

**CLASS TITLE:****CIVIL ENGINEER**

Class Code: 02968100

Pay Grade: 27A

EO: B

**CLASS DEFINITION:**

**GENERAL STATEMENT OF DUTIES:** To perform civil engineering work in connection with the design, construction, materials and maintenance of highways, bridges, traffic management projects and other transportation projects; and to do related work as required.

**SUPERVISION RECEIVED:** Works under the general supervision of a superior with some latitude for the exercise of initiative and independent professional judgment; work assignments are received in outline form as to objectives and the utilization of appropriate methods and processes; work is reviewed upon completion for results attained, professional and technical adequacy to desired objectives and goals.

**SUPERVISION EXERCISED:** As required, plans, supervises and reviews the activities of technical and clerical personnel assigned to assist.

**ILLUSTRATIVE EXAMPLES OF WORK PERFORMED:**

To participate in the design of bridges and bridge structures; to determine the moment of inertia of special beam sections; to check the designer's solutions of similar problems; to make stress analyses and proposed designs of simple span bridges; to lay out topographical plans from field notes; and to solve problems relating to simple and compound curves and spirals.

To participate in the design of roads, road structures, and associated traffic management systems; to design and analyze traffic systems including traffic signal systems, lighting systems, traffic striping detail and traffic management support systems; to establish grades from original profiles, cross sections or topographical plans of the proposed road location; to determine center line for bridge approaches and to determine center line changes in road location; to compute corrected road or approach lengths; to calculate super elevation for curves; to design drainage systems, retaining walls and cut and fill slopes; and to assist in the preparation of detailed estimates for use in contract proposals and for federal reports.

To oversee construction and/or maintenance of highway and bridge projects; to oversee the inspection of all materials going into such projects; to be responsible for the inspection of the workmanship and practices of contractors and/or state personnel engaged in these projects; to assist a superior in the review of plans, specifications and designs submitted by contractors, architects or engineers; to interpret provisions of contracts, plans, specifications and designs; to oversee that construction work schedules are maintained; to supervise the continuous inspection of workmanship, materials and methods on projects.

To oversee the planning, supervision and review of the materials testing activities on bridge, highway construction or maintenance projects; to assist in the preparation of material specifications; to be responsible for the review of personnel assigned to materials plants and construction projects; and to assist in materials research and evaluation.

To oversee the preparation of contract specifications for the design, construction, and/or maintenance of roads and bridges; to review contracts and specifications prepared by consultant firms for use on specific projects to ensure that all items are covered and are in agreement with the appropriate requirements; to review requests by contractors for changes in the plans in accordance with delegated authority; to prepare computations and cost estimates for contract proposals; and to participate in the negotiation with consulting engineers on fees covering numerous studies and design reports; for design contracts; to prepare such consultant agreements, or to exercise supervision for monitoring and evaluating contracts; to ensure compliance with all federal and state regulations; to participate in reviewing and evaluating final quantities used in various construction projects; to ensure that all work accomplished and

materials utilized conform with appropriate federal and state specifications and regulations; to check plans, cross sections, diagrams, sketch computation sheets and all mathematical formulas; and to supervise methods and procedure reviews that are conducted on contracts.

To do related work as required.

## **REQUIRED QUALIFICATIONS FOR APPOINTMENT:**

**KNOWLEDGES, SKILLS AND CAPACITIES:** A working knowledge of civil engineering principles and practices as applied in location, design and construction of roads and bridges; a working knowledge of project management methods and techniques; the ability to operate all standard engineering and surveying instruments; the ability to prepare plans for highways and bridges under class supervision; the ability to perform all the computations applied to standard engineering operations; the ability to plan and supervise the work of a assigned personnel; the ability to read and interpret the assigned types of civil engineering plans, maps and specifications; the ability to utilize computer technology for engineering applications; the ability to prepare accurate engineering proposals, papers, plans, and technical correspondence; the ability to understand and carry out complex oral and written instructions; the ability to establish and maintain effective working relationships; the ability to write effectively and to make oral presentations; and related capacities and abilities.

## **EDUCATION AND EXPERIENCE:**

**Education:** Such as may have been gained through: graduation from a college of recognized standing with specialization in Civil Engineering.

**SPECIAL REQUIREMENT:** At the time of appointment must possess, at least an Engineer-in-Training certificate of registration issued by the Rhode Island State Board of Registration for Professional Engineers and must maintain such as a condition of continued employment.

Class Revised: March 19, 2006

Class Revised: July 1, 2012