

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION DES/SES/OEMWW/Electrical Maintenance & Spec Projects Br	
WORKING TITLE Transportation Engineer	POSITION NUMBER 559-220-3609-025	REVISION DATE 09/17/2025

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

GENERAL STATEMENT:

This position exists within the Office of Electrical, Mechanical, Water & Wastewater Engineering (OEMWW). Under the direction of a Senior Electrical Engineer (Supervisor), incumbent will perform electrical engineering design, specification writing, estimating, and inspection work involved in the design, construction and maintenance of Department facilities and systems. Facilities include: storm water drainage pumping plants, sewage lift stations, vehicular tunnels, movable bridges, safety roadside rest areas, highway maintenance stations, equipment repair shops, toll plazas, truck weigh and inspection facilities, office buildings, water and wastewater facilities, and other transportation-related facilities. Systems include power distribution, lighting, communication, SCADA, complex PLC controls, EV charging stations, photovoltaic and security. Traveling and driving to various locations and field inspections are required.

Possession of a valid Driver's License is required when operating a state-owned, leased or personal vehicle to perform these duties.

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.

- **Learning on the Fly:** Learns quickly, is open to change, experiments, and is flexible. (Employee Excellence - Collaboration)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety - Integrity, People First)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Employee Excellence - 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. (Equity - People First)
- **Teamwork and Collaboration:** Sets team structure. Organizes, leads, and facilitates team activities. Promotes team cooperation and encourages participation. Capable of cross functionality and working well with others on a team to achieve personal goals, team goals, and organizational goals. Takes responsibility for individual actions in order to achieve consistent results. (Safety, Equity - Collaboration)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Equity, Climate Action, Prosperity - Collaboration, 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. (Equity - Collaboration, Equity, Stewardship)
- **Planning and Results Oriented:** Organizes and executes work to meet organizational goals and objectives while meeting quality standards, following organizational processes, and demonstrating continuous commitment. (Employee Excellence - Collaboration, Innovation)
- **Computer literacy and application:** Appropriate knowledge of computer applications and other tools necessary to successfully perform tasks. (Employee Excellence - Innovation, Stewardship)

TYPICAL DUTIES:

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

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

30%	E	Conducts routine and emergency maintenance engineering inspections of Department facilities and systems. Inspections are followed with reports and correspondence that outline the condition of the facility or system and include recommendations and estimates for necessary repairs. Inspections and field work consist of equipment inspections, troubleshooting the complex electrical systems, testing and providing technical engineering consultation for Caltrans maintenance personnel. Inspections are performed to ensure the facility's safety, reliability, and proper operation and to preserve and protect the investment in the facility or system. Provides response to structure maintenance emergencies to assist Caltrans district maintenance staff to restore electrical equipment operation. Provides training to Caltrans district maintenance personnel on electrical system operation and maintenance.
25%	E	Performs professional design work, such as preparing plans, writing specifications using standard special provisions, manufacturer's data and departmental guidelines and standards, and computing estimates of electrical systems for Department facilities and systems. Specifications are combined with the plans and engineer's estimate to form the construction documents package. The package is used for competitive bidding and construction of the project. Design duties typically consist of conducting site visits to determine existing field conditions, using engineering principles, methods, codes, design guides, publications, equipment and computers to create engineering drawings showing the information necessary for constructing facilities requested by the customer. These drawings include site plans, power and lighting plans, control panel elevations, equipment cross-section details, wiring diagrams, PLC HMI screen layouts, PLC schematic diagrams and panel schedules. Customers include public and internal contacts defined below. Coordinates with project design team and stakeholders to ensure contract documents are accurate, complete, and satisfy the project requirements. The project design team includes architects, civil engineers, mechanical engineers, specification engineers, estimators, construction engineers, and project managers. Stakeholders include district personnel, state fire marshal, local agencies, contractors, suppliers, and consultants.
15%	E	Reviews design plans, specifications and cost estimates for in-house and consultant-designed transportation facilities to ensure compliance with Office and Department standards, for accuracy, completeness and applicable codes. Directs and reviews the work of Electrical Engineers and Electrical Engineering Technicians or Structural Design Technicians.
15%	E	Writes project and inspection reports, analyzes, and prepares correspondence that outlines the condition of the facility or system after a routine or emergency maintenance inspection and includes recommendations and estimates for necessary repairs.
10%	E	Provides construction engineering for the projects that includes reviewing shop plans and lists of equipment, inspection and testing of the completed work for compliance with contract documents. Prepares Recommended Contract Change Orders when necessary and reviews and completes As-Built plans.
5%	M	Develops standard plans, specifications and estimates for standard electrical systems used in designing transportation-related facilities. Performs other work duties as required. Occasionally, acts as 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 other employees, but must work as a member of a team. May function as a lead person over the activities of various engineering and technical personnel.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

- Knowledge of electrical engineering methods, materials, and equipment used in the design, construction and maintenance of transportation facilities.
- Electrical engineering fundamentals
- Designing and preparing plans, layout, specification writing, and estimates for electrical systems
- SCADA and PLC based control systems
- Various codes, safety orders, and regulations governing the design and installation of electrical equipment.
- Ability to accurately convey technical engineering information in English verbally and in writing.
- Ability to prepare correspondence and make effective oral and written reports.
- Ability to use a computer workstation with software programs such as Microsoft Word, Excel and FileMaker Pro.
- Ability to use Computer Aided Drafting and Design (CADD) software such as Microstation.
- Ability to analyze situations and adopt an effective course of action.
- Ability to drive a vehicle.

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Responsible for assuring the safety of the traveling public at a cost that is an effective use of public funds. Errors in judgment and decisions could affect public safety or result in liability for the Department. Electrical failure can be catastrophic due to loss of life, disruption in goods movement, and/or delays to the traveling public.

PUBLIC AND INTERNAL CONTACTS

Incumbent maintains communications with personnel working on projects to which he/she is assigned. These contacts may include units such as architecture and other engineering design sections, construction staff, maintenance personnel, district personnel, outside Agencies, and internal or external approving authorities.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Ability to move, lift or carry for a medium distance.

- Ability to climb ladders with appropriate safety harnesses 20 feet at a time for heights and depths of up to 60 feet.
- Must be able to work on elevated catwalks and landings.
- Must be able to walk within construction sites that are wet, have uneven surfaces and contain construction vehicular traffic.
- Once trained, must be able to work on confined spaces, as defined by Cal-OSHA, and other cramped environments.
- Once trained, must be willing to work on energized low-voltage (less than 600 volts) power systems safely.
- Must be willing to fly in commercial aircraft routinely throughout the State.

WORK ENVIRONMENT

While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public. DES employees may be given temporary assignments on DES projects throughout the State as workload demands.

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