

THE CITY OF LOS ANGELES



CIVIL SERVICE COMMISSION

## CLASS SPECIFICATION

10/27/2011

ASSISTANT SIGNAL SYSTEMS ELECTRICIAN, 3818

**Summary of Duties:** An Assistant Signal Systems Electrician assists a Signal Systems Electrician and may personally perform skilled technical work. Incumbents in this class install, repair, maintain, and modify electric and microprocessor based traffic signal control devices and video and computer communication systems; and do related work

**Distinguishing Features:** Employees in this class modify, install, troubleshoot, repair, and maintain:

- Traffic signal equipment in intersections.
- Electronic and digital traffic controllers.
- Microcomputers.
- Other microprocessor based traffic signal control devices.
- Fiber optic, video, and laser pulsed traffic signal communication devices.

An Assistant Signal Systems Electrician may work in the traffic signal shop or out in the field. The work may involve exposure to hazards from heavy traffic and relatively low voltage electricity.

Assistant Signal Systems Electrician is an entry level class. An Assistant Signal Systems Electrician receives on-the-job training from and works under the direction of a Signal Systems Electrician. Incumbents in this class must successfully complete at least 18 semester units or 24 quarter units in fundamentals of electronics, electronic circuits, introduction to microprocessors, and electronics technology courses at a recognized college or trade school to qualify for promotion to the Signal Systems Electrician class. As training and education progresses, an Assistant Signal Systems Electrician performs some of the duties of a journey-level electrician.

Employees in this class receive assignments from a Signal Systems Supervisor in the form of verbal instructions, work orders, plans, timing charts, wiring schematics, intersection layouts, and route maintenance schedules.

The classes of Assistant Signal Systems Electrician and Electrical Craft Helper are different because:

- An Assistant Signal Systems Electrician position requires additional knowledge which can be acquired through additional electronics or electrical courses. An Assistant Signal Systems Electrician is trained in specialized electronic and electrical work on traffic signal control systems.
- An Electrical Craft Helper is an entry-level helper who assists journey-level electricians in a variety of electrical work.

**Example of Duties: An Assistant Signal Systems Electrician:**

- Works with and assists a Signal Systems Electrician by:
  - Entering numeric values into a signal controller keyboard.
  - Comparing the controller display to the engineering plan set.
  - Maintaining digital coordination components such as modems, multiplexers, fiber optic transceivers, and telephone interfaces.
  - Maintaining analog coordination components such as encoders, decoders, area master controllers, event timers, and programmable coordinators.
  - Using AC/DC digital and fiber optic multimeters, frequency meters, oscilloscopes, digital data scopes, variable AC transformers, logic analyzers, and computer diagnostic routines to maintain and troubleshoot microprocessor based equipment.
  - Using soldering guns, pliers, wire cutters and strippers, and other hand tools to install or replace electronic components.
  - Using a Universal EPROM (Erasable/Programmable Read Only Memory) programmer to create, copy, or erase computer codes on an EPROM microprocessor chip.
  - Installing temporary traffic signals or stop signs and placing safety cones.
  - Checking signal coordination and timing to engineering plans.
- May answer emergency traffic signal and ATSAC component trouble calls.
- May be assigned to other duties for training purposes or to meet technological changes or emergencies.

**Qualifications:** Incumbents must have the following knowledges and abilities:

**Knowledges of:**

- Safety principles and practices for working in heavily traveled streets and with electrical equipment.
- First aid, including CPR and treatment of electrical shock and burns.
- Basic electricity, digital and analog electronic concepts, and microprocessor applications applicable to digital control and test equipment.
- Basic electricity and electronics applicable to installing and repairing complicated electrical systems.
- Devices, methods, and products for splicing and waterproofing electrical conductors.
- Various types of traffic signal equipment such as intersection controllers, cabinet assemblies, and systems equipment.
- Methods, materials, tools, and equipment used to install, test, maintain, repair, and modify electric and electronic traffic signal, control, and related equipment.
- Standard traffic signal and control terminology.
- The National Electric Code regarding wire sizes, color codes, types of connectors and conductors, and insulation used in traffic signal repair and installation work.
- The uses and functions of electronic test equipment, such as logic analyzers, frequency counters, function generators, capacitance and inductance bridges, and analog, digital, and storage oscilloscopes.
- Location of the principal City streets controlled by traffic signals.

**Ability to:**

- Use various hand, pneumatic, and power tools to install, repair, and modify traffic signal systems and controllers.
- Operate a Universal EPROM (Erasable/Programmable Read Only Memory) programmer and ultraviolet EPROM eraser.
- Work with microscopic materials, such as fiber optics and micro-circuits, sometimes under adverse environmental conditions.
- Lay out work to cause the least interference with traffic.
- Interpret the readings from a variety of electrical test equipment, such as multimeters, megohmmeters, and frequency meters, in order to detect faulty equipment.
- Communicate with a variety of individuals including crew members, other Department and City employees, and the public.
- Deal tactfully and effectively with employees and the public.
- Work under the pressure of varying and adverse traffic and weather conditions, time constraints, and conflicting job demands.
- Use a computer to enter or retrieve data, write computer programs, and run diagnostic tests.
- Use hand, pneumatic and power tools, and electronic test equipment in order to install, repair, test, and modify traffic signal equipment.
- Work with microscopic materials in order to install, repair, test, and modify traffic signal equipment.
- Communicate effectively with co-workers, subordinates, supervisors, and others to ensure timely completion of assignments.
- Administer first aid, including CPR and treatment of electrical shock and burns.
- Perform signal construction and reconstruction work, including excavating foundations, pull boxes, and loop detectors; installing various traffic signal components; pulling wire cables; working from ladders and aerial lifts; and splicing and weather proofing wires.
- Efficiently review and interpret plans, specifications, wiring schematics, timing sheets, and other documents used in traffic signal work.

**Minimum Requirements:**

Two years of full time paid experience as a helper in Electrical or Electronic work and successful completion of at least 9 semester units or 12 quarter units of training in electronic theory at a recognized college or trade school.

Successful completion of 18 semester units or 24 quarter units of training in electronics field of concentration at a recognized college or trade school may substitute for one year of the experience requirement and the educational requirement.

**License:** Employees must travel to intersections and other worksites throughout the City of Los Angeles in order to install, repair, maintain, test, and modify traffic signal equipment. Employees who personally drive vehicles or alternate drivers of vehicles used in the performance of these duties shall possess a valid California driver's license prior to appointment. A Class B driver's license may be required for some positions.

**Safety Sensitive:** Because this class has been designated as Safety Sensitive in accordance with City policy, a drug and alcohol screening test may be required prior to appointment.

**Fair Labor Standards Act Status:** None of the positions in this class qualify for an exemption from the minimum wage and overtime requirements of the Fair Labor Standards Act.

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to reasonably accommodate the limitations.

**As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties and responsibilities, and required qualifications of any position shall be.**