



## CLASS SPECIFICATION

5-27-88

GEOTECHNICAL ENGINEER, 7239

Summary of Duties: Directs or assists in the direction of a geotechnical engineering unit; reviews comprehensive and complex geotechnical reports submitted by private consultants; coordinates the preparation and review of geotechnical and geological reports with engineering geologists; may supervise the performance of such duties; and does related work.

Distinguishing Features: A Geotechnical Engineer receives and reviews geotechnical reports from private consultant soils or geotechnical engineers and geologists. A Geotechnical Engineer is distinguished from an Engineering Geologist in that the latter performs geological studies while the former performs soils or geotechnical studies. A Geotechnical Engineer is a full supervisor. An employee of this class may supervise and review the work of other geotechnical engineers or engineering geologists as well as squads composed of other lower level engineers engaged in geotechnical engineering work.

Examples of Duties: Supervises and directs the work of the geotechnical engineering unit or other professional engineers engaged in professional geotechnical engineering work; determines the physical property of soils and their variation under varying moisture conditions; evaluates the behavior of soils under various conditions of loading that can be anticipated during the design life of structures supported thereon; performs geotechnical investigations required for specific types of projects; interprets geological data, results of field explorations and laboratory tests; works with department Engineering Geologists for an overall review of the safety of proposed developments; confers on geotechnical matters with private Geotechnical Engineers employed by developers and owners; may lead other Geotechnical Engineers in conducting geotechnical or soils studies; confers with City inspection personnel on geotechnical matters and construction problems relative to geotechnical matters; and may be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications: A good knowledge of the physical properties of soils and their variation under varying moisture conditions; a good knowledge of the qualitative and quantitative applications of theories of soil mechanics utilized in the design of foundations, excavations, shoring and embankments; a good knowledge of the means of conducting geotechnical investigations required for specific types of projects; a good knowledge of field exploration

and laboratory testing; a good knowledge of the various required analysis necessary for the design of spread footings, caissons, drilled piles, shoring and basement walls and for the stability of hillside areas; a good knowledge of the problems of expansive soil and their mitigation measures; a good knowledge of the principles of supervision; a good knowledge of safety principles and practices; a working knowledge of the dynamic behavior of soils during earthquakes, including liquefaction; a working knowledge of the techniques required for the development of site-specific response spectra and time-histories; a working knowledge of the laws and regulations related to equal employment opportunity and affirmative action; a general knowledge of City personnel rules, policies and procedures; a general knowledge of memoranda of understanding as they apply to subordinate personnel; the ability to apply the fundamental principles of mechanics to soil behavior; the ability to interpret geological data, results of field explorations and laboratory tests; the ability to evaluate the determination of characteristic site period; and the ability to work with City or consultant Engineering Geologists and consulting soils or geotechnical engineers.

Authority to use the title of Geotechnical Engineer issued by the California Board of Registration for Professional Engineers and Land Surveyors is required.

Registration: Registration as a Civil Engineer with the California State Board of Registration for Professional Engineers and Land Surveyors is required.

License: A valid California driver's license is required.

Physical Requirements: Strength to perform average lifting of up to 15 pounds and occasionally over 25 pounds; body agility and equilibrium involved in climbing and walking over rough terrain; back and leg coordination involved in activities such as stooping and kneeling; arm, hand, and finger dexterity with both hands involved in activities such as reaching, handling, lifting and looking at soil samples and investigating landslides; good speaking and hearing ability; and good eyesight.

Persons with medical limitations may, with reasonable accommodations, be capable of performing the duties of some of the positions in this class. Such determination must be made on an individual basis in light of the person's limitations, the requirements of the positions, and the appointing authority's ability to effect reasonable accommodations to the person's limitation.

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 the duties and responsibilities of any position shall be.