

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION District 11/TMS Asset Management/Maintenance Support	
WORKING TITLE Transportation Maintenance Engineer	POSITION NUMBER 911-602-3609-XXX	REVISION DATE 08/31/2026

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

GENERAL STATEMENT:

Under the direction of the Senior Transportation Electrical Engineer (Supervisor), the Transportation Engineer (Electrical) performs a wide variety of professional electrical and electronic engineering responsibilities to support the Traffic Safety & Operations-Transportation Management Center Division across various Electrical Systems (ES), Intelligent Transportation Systems (ITS), and Transportation Management Systems (TMS) within the Transportation Maintenance Electrical Branch. This position develops, analyzes, designs, estimates, constructs, inspects, monitors, and maintains ES, TMS, ITS, and emerging technologies. As the incumbent progresses in experience, assignments are more complex and may take on lead responsibilities overseeing the activities of electrical and electronic engineering and technical personnel.

CORE COMPETENCIES:

As a Transportation Engineer (Elect), 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.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Safety - Collaboration, Innovation, Stewardship)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Employee Excellence - Innovation, Stewardship)
- **Initiative:** Ability to identify what needs to be done and doing it before being asked or required by the situation. Seeks out others involved in a situation to learn their perspectives. (Equity - Collaboration, Innovation, Pride)
- **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. (Safety - Collaboration, Innovation, Pride)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Safety - Collaboration, Integrity)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Equity, Prosperity - Collaboration, Equity, People First)
- **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. (Safety, Employee Excellence - Collaboration, People First)
- **Forward Thinking:** Anticipates the implications and consequences of situations and takes appropriate actions to be prepared for possible contingencies. Anticipates and prepares for future developments. (Safety, Climate Action - Innovation, People First, Stewardship)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Safety, Climate Action - Innovation, People First)

TYPICAL DUTIES:

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

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DOT PM-0924 (REV 01/2025)

40%	E	Designs electrical plans and prepares quantity calculations and cost estimates for lighting, traffic signals, network systems, power, communication, and other traffic management projects. Calculates quantities, develops capital and supports cost estimates, researches material and device costs, estimates labor hours, and prepares project budgets and funding proposals. Coordinates with internal and external stakeholders, including DPAC for Minor B project advertising, and obtains required Environmental, Right-of-Way, and Utilities certifications and permits. Writes, reviews, and coordinates specifications with Office Engineer and Construction staff to ensure compliance with Caltrans standards and may assist in reviewing other designers' work. Prepares HM budget requests to HQ, Division of Maintenance; tracks asset management requests; ensures adequate construction capital; and submits to Project Budgets and Project Submittal units. Conducts field investigations as needed, adhering to all safety standards.
30%	E	Inspects Contractors' electrical work in the field to ensure compliance with plans, specifications, and utility agreements across multiple projects. Adheres to and enforces all applicable safety standards and practices while performing field inspections. Coordinates with internal stakeholders to support contract delivery and communicate contract activity and progress. Evaluates field conditions that may require contract change orders, including redesign of electrical systems. Calculates and documents field quantities for monthly payments, provides supporting documentation for quantities paid, and records as-built conditions of constructed facilities. Prepares daily reports documenting Contractor's activities and compliance with contract requirements.
25%	E	Coordinates with field technicians, vendors, and other branches to ensure system operability. Provides technical expertise, recommends improvements, documents deficiencies and corrective measures, and ensures technology is current. Prepares monthly status reports, maintains design plans and system layouts, attends project and maintenance meetings, and supports branch deadlines. Coordinates with the District Asset Management Coordinator by providing required information and updating Minor B and Asset Management databases. Conducts field investigations as needed while adhering to safety standards.
5%	M	Performs non-professional engineering tasks, including project support, meeting minutes, and file management. Attends training, workshops, presentations, database updates, in-person meetings, and web-based meetings as directed by the Branch Chief.

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
This position does not supervise. May act in a lead engineer capacity on occasion.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS
Knowledge of: Electrical Engineering and Computer theory and operation, including state-of-the-art technology, e.g., Computer-Aided Design and Drafting (CADD), personal computers, stand-alone interactive systems and various technical aids; principles of electrical, electronic and system engineering, techniques and methods used in electrical, electronic, and computer engineering; modern electrical and electronic apparatus, communication, instrumentation; direct and alternating current circuits and voltage drop calculations; methods, materials, tools and equipment used in electrical, electronic and computer work; various codes; basic occupational safety and health regulations governing the design and installation of electrical, and electronic equipment, including Standard Specifications, Standard Plans, Departmental policies, directives, Plan Preparation Manual, the National Electric Code and Title 8 Industrial Relations; project development, project delivery, contract development, and contract administration.

Ability to: Recognize and apply principles to design complex electrical systems; make neat and accurate drawings and technical diagrams and sketches; use state-of-the-art technology, i.e., CADD, personal computer, stand-alone interactive systems and various technical aids; make calculations; inspect electrical installations; specify necessary equipment and materials; accurately interpret drawings, circuit diagrams and specifications; read and understand highway plans, drawings and field data which relate to transportation and traffic management related electrical and electronic systems and installations; write correspondence and prepare effective reports; get projects out on schedule; communicate effectively, written and orally; establish and maintain a cooperative relationship with those contacted in the course of work; analyze complex situations accurately and take effective action.

Working knowledge of the Asset Management program; Contract development, management, execution, and inspection; Microsoft Office and its various programs.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR
Errors in judgment and in decisions can result in redesigning projects, costly contract change orders in the field, and incur additional costs to the Department.

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

PUBLIC AND INTERNAL CONTACTS

The Transportation Engineer Electrical coordinates with utilities, local agencies, manufacturers, Bidders, Contractors, DPAC, HQ, other functional units in D11, and project development teams.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

This position requires the use of a hard hat, safety glasses, boots, and vest during site survey and construction inspection. The incumbent must be able to perform duties described in this document in a safe manner that does not endanger themselves or others; Must be able to work in an office environment which requires devoting lengthy periods of time reading printed documents and images presented on a computer screen as well as discerning details on maps and photographs. The incumbent must have the ability to tolerate difficult situations, and productively manage conflict and confrontation; Must be able to maintain balance while climbing or descending slopes on the project sites and close to travel lanes on the State highways. Must have the ability to work extended hours and overtime to perform field work and meet deadlines and milestones.

WORK ENVIRONMENT

The work environment during project design includes an office setting with artificial light and temperature control and travel to the job site which includes remote areas for contract administration. The work environment during construction inspection and site survey may include but not limited to travel to job sites, walking on slopes and outdoor terrain, uneven paths and unpaved roads, exposure to outdoor weather and night work while exercising safe practices for opening electrical service cabinets, controller cabinets and other electrical systems; opening different size ground level pull boxes; and bending for verification of conduit, cables and conductors. Work schedule for contract administration will coincide with contractor schedule and as needed for emergency contracts.

Travel throughout the District is required, which includes San Diego and Imperial Counties. Possession of a valid driver's license is required to operate a State-owned or leased vehicle.

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

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

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE