representatives, and officials of other public agencies, on matters pertaining to District structural engineering guides.

Provides professional certification of structural designs for assigned District and commissioned projects.

Conducts site walks to provide technical guidance, review structural work, resolve construction issues, support emergency response, and ensure compliance with District standards and codes.

Assigns structural material and process testing to laboratories and reviews test reports.

Analyzes soil test data and makes recommendations regarding types of structural foundations and structures to be erected.

Performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

A Structural Engineer performs difficult structural engineering work; provides technical direction to District engineering personnel, commissioned architects and consulting engineers; and signs plans and specifications as a registered engineer.

A Supervising Structural Engineer supervises the activities and personnel of the Structural Engineering Unit, selects and directs the activities of commissioned structural engineers, and represents District interests relative to structural engineering concerns.

An Associate Structural Engineer reviews the work of commissioned architects and engineers for

compliance with District structural engineering design standards and policies; and performs moderately difficult structural engineering requiring a high degree of initiative, judgment, and independence.

SUPERVISION

General supervision is received from the Supervising Structural Engineer. Technical direction may be given to District structural engineering personnel or to commissioned architects and structural engineers on matters related to structural engineering design.

CLASS QUALIFICATIONS

Knowledge of:

- Principles and standard practices of structural engineering
- State and local codes pertaining to structural engineering features of building construction
- Stress analysis, including the design of both statically determinate and indeterminate structures
- Mathematics used in the solution of structural engineering problems, including graphic and mathematical analysis of stresses
- Soil mechanics, testing, and application to building foundation design and construction
- Relationship of structural engineering to the other engineering and architectural features of buildings

Ability to:

- Provide technical review and advice tactfully and effectively
- Provide sustained attention to complex plans and specifications and edit the work of others
- Write clear, concise reports and technical descriptions
- Inspect and evaluate the quality of construction of structural elements
- Work effectively with commissioned architects and engineers, District personnel, and representatives of public agencies and utility companies

Special Physical Requirement:

- Agility to climb ladders and scaffolds, walk on roofs, and move safely in partially completed building crawl spaces

ENTRANCE QUALIFICATIONS

Special:

- The following is a requirement and must be kept valid during the term of employment:
 - A valid license as a Professional Engineer in Structural Engineering issued by the California Board for Professional Engineers, Land Surveyors, and Geologists.
 - A valid driver's license to legally operate a motor vehicle in the State of California and use of a motor vehicle.

The class description is not a complete statement of essential functions, responsibilities, or requirements. Entrance requirements are representative of the minimum level of knowledge, skill, and /or abilities. To the extent permitted by law, management retains the discretion to add or change typical duties of a position at any time, as long as such addition or change is reasonably related to existing duties.