

**MONTGOMERY COUNTY GOVERNMENT  
ROCKVILLE, MARYLAND  
CLASS SPECIFICATION**

**Code No. 004035  
Grade 18**

**ENGINEER TECHNICIAN II\***

**DEFINITION OF CLASS:**

This is full performance level technical paraprofessional engineering work in one of the major engineering specialties, e.g., civil, traffic, environmental, energy, or fire protection. Employees in this class have contacts with engineers, architects, contractors, consultants, the general public, and related County personnel to coordinate accomplishment of projects, exchange information, provide technical advice and/or guidance, and solve problems. An incumbent offers limited direct service or assistance to the public.

An employee in this class is responsible for performing various duties to support an engineering program such as: assisting in highway design by performing calculations and drawing plans, conducting traffic studies and preparing signal or sign and marking plans, reviewing plans, etc. Incumbents receive work objectives and deadlines with assignments and independently plan and perform the work, resolving most conflicts and referring only unusual or unprecedented situations to the supervisor for assistance. Work is reviewed upon completion to ensure technical soundness and conformity to standard operating procedures, policies, and objectives. Guidelines include industry standards and State and County codes and regulations which are not always completely applicable to the work and may require adaptation or modification. The complexity of the work of this class is characterized by assignments which involve a variety of processes and methods and require analysis of many factors and an understanding of interrelationships among these factors, as in performance of drainage calculations and property boundary calculations; performance of engineering computations; and the design of new or modified highways and storm drains. Efforts of these employees involve treating a variety of engineering problems, adapting precedent or established procedures as necessary to accomplish objectives. Typical projects involve consideration of many interrelated factors, require use of the full range of paraprofessional engineering methods, and involve working with unusual administrative requirements, such as with federally funded projects. Work affects the overall design or operation of County engineering projects such as highway design or construction, storm drainage systems, and traffic signing and signalization. The work is primarily sedentary and performed in an office environment; however, exposure to some risks is present when employees are involved in periodic field visits to construction sites and work zones.

**EXAMPLES OF DUTIES: (Illustrative Only)**

**Common to All Engineering Specialties:**

- Prepares estimates of work hours, cost and quantities of materials and equipment, technical specifications, assessments, and special provisions for use in contract documents for complex projects for design, construction, or related areas where the full range of paraprofessional engineering methods are required.
- Prepares correspondence for signature of senior personnel in response to citizen inquiries and complaints.

**Civil Engineering:**

- Reviews subdivision development plans and permit applications for complex projects such as new road and storm drainage construction as well as for grading, paving, driveways, and sidewalks to ensure conformance to established codes, standards, regulations, specifications, and design criteria.
- Drafts construction drawings for complete complex construction projects for highways and storm drainage structures which illustrate paving plans, profiles, and details; storm drain plans and profiles; structure and pipe schedules; superelevation tables; earthwork summary tables; curve data tables; sediment control plans and details; and right-of-way plats/plans.
- Prepares technical and material specifications; cost, material, and work hour estimates; and other contract documentation.
- Performs related duties as required.

#### **Traffic Engineering:**

- Conducts comprehensive and complex traffic surveys and studies to collect data to be used in major redesign of traffic systems, such as traffic volume, capacity, origin and destination, vehicular speed, accident reports, and pedestrian counts; prepares graphs, tables, or maps related to traffic and pedestrian safety, highway and intersection capacity, highway design and geometrics, and neighborhood traffic control; develops recommendations and prepares work orders for traffic control measures such as traffic signals, traffic signs, pavement markings, and changes in geometric design.
- Calculates signal phasing and timing, time-space diagrams, and other work related to traffic signal installation.
- Reviews and provides recommendations concerning plans for proposed driveway openings, entrance markers, and other proposed features which may impede the safe flow of traffic.
- Checks designs, drawings, specifications, and estimates submitted by consultants and contractors for compliance with established codes, standards, methods, and procedures.
- Performs related duties as required.

#### **Environmental Engineering:**

- Conducts surveys and investigations of complex environmental systems and operations such as pollution control facilities or equipment, stormwater management systems, and solid waste management systems to ensure compliance with established codes, standards, and design and maintenance criteria.
- Reviews stormwater management easements and maintenance covenants for all stormwater facilities for technical and legal accuracy and records them in the land records.
- Performs related duties as required.

#### **Fire Protection Engineering:**

- Reviews plans for a variety of fire protection systems, some of which involve new or complex concepts or operating characteristics, such as calculated and non-calculated sprinkler systems and alarm systems for major renovations, complex additions, and minor new construction of commercial buildings such as hospitals, restaurants, retail stores or shops, etc., to determine compliance with established codes, standards, and design criteria.
- Maintains records of each assigned project, the code requirements cited for same, and status logs of all construction projects submitted for review.
- Meets with architects, engineers, and construction personnel to provide information on new as well as established Fire Code requirements.
- May participate in acceptance testing of various standard and complex suppression systems by witnessing tests and determining adequacy of test conditions and results; records and retains results of tests.
- Provides field consultation to lower level personnel to resolve Fire Code design and/or construction deficiencies.

- Reviews and approves plans for installation of underground fuel storage facilities; witnesses and verifies conditions and results of testing of underground fuel storage facilities; and initiates and maintains records concerning tests.
- Performs related duties as required.

**KNOWLEDGE, SKILLS AND ABILITIES:**

- Knowledge of complex mathematics, including algebra and geometry, as well as methods, equipment, and techniques relating to planning, designing, estimating costs, and monitoring engineering projects where specialized, complicated procedures must be used.
- Knowledge of the County, State, and Federal laws, codes, and regulations pertaining to the applicable technical field.
- Knowledge of procurement regulations, policies and procedures (when position requires).
- Skill in preparing engineering drawings utilizing sketching and drafting techniques, including computer-aided design.
- Ability to read and interpret engineering plans and specifications and to convey their meaning to others.
- Ability to access and manipulate data using computers and engineering software.
- Ability to independently plan and coordinate work.
- Ability to work with coworkers, contractors, engineers, and County employees to obtain, clarify, and provide information, and to provide advice or guidance.

**MINIMUM QUALIFICATIONS:**

**Experience:** Thorough (five (5) years) experience in an applicable technical field that has required the application of principles of physical science and mathematics to the solution of civil, traffic, fire protection or environmental engineering problems.

**Education:** Completion of high school or High School Certificate of completion recognized in the State of Maryland.

**Equivalency:** An equivalent combination of education and experience may be substituted.

**LICENSE:**

- Possession and maintenance at all times of a valid Class "C" (or equivalent) driver's license from the applicant's state of residence when required for job-related duties.

**PROBATIONARY PERIOD:**

Individuals appointed to a position in this class will be required to serve a probationary period of six (6) months, during which time performance will be carefully evaluated. Continuation in this class will be contingent upon successful completion of the probationary period.

**MEDICAL EXAM PROTOCOL:** Medical History Review.

**Class Established:** December 1973

**Revised:** July 1980

August 1987

July 1990

**Classification Study:** August 1992 (M)

May 1997

April 2010

August 2013

**Formerly Titled:** “Engineer Technician III”