

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE CT Electrician I	OFFICE/BRANCH/SECTION District 12 / Maintenance / Field Maintenance	
WORKING TITLE Caltrans Electrician I	POSITION NUMBER 912-651-6938-918	REVISION DATE 04/17/2026

As a valued member of the Caltrans team, you make it possible to improve lives and communities through transportation.

GENERAL STATEMENT:

Under the supervision of a Caltrans Electrical Supervisor or direction of a Caltrans Electrician II, the Caltrans Electrician I performs preventative maintenance (PM), troubleshoots and repairs (T&R), installs, reinstalls, rebuilds, and performs field inspections on all Caltrans Highway Electrical Inventory. Other responsibilities include serving as a liaison between Caltrans Division of Maintenance and Caltrans Division of Construction, Caltrans Division of Traffic Operations/ Permits, local agencies, and utility companies. Will be required to work overtime, work irregular shifts/alternate work schedules including nights, holidays and weekends; may be required to work temporary and/or intermittent varied work shifts and required to respond to emergency situations and calls. May be loaned to other cost centers. This position is represented under collective bargaining.

This classification operates highway maintenance equipment and vehicles and requires a valid Class C driver's license. A Class A or B driver's license with Tank endorsement and a current medical certificate is desirable, but not required. Duties include, but are not limited to:

CORE COMPETENCIES:

As a CT Electrician I, the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Flexibility and Managing Uncertainty** : Adjusts thinking and behavior in order to adapt to changes in the job and work environment. (Employee Excellence - Integrity)
- **Dealing with Ambiguity (Risk)**: Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety - Innovation, Integrity, Pride)
- **Ethics and Integrity**: Demonstrated concern to be perceived as responsible, reliable, and trustworthy. Respects the confidentiality of information or concern shared by others. Honest and forthright. Conforms to accepted standards of conduct. (Employee Excellence - Integrity, Stewardship)
- **Problem-solving and Decision-making** : Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Employee Excellence - Equity)
- **Teamwork/Partnership**: Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Employee Excellence - Collaboration)
- **Organizational Awareness**: Contributes to the organization by understanding and aligning actions with the organization's strategic plan, including the mission, vision, goals, core functions, and values. (Employee Excellence - Equity, Integrity)
- **Interpersonal Effectiveness** : Effectively and appropriately interacts and communicates with others to build positive, constructive, professional relationships. Tailors communication style based on the audience. Provides and is receptive to feedback. (Employee Excellence - Collaboration)
- **Analytical Skills**: Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Equity - Pride)
- **Technical Expertise**: Depth of knowledge and skill in a technical area. (Equity - Integrity)

TYPICAL DUTIES:

Percentage
Essential (E)/Marginal (M)¹ Job Description

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40%	E	Performs preventative maintenance, troubleshoots and repairs, installs, reinstalls, rebuilds, and conducts field inspections on pump plants, traffic signals and traffic signal master systems, lighting circuits, highway and tunnel lighting, highway sign lighting, navigation lighting, changeable message signs, ramp meters, vehicle detection systems, closed circuit television systems, battery backup systems, highway advisory radio systems, electrical services, carbon monoxide analyzers and detectors, ventilation equipment, motors, and generators. Routinely patrols assigned areas with the responsibility listed above.
25%	E	Performs preventative maintenance, troubleshoots and repairs, installs, reinstalls, rebuilds, and conducts field inspections on communication and telemetry equipment at hubs, nodes, Transportation Management System (TMS) elements, and the Traffic Management Center (TMC) which includes, but is not limited to: modems, bridges, digital cross connects, multiplexers and de-multiplexers, fiber transceivers, protocol converters, routers, switches, encoders, and decoders.
20%	E	Operates light trucks, trucks with personnel hoist, vans, and automotive vehicles. Follows prescribed methods of equipment operation per Code of Safe Practice, Mechanized Equipment Training Academy (META), Cal/OSHA, owner's manual, and their supervisor. Utilizes pre-operation and post-operation checklists for inspecting vehicles and reporting any problems to their supervisor. Services and make minor repairs on equipment as instructed by META. May operate vehicles with automatic and/or manual transmissions.
10%	E	Trains and instructs others in the Caltrans Electrician I or Caltrans Electrical Technician classification that are not familiar with certain procedures. Works with other departments and at times the public to coordinate, notify, and/or clarify information. Makes estimates of labor, materials, and equipment for repair costs. Completes daily paper work.
5%	M	Performs tasks such as painting, cleaning, pouring and finishing concrete bases; performs traffic control duties per Maintenance Manual Chapter 8. Performs preventative maintenance, troubleshoots and repairs, installs, reinstalls, rebuilds, and conducts field inspections on sprinkler controllers at Maintenance Stations and their associated electrical devices as needed.

¹ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.

MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

None. However, may occasionally give functional guidance to those in the Caltrans Electrician I or Caltrans Electrical Technician classification.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**Knowledge of:**

Alternating current and direct current (AC/DC) theory, analog and digital theory, fiber optics theory, National Electric Code (NEC); basic terminology, principles, methods, tools and equipment used in the installation, maintenance, and repair of electrical and electronic equipment as well as communication equipment (copper and fiber).

Knowledge and ability to test equipment including, but not limited to: volt meters, amp meters, ohm meters, Digital Volt Ohm Meter (DVOM), meggers, oscilloscopes, transmission impairment measuring set, signal generators, time domain reflectometer, optical time domain reflectometer, optical power meters, bit error rate testers.

Knowledge of safety precautions while working with electricity and fiber; the Electrical Orders of the Division of Industrial Safety and Cal/OSHA safety and health regulations; Caltrans Safety Manual, Caltrans Code of Safe Practices, and Chapter 8.

Knowledge of statewide Maintenance functions and mission, goals, organization, and procedures of the Department of Transportation.

Abilities and Analytical:

- Ability to communicate at a level required for successful job performance.
- Ability to follow directions, work independently without close supervision, as well as work cooperatively with others.
- Ability to establish and maintain effective cooperative working relations with other groups in the workplace.
- Must be able to effectively analyze various work situations and make sound decisions.
- Ability to instruct unskilled and semi-skilled assistants and establish and maintain a safe work environment.
- Ability to install, construct, test, maintain and repair of a wide variety of electrical and electronic devices.
- Proficiency in various computer software applications and programs including Microsoft Office Suite.
- Ability to assist in the T&R of Telemetry communication system.
- Ability to read electrical schematics, interpret, make rough sketches and diagrams to assist with labor and material needs.

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- Ability to gather statistical data for analysis.
 - Ability to complete tasks.
 - Possession of class A or B driver's license (with Tank endorsement and medical certificate) to operate class A and B equipment is desirable.
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RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Poor judgment could result in danger, possible injury or loss of life for traveling public or Caltrans employee, ineffective production methods, and substandard quality of work. Negligence could result in tort liability to the State as well as civil and/or criminal liability to the employee.

PUBLIC AND INTERNAL CONTACTS

The incumbent may be asked to work with other Maintenance, Permits, Traffic Operations and Construction Branches and all levels of Caltrans Management. May also be required to work with California Highway Patrol representatives, members of the public and outside resource agencies.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical: The incumbent will be required to do heavy manual labor including moving/placing heavy objects by lifting, pulling, pushing and carrying as well as grasping, squatting, stooping, kneeling, bending, twisting, reaching, climbing, walking on uneven/unstable ground.

May be required to work in confined spaces and stand/sit for prolonged periods of time. May be required to work 55 feet above the pavement, water, or in the midst of traffic using ladders or lift trucks. May be required to sit in/on and drive or operate maintenance vehicles. Will be required to wear earplugs and respirators as needed, and appropriate safety gear at all times. The incumbent must be able to hear and see with or without corrective assistance at a satisfactory level to ensure the safety of the employee and others. Must have visual and color acuity adequate to perform the essential functions of the job. This position is a drug sensitive class. The incumbent will be required to pass a pre-employment drug test and will be subject to reasonable suspicion testing during appointment. If incumbent possesses a commercial driver's license, employee will be required to take random drug tests throughout appointment.

Mental and Emotional: Must be able to keep up with current technological changes in the fields of electricity and electronics. Must have the ability to respond appropriately to difficult situations, recognize emotionally charged issues or problems, and cope with and respond to emergency situations such as traffic, weather conditions, and other natural disasters. Will be required to deal tactfully and courteously with the public and crew under stressful and possibly adverse conditions. Must be able to focus on precise work beyond the distractions of traffic, be emotionally stable, alert and aware at all times, reason logically, draw valid conclusions, make appropriate recommendations and adopt an effective course of action. May need to determine amounts of materials and length of time to accomplish a job. Incumbent is responsible for working cooperatively with team members and supervisors to identify innovations that will increase productivity, reduce cost, and maintain or improve quality. Must adhere to the customer service standards set by their unit and provide high quality service to both internal and external customers.

WORK ENVIRONMENT

The employee will be based in a District 12 field office in a climate-controlled environment under artificial lights, but most duties and time will be spent outdoors engaged in the duties mentioned above. Weather conditions vary from a cold, windy and wet winter climate to a very hot and dry summer climate. May be exposed to dirt, dust, fumes, hot materials, chemicals, loud noises, inclement weather, steep, uneven/or unstable terrain, fast moving traffic, and/or extreme temperatures. May be required to sit, stand, squat, kneel, or all of the above for long periods of time. May be exposed/ put in stressful situations. Will be required to wear long pants and appropriate footwear in good condition and must wear provided personal protective safety equipment including, but not limited to: shirts and/or vests, hard hats, safety glasses, gloves, face shields, respirators, ear plugs, as well as other safety devices deemed necessary. The incumbent will be required to travel extensively throughout the assigned area and may be required to travel and work in other areas in the District.

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I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

EMPLOYEE (Print)

EMPLOYEE (Signature)	DATE
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I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)	DATE
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