TRANSPORTATION ENGINEERING TECHNICIAN V
Code 8450 Grade 0015

I. CLASSIFICATION DEFINITION:

This is the advanced technical or senior project management level of work performing a variety of complex engineering support tasks. Some positions in this classification are responsible for supervising staff. Specific duties depend on job assignments and may include serving as Project Engineer for large sized construction and maintenance projects; overseeing complex maintenance activities; serving as Assistant Project Engineer on major bridge and highway design projects; overseeing the development and performance of advanced soils and materials testing programs; serving as party chief on a survey crew, or exploration crew; overseeing the development and advertisement of maintenance contracts, overseeing budget allocations statewide; or designing and coordinating major design and planning and traffic management projects. The employee is expected to give guidance and assistance to less experienced employees and may supervise a project team, crew or unit. Supervision is not a requirement when highly specialized expertise can be documented.

Work is performed under the general direction of an engineer, or other professional 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 assignments. 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.

Specific position allocation to this level is determined by application of the Position Appraisal Method of Job Evaluation.

II. MINIMUM QUALIFICATIONS:

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

Experience: Eight 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 eight 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, in-house certifications or state-sponsored, material-testing certification 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 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)

Oversees or performs plan review, field inspections, and field investigations during design, construction and maintenance of roadways, structures and traffic control devices for conformance to plans and specifications;
Operates electronic and mechanical equipment required in surveying, drafting and design, field inspection, and materials testing;
Researches a variety of electronic and mechanical equipment in carrying out surveying, drafting and design and materials sampling and testing;
Provides information to and works with architects, engineers, contractors and developers to ensure adherence to standards and codes;
Conducts or participates in project milestone review meetings on transportation related projects;

Prepares correspondence to respond to or inform the public, elected officials, federal, state or local government agencies of project information;

Schedules and directs the work of construction inspectors assigned to construction and maintenance projects;
Monitors contract performance and project status for major construction and maintenance projects;
Develops and oversees material testing programs in permanent and portable labs and at material supplier facilities;
Monitors contractors, producers, and fabricators and assures quality control of materials used in the construction of roadways, bridges and facilities, and assures materials used meet state specifications;
Directs the preparation of plans, plats and drawings for various engineering improvements and installations, prepares construction drawings based on engineer's notes, survey notes, field and records research, and engineering calculations, updates maps, plats, and other engineering records based on "as builts," survey notes and other information, and conducts engineering surveys as needed;
Compiles quantities and reviews construction reports and other data;
Creates complex horizontal and vertical alignments using Computer Aided Design and Drafting (CADD) and coordinate geometry software;
Provides technical guidance and support to office and field personnel concerning design, survey, software, hardware and procedures;
Oversees the development of CADD plans, plats and other project documents;
Prepares and reviews special provisions, design agreements, and continuity of plans as necessary, and assists in determining if contract plans are complete;
Performs complex design and survey calculations to translate raw data into information for the design and construction of public works and other transportation-related projects;
Maintains records and prepares reports pertaining to public works installations and projects;
Compiles, documents, and reviews maintenance reports/studies including costs and other data, determining if maintenance contracts adhere to current maintenance practices and standards;
Oversees and is responsible for the clearance of utilities and other underground obstructions prior to subsurface exploration;
Oversees and is responsible for locating subsurface features through the use of preliminary engineering design documents and/or the use of electronic geographical positioning equipment;
Reviews, evaluates and approves Quality Control plans submitted by material producers and fabricators;
Performs hydrographic surveys of shipping channels and berths;
Establishes horizontal and vertical controls for hydrographic surveys;
Determines tide adjustments and edits hydrographic surveys;
Provides data, analysis, recommendations and corrective measures for Environmental Impact Studies;
Reviews work of other employees;
Performs multi-fatal accident analysis;
Performs other related duties.

IV. REQUIRED KNOWLEDGE, SKILLS AND ABILITIES:

Knowledge of basic engineering principles, practices, and methods;
Knowledge of CADD using Microstation, manual drafting and surveying;
Knowledge of design criteria, construction standards and inspection methods and techniques;
Knowledge of statistical principles;
Knowledge of algebra, geometry and the principles of basic mathematics used in engineering design, drawing and drafting;
Knowledge of AASHTO and other policies and procedures used in the design and construction of transportation projects;
Knowledge of Temporary Traffic Control Standards, National Electrical and Safety Codes, and Manual on Uniform Traffic Control Devices;
Knowledge of the principles and standards of highway, bridge and interchange design including geometrics, hydraulics, capacity, economics and traffic assignments;
Knowledge of materials and construction methods as they apply to the design of transportation projects;
Knowledge of Federal Highway Regulations and Criteria for Coding In-Service Bridge conditions;
Knowledge of Federal Aid regulations;
Knowledge of AASHTO and ASTM test specifications and methods;
Knowledge of effective supervisory methods and practices;
Skill in interpreting, analyzing, or preparing maps, deeds, plats, and plans;
Skill in operating computers using Microstation and other related engineering software;
Skill in the maintenance and operation of electronic and mechanical equipment used in performing complex 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 reading and interpreting complex engineering drawings and computations;
Ability to streamline and optimize complex design, surveying and mapping processes;
Ability to place complex traffic control devices and systems in operation;
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 prepare correspondence for transportation projects informing the public, elected officials and others about project specific data;
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