

## **ENGINEER II**

### **JOB PURPOSE AND SUMMARY**

The employees occupying the positions of this class are responsible for performing and resolving technical and complex civil engineering tasks and problems within the framework of broad engineering and administrative guidelines.

### **CLASSIFICATION DISTINCTIONS**

The Engineer II position is the second step in a career progression that begins with Engineer I and ends with Engineer III. Engineer II employees perform tasks with limited supervision and require substantial use of independent judgment within the scope of advanced engineering assignments. Engineer I employees perform basic engineer work under the supervision of an administrative supervisor. Engineer III employees manage the more technical engineering projects and are Certified Professional Engineers.

### **KEY OR TYPICAL TASKS AND RESPONSIBILITIES**

- Designs, prepares and coordinates the development of construction engineering plans and specifications on all (as a project manager) or portions of (as a team member) major road, bridge, sewer and drainage, or traffic signal and transportation improvement projects; determines intersection, box culvert, pump station and similar designs. Develops cost estimates and recommendations towards final cost estimates.
- Directs and participates in the development of detailed construction drawings, topographical profiles and related maps and specification sheets used in Public Works design projects planning and construction.
- Reviews more difficult design plans and specifications for conformance to job requirements. Develops and checks more difficult specialized contract provisions, design agreements and design calculations and may attend pre-bid and pre-construction conferences to outline principle construction features.
- Computes more difficult mathematical calculations used in developing profile, cross-sections, etc. Plots, profiles and cross-sections, figures grade lines, calculates plots and calculates traverses and similar criteria. Establishes points and elevations, proper location and drainage for streets, sewers, runways and other like structures.
- Conducts studies and analyses on suitability of existing structural facilities and general policies, and feasibility (economic, realistic) of proposed designs. Interprets results and makes recommendations, both short and long term, relative to the subject assigned. Utilizes the computer as an aid to analyzing and developing solutions to engineering problems.

- Reviews and coordinates the preparation and use of traffic signs; prepares plans and drawings for other traffic control devices; develops and analyses results of traffic engineering studies.
- Checks street plans and profiles of short plats and sub-divisions in order to assure conformance to standards of the American Public Works Association and State Department of Transportation, County ordinances and Commissioner requirements; prepares Engineer's reports relative to design deficiencies and recommends the proper corrective action in obtaining compliance. May represent Public Works at public hearings.
- Reviews development plans for sewer and storm drainage for compliance with County Standards. Prepares staff reports with respect to utilities for proposed developments. May represent Public Works Department at public hearings for proposed developments. Designs and coordinates sewer and drainage improvement projects. Prepares summaries of design deficiencies and recommends the proper corrective action.
- Explains and interprets agreements to contractors; enters "as-built" information to office plans. Evaluates partial stage completion and recommends payments. Prepares construction reports for matching funds and cooperative contracts with federal, state and city governments.
- Inspects and leads the inspection of the construction of public works projects; reviews plans and specifications for contract construction work; observes the work of the contractor and verifies that it conforms to plans and specifications; checks material quantities and quality; reviews reports of tests and inspections made by subordinate inspectors; prepares and reviews the preparation of monthly cost and progress estimates, other engineering data and final reports upon the completion of construction jobs.
- Instructs field crews engaged in taking soil samples and making field and laboratory tests of soil conditions and characteristics; prepares soil profiles in connection with highway location and construction jobs; prepares reports of soil investigations and analysis for use in the location and design of highways and highway structures.
- Checks contract plans against PS&E data; performs physical testing of concrete and reinforcing bars, pre-stress strand and other materials.
- Assists in quality control review and analysis; maintains records of progress sampling; reviews test reports for completeness and accuracy.
- Directs a survey party ensuring good survey practices are used and is responsible for the accuracy, completeness and efficient functioning of the group. Maintains field books; reads and interprets grade sheets and other construction plans to determine locations for stakes to be set, the number and type to be used and when they should be placed; decides what control points will be tied into; develops the general work schedule for the party; and directs the training of subordinate personnel.

- Instructs subordinates engaged in the computation of survey field notes and the preparation of topographic and contour maps, plans, profiles, cross-sections, mass diagrams and other data; personally, does the more difficult computations and engineering drafting and reviews the computations, drawings and mapping of subordinates; prepares estimates of materials and earthwork quantities and costs for construction and maintenance of structures; prepares and checks property descriptions.
- Assists general public by answering questions and making referrals relative to special use permits, road improvements and developments, both in the office and at neighborhood meetings; explains requirements of special use permit process, developments and road improvement districts and methods of establishing or obtaining them; maintains close coordination between parties involved (citizens, Commissioners, other Public Works officials) from beginning to end of project.
- Prepares applicable resolutions and documents for developments and RID's; may represent Public Works Department at public hearings relative to formation and completion of developments and RID's; conducts and certifies elections for the formation of a RID when the RID is initiated by the Board of Commissioners; reviews petitions for RID by residents to assure legality of signatures; prepares legal descriptions and deeds necessary to convey right-of-way in a RID; researches titles on properties in the RID Office, information on right of ways, and corner monumentation.
- Assists Prosecuting Attorney in preparation of bond sale for RID financing; prepares informational pamphlets and procedure manuals.
- Prepares more difficult and administrative reports, develops correspondence, records, and comprehensive reports as assigned in support of engineering projects.
- Performs other related duties as assigned.

### **QUALIFICATIONS**

- B.S. degree in Civil or related Engineering and two (2) years experience in an Engineering I classification or equivalent.
- OR -**
- High School diploma or G.E.D. and four (4) years relative engineering work experience to include a minimum of two (2) years experience in an Engineering I classification or equivalent and possession of an E.I.T. certification.

**Knowledge of....**mathematics through trigonometry and its application to field surveying and engineering computations; construction materials sampling and testing in the field and laboratory and of survey equipment and techniques; engineering principles and practices and of the physical sciences (hydraulics, mechanics, etc.) involved; modern engineering methods and techniques as related to construction and maintenance of public works and public utilities; principles of effective supervision; the application and interpretation of the County regulatory codes; Departmental Policies and procedures, work standards and codes applicable to the job.

**Ability to....**adapt approved engineering methods and standards to the planning, design and construction of a variety of public works projects; read and interpret difficult plans and specifications and to become familiar with engineering standards; perform technical research work and to give reliable advice on difficult engineering problems; prepare engineering records and to write concise technical reports; draft, interpret and utilize engineering plans, maps, specifications and reports; make involved and difficult engineering computations, to design difficult and complex major engineering projects, and to prepare complete engineering plans and specifications; supervise and coordinate the work of other engineers, Engineer Technicians, subordinates and trades personnel; effectively manage resources dedicated to specific projects; to establish and maintain effective relationships with other engineering and surveying personnel, contractors, and the public; speak effectively in public; acquire knowledge of Clark County building codes and zoning regulations and Clark County comprehensive plans, shoreline management regulations and the SEPA state guidelines; obtain a valid Washington State drivers license at time of hire.

Revised 02-97  
Office use: 6/22/00