

Engineer Entry Level Job Description

Under direction, as a trainee and productive worker, performs basic engineering and related work in a civil hydrographic, hydraulic, materials, utilities, environmental, public works and/or public health engineering program; does other related duties.

NOTE: The examples of work for this title are for illustrative purposes only. A particular position using this title may not perform all duties listed in this job specification. Conversely, all duties performed on the job may not be listed.

EXAMPLES OF WORK:

As trainee and productive worker:

Reviews and interprets plans and specifications.

Operates the transit and level.

Stakes final lines.

Locates and plots topographical features.

Performs engineering calculations.

Drafts construction plans, participates in preparing as-built plans, and participates in preparing cost estimates of materials for specific projects.

Checks and samples materials for laboratory tests; lays out and conducts detailed inspections of excavating, embankment, earthwork, concrete, sheet asphalt, curbs, pipes, guard rails, culverts, inlets, utility holes, wells, and top-soiling.

Collects, computes, and analyzes hydrologic, hydraulic, and other engineering data for water supply and/or flood control work.

Investigates dependable yield of surface and subsurface water supplies.

May participate in hydrologic analyses of drought, storm rainfall, and flood runoff, and develops basic flood control data.

Performs hydraulic computations to design channel improvements; performs the field and office engineering work involved in shore protection, navigation channel and marina construction, and management of riparian lands.

Conducts inspections and physical and chemical tests of all materials and products used in the construction and maintenance of highways and transportation facilities.

Performs the field and office work involved in measurement and determination of quantities and costs of structures, facilities, or studies of utility services, rates, and safety.

In local service, may learn to inspect and oversee construction of bridges, buildings, dams, highways, and other public works projects to ensure that procedures and materials comply with plans and specifications.

In local service, may learn to inspect finished installations to ensure conformity to plans and specifications.

In local service, may investigate complaints received regarding public works construction activities and recommend appropriate remedial action.

Prepares engineering and other reports.

Maintains records and files.

Will be required to learn to utilize various types of electronic and/or manual recording and information systems used by the agency, office, or related units.

REQUIREMENTS:

EDUCATION:

Graduation from an accredited college or university with a Bachelor's degree in Civil Engineering.

NOTE: A Bachelor of Science degree in Engineering Technology (BSET) in a field related to civil engineering from an accredited college having a curriculum approved by the Accreditation Board of Engineering Technology (ABET) meets the above education requirements.

NOTE: Possession of a valid Professional Engineer's License issued by the New Jersey State Board of Professional Engineers and Land Surveyors may be substituted for the Bachelor's degree in Engineering.

LICENSE:

Appointees will be required to possess a driver's license valid in New Jersey only if the operation of a vehicle, rather than employee mobility, is necessary to perform essential duties of the position.

KNOWLEDGE AND ABILITIES:

Knowledge of the principles of civil engineering.

Knowledge of methods used to review and interpret engineering plans and specifications.

Ability to apply basic civil engineering principles and techniques.

Ability to conduct field inspections and investigations.

Ability to perform engineering mathematical computations.

Ability to operate AutoCAD.

Ability to conduct field and laboratory tests.

Ability to prepare engineering reports.

Ability to read and interpret engineering plans and specifications.

Ability to inspect materials, workmanship, and construction and installation of various public works facilities when required in local service.

Ability to apply local ordinances, resolutions and codes relating to public works to specific cases when required in local service.

Ability to observe prescribed inspection procedures.

Ability to utilize various types of electronic and/or manual recording and information systems used by the agency, office, or related units.

Ability to read, write, speak, understand, and communicate in English sufficiently to perform duties of this position. American Sign Language or Braille may also be considered as acceptable forms of communication.

Persons with mental or physical disabilities are eligible as long as they can perform essential functions of the job with or without reasonable accommodation. If the accommodation cannot be made because it would cause the employer undue hardship, such persons may not be eligible.