

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) TECHNICIAN I

JOB DESCRIPTION

Classification Responsibilities: Under general supervision, an Intelligent Transportation Systems (ITS) Technician I performs skilled work in the installation, maintenance, operation, and repair of electrical and electronic traffic signal control devices, various communication devices, and the ITS components. This position performs related duties, as required.

Distinguishing Features: An employee in this class is expected to install, maintain, monitor, troubleshoot, and repair current and future ITS infrastructures and interfaces such as various traffic signal cabinet systems; vehicle detection systems; traffic control devices; dynamic message signs; communication systems; perform preventive maintenance on ITS equipment such as control cabinets, video cameras and subsystems, interconnect, and electrical wiring. Work includes troubleshooting malfunctions and responding to trouble calls. The incumbent performs construction of traffic signals and inspects the work of contractors to verify their work meets City of Mesa and other standards. The incumbent uses a personal computer (PC) for recordkeeping and diagnostic troubleshooting of signal operations. Guidance is received by the ITS Technician II. Supervision is received from the ITS Operations Foreman who reviews work through observation, conferences, reports, and results achieved. The incumbent will be required to work irregular shifts, weekends, evenings, and holidays. Work is subject to call-out during off-duty hours. This class is FLSA nonexempt.

QUALIFICATIONS

Employee Values: All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

Minimum Qualifications Required. Graduation from high school or GED. Any combination of training, education, and experience equivalent to 2 - 3 years' traffic signal maintenance experience, or graduation from an accredited college or university with an Associate's Degree in Applied Science (Electronics Engineering Technology), and at least one year of traffic signal cabinet maintenance experience.

Special Requirements. Must possess a valid Arizona Class B Commercial Driver's License (CDL) or Commercial Learner's Permit (CLP) by hire date. CLP holders must successfully complete the City's Entry Level Driver (ELD) training program, the Third Party Examiner (TPE) administered skills (driving) test, and obtain a valid Arizona Class B CDL within 150 days of hire or promotion date. An International Municipal Signal Association (IMSA) Level I Traffic Signal Technician Certification is required. Must possess an IMSA Level II Traffic Signal Technician Certification (Electronic or Electrical), an IMSA Traffic Signal Inspector Certification, and a Temporary Traffic Control Certification by American Traffic Safety Services Association or the International Municipal Signal Association within one year after date of employment. Must live within a 20 mile radius of the intersection of Main Street and Greenfield Road within one year after date of employment, and must maintain this residency status throughout the duration in the position.

Substance Abuse Testing. This class is subject to Department of Transportation (DOT) Federal Motor Carrier Safety Administration (FMCSA) drug and alcohol testing as outlined in 49 Code of Federal Regulations (CFR) Part 382.

Preferred/Desirable Qualifications. Experience in maintaining microprocessor-based instruments, National Electrical Manufacturers Association (NEMA) and Advanced Traffic Control (ATC) controllers, basic knowledge of PC operations, optical pre-empt devices, and communications equipment, is preferred.

ESSENTIAL FUNCTIONS

Communication: Communicates with the general public, other City employees, vendors, management, and contractors to distribute information and facilitate proper job performance. Prepares written or electronic documents such as trouble call logs, and maintenance documents with clearly organized thoughts, proper sentence structure, punctuation, and grammar to prepare records, history, and related maintenance and repair documentation.

Manual/Physical: Reviews the work products of others to ensure compliance with standard operating procedures, federal regulations, Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), state regulations, Arizona Department of Transportation (ADOT), Road and Bridge Construction and Traffic Signal and Lighting Standards, NEMA, TS1 and TS2 Standards, National Electric Codes (NEC), and City of Mesa Standard Details and Specifications. Inspects, monitors, and evaluates information, work-related conditions, or objects such as traffic signal equipment and construction material to determine compliance with prescribed operating and safety regulations. Ability to distinguish colors to maintain proper continuity of cabinet and field wires, and to differentiate traffic signal lenses. Detects traffic sounds when working near moving traffic and backup warning devices when working around moving equipment. Operates a motor vehicle or piece of equipment (boom/auger or platform truck) requiring a valid Arizona Class B CDL to drive on city streets to maintain and construct traffic signals. Operates a motor vehicle such as a bucket truck and pickup truck requiring a standard Arizona Driver's License to travel off-site to install, remove, or replace ITS devices. Operates power-driven machinery such as a jackhammer or tamper to dig trenches and backfills. Uses hand tools such as: a multimeter, amp meter, graphical multimeter, and data logger to maintain and repair equipment. Enters data into a PC for recordkeeping and diagnostic troubleshooting of signal operations. Prepares intersection as-builts. Performs physical inventories of intersection hardware and traffic signal cabinets. Moves material such as: cabinets, poles, mast arms, and related material from one place to another using a forklift, bucket truck, or a crane. Move objects up to 60 pounds a distance of 60 feet with the assistance of an aid. Uses digging tools such as: a pick, shovel, spade, jackhammer, prybar, trencher, and auger truck to dig trenches and pole/cabinet bases. Cleans work area and equipment including: trucks, shop, and storage yard. Works with cleaning fluids and agents, chemicals, and paints using proper protective equipment. Sets up barricades and traffic cones to provide temporary traffic control near work area. Works in a variety of weather conditions while performing normal job duties and responding to emergency calls. Works in small, cramped areas while performing system maintenance. Works at elevated levels up to 60 feet in a bucket truck while performing duties. Meets scheduling and attendance requirements.

Mental: Prioritizes own work. Resolves procedural, operational, and other work-related problems such as malfunctions in traffic signal equipment b troubleshooting. Programs controllers, emergency vehicle pre-emption systems, malfunction management units, various vehicle detection systems and other ITS equipment. Comprehends and makes inferences from written material including department policies and procedures, safety manuals, and operation manuals to ensure conformance. Understands blueprints, schematic drawings, and layouts to troubleshoot or install equipment as needed. Learns job-related material through attendance at training seminars, participation in electronic courses, and on-the-job training regarding technical traffic signal information, vendors, equipment suppliers, and computer usage.

Knowledge and Abilities:

Knowledge of:

function and operation of major ITS component and basic circuits in the traffic signal control cabinet; hazards and necessary safety precautions intricate in working with electricity and in conjunction with traffic;

MUTCD, NEMA and NEC standards for signal equipment;

possible defects and faults in electrical wiring with ITS and signal control equipment, and provide effective corrective measures;

working procedures and practices used in the Blue Stake Utility Locating Program; and

operation and maintenance of pre-emption devices, Dynamic Message Signs (DMS), vehicle detection systems and other ITS related devices.

Ability to:

diagnose and repair defects in electrical systems and sophisticated electronic ITS, traffic signal control, and communications equipment;

read and work from electrical and electronic schematics;

perform moderate to heavy manual labor (example: traffic signal installation or modification) outdoors in temperature extremes (over 100°F) for extended periods of time;

effectively use various testing instruments such as an amp meter, volt-ohm meter and megohmmeter;

effectively and safely operate various types of construction and maintenance equipment such as bucket truck, platform truck, auger/winch trucks, and pole trailers;

diagnose and correct problems while working under extreme weather conditions and traffic conditions;

maintain a high volume of work output with minimal supervision; and

establish and maintain effective working relationships with management and coworkers.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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