

**DISTINGUISHING FEATURES OF THE CLASS:** This position involves performing advanced technical engineering work with responsibility for the independent application of principles of civil engineering, physics, advanced engineering mathematics and mechanics of materials to engineering problems. The employees may be in charge of project assignments or may be engaged in some special phase of engineering investigation. Project assignments are received from a superior who defines the scope of work to be performed. The employee uses independent judgment in planning work details and in making technical decisions on routine problems. A higher level engineer gives advice and instruction on more difficult technical problems. Supervision may be exercised over subordinate personnel assigned as part of a project team in the office or in the field.

**TYPICAL WORK ACTIVITIES:** *The typical work activities listed below, while providing representative examples of the variety of work assignments in the title, do not describe any individual position. Incumbents in this title may perform some or all of the following, as well as other related activities not described.*

Prepares manually drafted and computer aided design drafted (CADD) plans and details and specifications of proposed engineering projects;

Makes field investigations, takes samples, analyzes/tests samples, uses field engineering and testing equipment and vehicles;

Supervises and assists field parties engaged in making property and/or topographic surveys for establishing lines and grades for all public works projects;

Participates in all aspects of design, construction inspection, consultant management and contract management;

Prepares manually and computer aided reports, grant applications, invoices, design computations, cost estimates, time or material schedules and specifications;

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Performs detailed computations, design, and planning for highways, bridges, traffic controls, buildings, airport projects, water supply, wastewater systems, drainage systems, utilities, and other public works facilities.

### FULL PERFORMANCE KNOWLEDGES, SKILLS, ABILITIES, AND PERSONAL CHARAC-

TERISTICS: Good knowledge of the principles and practices of civil engineering (statics, dynamics, fluid mechanics, hydraulics, structural steel design, concrete design, timber design, soil mechanics, highway design, surveying, drafting, water and wastewater); good knowledge of methods and materials of construction; good knowledge of surveying principles and practices, including computations, mapping and drafting; good knowledge of mathematics; working knowledge of the properties and attributes of materials used in engineering; ability to read, interpret, and understand engineering plans, specifications, estimates, drawings, deeds, property descriptions, easements, and right-of-ways; ability to perform shop drawing reviews; ability to perform construction inspections; ability to plan and organize the work of subordinate employees; ability to prepare clear and accurate technical reports; ability to express ideas clearly both orally and in writing; ability to perform economic evaluations in terms of present worth costs; ability to work effectively with others; skill in the use of a workstation using computer aided design drafting; skill in the use of surveying instruments; mental alertness; accuracy; and initiative.

### MINIMUM QUALIFICATIONS:

- (A) Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees with a Bachelor's Degree or higher in civil engineering or a related field including or supplemented by courses in drafting and computer aided design systems, and two (2) years of technical engineering experience which included drafting and computer aided design systems;

or

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- (B) Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees with an Associate's Degree in civil engineering or a related field including or supplemented by courses in drafting and computer aided design systems, and four (4) years of technical engineering experience which included drafting and computer aided design systems; or
- (C) Six (6) years of experience in acceptable engineering work as described in (A&B) above.

*Note: Civil engineering is a branch of engineering dealing with design and construction of highways, bridges, waterworks, harbors, or other infrastructure projects. Candidates must demonstrate why a degree is related to civil engineering. Candidates must also show that course work included or was supplemented by courses in drafting and computer aided design systems. Technical engineering experience is experience that involves planning, designing and implementing projects on roads, bridges, buildings water or waste water projects or other infrastructure projects. Technical engineering must demonstrate evidence related to knowledge of mathematical sciences and experience in working from plans or drawings, taking measurements and calculations, interpreting graphs or tables and interpreting technical instructions or dimensional drawings. In addition to showing technical engineering experience, candidates must demonstrate drafting experience including plotting and drawing maps, plans, specifications, architectural drawings or similar documents including computer aided design systems.*

**NOTE:** Your degree or credits must have been awarded by a college or university accredited by a regional, national, or specialized agency recognized as an accrediting agency by the U.S. Department of Education/U.S. Secretary of Education. If your degree or credits were awarded by an educational institution outside of the United States and its territories, you must provide independent verification of equivalency. A list of acceptable companies who provide this service can be found on the Internet at: <https://www.cs.ny.gov/jobseeker/degrees.cfm>. You must pay the required evaluation fee.

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Public Hearing: N/A  
NYS Civil Service Commission Approval: N/A

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