# ENGINEER I

## JOB PURPOSE AND SUMMARY

The employees occupying positions of this class are responsible for performing and resolving routine civil engineering tasks and problems working within established guidelines applying generally known and accepted engineering standards.

## CLASSIFICATION DISTINCTIONS

The Engineer I is an entry level engineer position in the Public Works Department. These employees operate from an office or in the field performing work under the supervision of an administrative supervisor. This is the first step in a career progression that continues to the Engineer II position and the Engineer III position. Engineer II employees work on more complex engineering tasks with less supervision and Engineer III employees manage the most complex engineering projects and are Certified Professional Engineers.

## KEY OR TYPICAL TASKS AND RESPONSIBILITIES

- Designs and prepares engineering plans and specifications on assigned portions of road, drainage control, transportation and other related Public Works development projects. Develops designs on smaller less complex projects and draws preliminary and finished working drawings of construction design or mapping projects.

- Reviews less difficult design plans and specifications for conformance to job requirements. Checks technical content on specialized contract provisions and estimates for road building or paving and develops less difficult special provisions and construction estimates.

- Calculates and verifies grade lines, center lines, site distances, economical depths for cuts and fills, sloping, intersections, pipe capacities, service areas, drainage parameters and similar criteria.

- Conducts and interprets analyses relative to the economics on portions of proposed engineering designs or policies or on the general effectiveness of existing designs or policies.

- Utilizes the computer as an aid to analyzing and developing solutions to engineering problems.

- As part of a survey party, operates proficiently all types of survey instruments; takes, checks and makes accurate sketches and computations from field survey notes; is responsible for proper placement of centerline cross section and staking assignments.

- Serves as inspector in charge of one or more phases of construction, such as bridges, culverts, drainage systems, sewage systems or road building or improvement projects where problems expected on the projects can be resolved by application of standard or precedent engineering practice; measures, computes or estimates work progress as a basis for payments.

- Assures compliance (through sampling and testing) with construction specifications such as proper cribbing of excavation; pouring of seals; strength of concrete; type, size, location and spacing of reinforcing steel; quality of materials; positioning of pipe; compaction of fills and sub-grades, depth, location and smoothness of pavements.

- Prepares a variety of engineering research and administrative materials, and develops correspondence, records, and comprehensive reports in support of engineering projects.

- Assists general public by answering questions and making referrals relative to a variety of Public Works issues.

- Performs other related duties as assigned.

## QUALIFICATIONS

- B.S. degree in Civil or related engineering.

**- OR -**

- High School Diploma or G.E.D. and two (2) years relative engineering work experience and possession of an E.I.T. certification.

**Knowledge of....**engineering principles, practices and the techniques and equipment involved; physical (hydraulics, mechanics, etc.) and mathematical (trigonometry, calculus, geometry, etc.) sciences and their application to engineering and field surveying computations and engineering design; construction materials, material testing and application; basic principles of supervision.

**Ability to....**understand and resolve engineering problems and to adapt approved engineering methods and standards to the planning, design and construction of a variety of public works projects; perform technical research work and to give reliable advice on routine engineering problems; draft maps and detailed working drawings, interpret plans and specifications and to become familiar with engineering standards; perform technical computations, to run quality tests, to make estimates and to compile engineering data and statistics; establish and maintain effective relationships with other engineering and surveying personnel, contractors, and the public; express ideas effectively, orally and in writing; understand Department policies and procedures as well as work standards and codes applicable to the job; obtain a valid (Washington State) drivers license at time of hire; use and care for the instruments and equipment employed on various assignments (survey, drafting, etc.).

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