

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

**Code No. 004122
Grade 20**

TRANSPORTATION SYSTEMS TECHNICIAN III*

DEFINITION OF CLASS:

This is advanced level skilled technical work involving the construction, modification, installation, testing, maintenance, and field and bench repair of the full range of traffic control, traffic monitoring and traveler information equipment, devices and sub-systems supporting the County's Advanced Transportation Management System to include supporting equipment and devices of Fibernet. Employees in this class have contacts with engineers, engineer technicians, contractors and equipment manufacturers for the purpose of coordinating equipment maintenance, repair, modification, and/or installation projects. This class of work may entail some public service/assistance, but it is incidental to the primary focus of the work performed.

Employees in this class are responsible for advanced installation, repair, modification, and troubleshooting projects covering a wide variety of traffic control, monitoring and traveler information equipment and devices (i.e., traffic signal devices, traffic video surveillance cameras, fiber optic cable plant and related components including base and broad band video equipment, traveler advisory radio system, variable message signs, lane control and channelization devices, and related telephone and data communication equipment). This class of work is distinguished from the journey level Transportation Systems Technician II class of work by the nature and extent of technical support provided, i.e., Transportation Systems Technician III supports *all* ATMS equipment, devices and sub-systems. Assignments include complex development and implementation projects involving new technology and equipment; unusual technical problems are encountered requiring modification of equipment, devices and/or methods to meet specialized County requirements. Work is assigned to employees on a daily/weekly basis, including rotating stand-by assignments, and employees are expected to proceed on their own. Finished work is spot-checked to ensure it has been completed according to unit standard operating procedures and normal trade practices. In addition, employees use technical manuals, equipment manufacturers' instructions, and national and state codes, standards and requirements to complete assigned tasks. The work requires *advanced* technical skill and resourcefulness to determine appropriate modification of standard procedures and methods to accommodate a variety of specialized and technologically advanced County transportation system equipment requirements. The complexity of the work of this class is characterized by assignments that require the installation and maintenance of a variety of sophisticated traffic control, monitoring and related communication equipment and devices to include troubleshooting equipment and system failures. The work facilitates the effective and reliable operation of the County's ATMS and fiber optic communication system. Installation, maintenance and repair of traffic control, monitoring, information and other communication equipment occurs, in large part, outdoors. Strict observance of safety precautions and procedures is required since much of the work involves working with and around electrical voltage and high powered equipment and/or working from extended heights. Employees in this class must possess good strength and agility in order to recurringly lift objects weighing up to fifty (50) pounds and to be able to occasionally maneuver objects up to one hundred (100) pounds.

EXAMPLES OF DUTIES: (Illustrative Only)

- Performs advanced installation, maintenance and repair work which encompasses all traffic control, traffic monitoring, and traveler information equipment, sub-systems and devices supporting the County's ATMS to include computer-based electromechanical and microprocessor-based traffic control equipment; fiber optic cabling; data communication equipment and interfaces for point-to-point and multidrop applications; video equipment, both baseband and broadband; microwave installations, both permanent and mobile; amplitude modulation transmitters, both permanent and mobile; and, balanced and unbalanced audio equipment.
- Troubleshoots equipment failures; analyses hardware and software to determine cause of problem; tests, adjusts and repairs equipment when difficult or unusual technical problems are encountered.
- Participates in the development, implementation and maintenance of the countywide fiber optic plant including the operation of communications hub site facilities and fiber distribution panels, the maintenance and repair of ATMS related components at the hub site and multiplexing audio, video, digital and data communications equipment supporting ATMS in such a way that it will create a communication link between hub sites.
- Performs modification, installation, testing, overhaul, preventive maintenance and field and bench repair of a variety of complex computer-based solid state, digital, electronic, electromechanical and microprocessor-based traffic control equipment involving computer logic, solid state modular circuitry and related telephone data communication.
- Installs, maintains and repairs the County's Traffic Advisory Radio System for AM broadcast.
- Provides electrical and electronic technical expertise to resolve systems and equipment problems.
- Determines cause of traffic control equipment failures and repair as required.
- Tests and installs traffic controllers, signals, cabinets and related equipment for coordinated traffic signal system.
- May be required to install, maintain and/or repair overhead messenger wire, overhead electrical cable, underground communication cable, overhead lane control, overhead signs, traffic signal heads, school flasher assemblies, vehicle detectors, traffic signal poles, pedestrian signals, push buttons, electrical services, and other related control apparatus.
- May be required to drive and operate a "bucket" truck and/or van as assigned.
- Performs related duties as required.

KNOWLEDGE, SKILLS AND ABILITIES:

- Thorough knowledge of the National Electrical Code (NEC) and the electrical aspects of traffic signal control devices, high speed data and digital devices and video cameras.
- Thorough knowledge of electronic, electromechanical and microprocessor principles as they apply to traffic signal control equipment.
- Thorough knowledge of fiber optic principles including loss budget analysis and wave division multiplexing techniques.
- Thorough knowledge of data communication principles including interfacing, protocols, high speed applications and networking.
- Thorough knowledge of the functions and theory of telemetry equipment as applied to the interconnection of traffic control systems.
- Thorough knowledge of audio, video and microwave transmission and principles.

- Ability to plan, modify and implement various combinations of equipment, systems and communication pathways in order to meet the equipment support and data transmission needs of a technologically advanced transportation management system.
- Ability to test and install equipment, devices and subsystems supporting new technological advances within an advanced transportation management system.
- Ability to independently solve technical problems related to an advanced transportation management system.
- Must be free from color blindness.
- Ability to attend meetings and/or perform assignments at locations outside the office.

MINIMUM QUALIFICATIONS:

Installation, Maintenance, and Repair

Experience: Considerable (three (3) years) journey level experience in the installation, maintenance and repair of electronic/communications equipment and systems including: electromechanical and electronic traffic control equipment, fiber optic cable, data communication equipment, video and audio equipment.

Education: Possession of an Associate of Arts Degree from an accredited college or university in Electronics Technology or graduation from a two (2) year electronic/communications technical training school.

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

Physical Abilities: Ability to independently lift, push, and pull heavy pieces of communication equipment and tools occasionally weighing up to one hundred (100) pounds.

License: Possession and maintenance at all times of a valid Class “C” (or equivalent) driver’s license from the applicant’s state of residence.

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: Core II Exam with a Drug/Alcohol Screen.

Class Established: June 1998

Revised: August 2013

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February 2016

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