

ENGINEER I

DISTINGUISHING FEATURES OF THE CLASS: This is a full-performance engineering position requiring knowledge and experience in a wide range of professional engineering duties. The work is performed in accordance with established engineering principles, codes and regulations, with flexibility allowed for choosing methods and materials. General directions are received from a higher level engineer for projects including the design, specification writing, field inspections, surveys, project coordination and land acquisition functions, and AutoCAD design/drafting. The position differs from that of Engineer II in that fewer and less complex projects are assigned with less supervisory and administrative responsibilities involved. The position differs from that of Assistant Engineer in that assignments are more complex with relative independence allowed in deciding work methodology and materials. Does related work as required.

TYPICAL WORK ACTIVITIES:

Performs Assistant Engineer responsibilities but at a higher and more responsible level with less senior engineering oversight;
Manages small internal projects as the project lead and able to take on larger responsible roles in major project coordination and management;
Develops engineering design for roads, culverts, bridges, buildings and facilities;
Writes technical specifications and front end documents for projects of moderate difficulty;
Develops plans, cost estimates and contract documentation for projects of moderate difficulty using available tools such as AutoCAD, Excel spreadsheets, etc.;
Evaluates contractor's proposals, negotiates revisions and participates in obtaining final agreements;
Inspects construction for conformance with contract provisions;
Interprets contract specifications and construction standards for contractors and resolves differences in interpretation;
Monitors consultants work by reviewing plans and reports, evaluating compliance with policy, standards, procedures, schedules and contracts, project tracking and payment approvals, coordinating the consultants work with the agency programs and preparing periodic reports with guidance from higher level engineers;
Prepares estimates of materials quantities and work progress for contractor's payments;
Maintains records and project data and is able to utilize computer systems in daily work activities;
Coordinates projects including liaison with contractors and vendors, scheduling and gathering general project information for reports;
Processes necessary paperwork for construction contracts such as minority business requirements, insurance coverage, wage rate documents, claims, releases, payment records and project close-out paperwork;
Prepares drawings of roads, bridges, buildings and other structures from computations or rough drafts using AutoCAD software;
Develops plans and profiles of roads and bridges;
Develops plans, sections, elevations and schematics for architectural, structural, electrical, heating, ventilating, air conditioning and plumbing systems for buildings and related facilities using AutoCAD software;
Inspects physical and operational condition of existing roads, bridges,

and buildings;
Researches engineering procedures and materials to determine the best methods and materials to use in an assigned project;
Works with Parks, Planning, Highway, and Buildings and Grounds Departments to assist with design and/or resolution of small projects/assignments;
May be required to maintain computer information systems;
May participate in establishment of Right-of-Way by preparing property release documentation and conducting negotiations;
May investigate traffic conditions and prepare informational reports and recommendations;
May assist with training and/or support of Assistant Engineers and Interns.

FULL PERFORMANCE KNOWLEDGE, SKILLS, ABILITIES AND PERSONAL CHARACTERISTICS:

Good knowledge of the principles and practices of engineering;
Good knowledge of construction procedures including design, specification writing, inspections and surveys;
Good knowledge of the tools, terminology and materials used in the construction of roads, bridges, buildings and facilities;
Good knowledge of the codes, laws, rules, regulations and procedures governing engineering design and construction;
Good knowledge of CAD software and higher functions of civil applications such as preparation of surfaces and volume calculations and creation of profiles;
Good knowledge and exhibited mastery of basic computer applications such as Word, Excel, Access Power Point, etc.
Working knowledge of land acquisition procedures, Right of Way and condemnations;
Ability to conduct studies pertaining to the best methods and materials to use in an engineering project;
Ability to prepare plans, specifications, narrative and tabular reports;
Ability to coordinate engineering projects of moderate difficulty;
Ability to train and mentor subordinate staff;
Ability to establish cooperative relationships with contractors, consultants, vendors, co-workers and other staff;
Good verbal and written communication skills;
Good organizational skills;
Accuracy and attention to detail.

MINIMUM QUALIFICATIONS:

- A) Graduation from a New York State registered or regionally ABET accredited college or university with a Bachelor's Degree in engineering or engineering technology (*specialties as described below); **OR**
- B) Graduation from a New York State registered or regionally ABET accredited college or university with an Associate's Degree in engineering or engineering technology (*specialties as described below), AND two (2) years experience performing either:
- 1) Engineering design and drafting of highways, bridges,

- culverts, and/or facilities, using AutoCAD software; **or**
- 2) Field inspection of highways, culverts, bridges and/or facilities; **or**
- 3) Technical writing of engineering reports and project bid documents / technical specifications; **OR**
- C) Graduation from high school or possession of an equivalency diploma and four (4) years of experience as defined above; **OR**
- D) An equivalent combination of training and experience as defined by the limits of A), B), and C) above.

* Acceptable areas of engineering education include Civil Engineering, Structural Engineering, Environmental Engineering, Mechanical Engineering, Architectural Engineering, or a closely related field. Degrees in the following fields are not acceptable: Chemical Engineering, Industrial Engineering, Public Health Engineering or Computer Technology

SPECIAL REQUIREMENTS AT TIME OF APPOINTMENT:

- 1) Possession of the appropriate level of Motor Vehicle Operator's License.