

TRANSPORTATION ENGINEERING TECHNICIAN IV

Code 8449

Grade Band 13-14

I. CLASSIFICATION DEFINITION:

This is the senior technical or supervisory level of work performing a variety of engineering support tasks. Specific duties depend on job assignments and may include serving as Project Engineer for medium sized construction and maintenance projects; coordinating complex maintenance activities; performing advanced design work involving complex calculations and computations and geometric design elements; performing advanced tests on soils and materials; supervising a crew engaged in basic technical engineering activities; serving as instrument person on a survey crew; developing complex maintenance contract specifications; designing and coordinating major traffic control devices and management projects; and serving as a field crew chief for planning projects or maintaining advanced data systems in support of planning programs. Employees in some positions in this classification do not supervise, but may serve as lead workers. The employee is expected to give guidance and assistance to less experienced employees and may supervise a project, crew or unit.

Work is performed under the general supervision of an engineer, surveyor, or higher level technical employee. Work conditions vary depending on assignments and are performed in the office or in the field during survey and inspection assignments with exposure to varying weather conditions and rough terrain and requirements for walking, standing, bending, and lifting loads weighing up to 80 pounds; may require working in close proximity with traffic on Maryland highways; requires hand/eye coordination in the efficient operation of computers and other office machines, survey equipment and the like. Employees in this classification may be required to work various shifts and on weekends depending on assignment. Employees in some positions in this classification may be required to travel and be available for work in any part of the State, subject to change of assignment, as work requires.

Positions in the Transportation Engineering Technician IV classification are distinguished from the Transportation Engineering Technician III classification by the performance of senior technical or supervisory work requiring greater technical knowledge and skills.

II. MINIMUM QUALIFICATIONS:

Education: Graduation from a standard high school or possession of a high school equivalency certificate.

Experience: Five years of experience in technical engineering related work in the areas of design, traffic, construction, materials testing, engineering surveys, maintenance, or planning.

Notes:

1. Applicants may substitute education in a civil engineering curriculum at an accredited college or university at the rate of 30 semester credit hours for each year of the required experience, up to a maximum of three years.
2. Applicants who possess an Associates Degree in either Engineering, Construction Management or Surveying or Surveying Technology from an accredited community college, college or university are considered to have met two years of the five year experience requirement.

Licenses, Registrations and Certificates:

1. Employees in this classification may be assigned duties that require the operation of a motor vehicle. Employees in some positions in this classification may be required to possess a motor vehicle operator's license valid in the State of Maryland. A CDL license may be required for some positions.
2. National Institute for Certification in Engineering Technologies (NICET) Certification or other in-house certifications may be required for some positions.
3. Employees in this classification may be required to possess Federal Highway Administration (FHWA) certification for inspection of In-Service Bridges, or have the ability to acquire this certificate within a given time period.
4. Employees in this classification may be required to possess an American Society for Non-Destructive Testing Level II Certification.
5. Employees in this classification may be required to achieve certification in field testing procedures in concrete, soil aggregate and Hot Mix Asphalt within a given time period.

III. EXAMPLES OF WORK: (Examples are illustrative only)

Operates electronic and mechanical equipment required in surveying, drafting and design, field inspection, and materials testing;

Reviews and comments on design submittals from consulting engineers to ensure compliance with standards; meets with consultants to resolve problems;

Provides information to and works with architects, engineers, contractors, developers, and the like to ensure adherence to proper standards and codes;

Oversees or performs plan preparation and review during construction and maintenance of roadways, structures and traffic control devices for conformance to plans and specifications;

Schedules and directs the work of construction inspectors assigned to construction and maintenance projects;

Compiles, documents, and reviews construction reports including cost and other data; reviews special provisions, design agreements, and continuity of plans as necessary; assists in determining if contract plans adhere to current standards and practices;

Drafts plans, plats and drawings for various engineering improvements and installations using CADD and manual processes;

Prepares construction drawings based on engineer's notes, survey notes, field and record research, and engineering calculations;

Updates maps, plats, and other engineering records based on "as built," survey notes and other information;

Computes project quantities, curve data, elevations and profiles;

Performs traverse adjustments and coordinate geometry computations to produce final adjustment traverse coordinates;

Monitors contractors, producers, and fabricators and assures quality control of materials used in the construction of roadways, bridges and facilities; assures materials used meet state specifications;

Oversees material testing programs in permanent and portable labs and at material supplier facilities;

Performs as instrument person on survey assignments and acts as Party Chief in his/her absence;

Maintains records pertaining to public works installations and projects; prepares reports related to the work;

Oversees the advertisement of major maintenance contracts;

Oversees roadway evaluations/studies;

Compiles, documents, and reviews maintenance reports/studies including costs and other data, determining if maintenance contracts adhere to current maintenance practices and standards;

Assists in the clearance of utilities and other underground obstructions prior to subsurface explorations;

Assists in locating subsurface features through the use of preliminary engineering design documents and/or the use of electronic geographical positioning equipment;

Performs hydrographic surveys of shipping channels and berths;

Establishes horizontal and vertical controls for hydrographic surveys;

Determines tide adjustments and edits hydrographic surveys;

Compiles comprehensive analytical reports for various Project Planning/miscellaneous studies;

Attends project planning meetings and Public Hearings/Workshops;

Performs before and after accident studies;

Provides comprehensive reports pertaining to accident corridor studies;

Prepares charts and graphs for projects using various computer programs;

Performs other related duties.

IV. REQUIRED KNOWLEDGE, SKILLS AND ABILITIES:

Knowledge of basic engineering principles, practices, and methods;

Knowledge of CADD drafting using Microstation or other engineering software;

Knowledge of surveying, including use of instruments and equipment;

Knowledge of design and right of way plat criteria, construction standards and inspection methods and techniques;

Knowledge of InRoads, Geopak or other related engineering software in the use of design activities;

Knowledge of geodetic control processing software and CADD software;

Knowledge of Temporary Traffic Control Standards, National Electrical and Safety Codes, and Manual on Uniform Traffic Control Devices;

Knowledge of Federal Highway Regulations and Criteria for Coding In-Service Bridge conditions;

Knowledge of statistical principles;
Knowledge of algebra, geometry, and the principles of basic mathematics used in engineering design, drawing and drafting;
Knowledge of the inspection techniques for welding and fabrication of structural products including non-destructive testing methods and the American Welding Society Welding Code;
Knowledge of AASHTO and ASTM test specifications and methods;
Knowledge of human factors as they relate to transportation issues;
Knowledge of effective supervisory methods and practices;
Skill in reading and interpreting complex engineering drawings and computations;
Skill in the operation of electronic and mechanical equipment used in performing technical engineering support tasks;
Skill in reading and creating blueprints and engineering drawings, right of way plats and plans, using CADD or manual processes;
Skill in interpreting, analyzing or preparing maps, deeds, plats, and plans;
Ability to instruct and train lower-level technicians in coordinate geometry calculations and CADD processing;
Ability to maintain a variety of technical records and adapt records systems for computerization;
Ability to update computer design files, maps and other records;
Ability to establish and maintain effective working relationships with other employees and the general public;
Ability to communicate effectively;
Ability to physically perform essential duties.

V. SPECIAL REQUIREMENTS:

Employees in this classification may be considered “Essential Employees” and may be required to sign and agree to all policies and procedures relating to “Essential Employee” status.

Date Revised: December 16, 2003

APPROVED: _____
Director, Office of Human Resources