

**POSITION DUTY STATEMENT**

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Transportation Engineer (Electrical)	OFFICE/BRANCH/SECTION D59/SD/OEMWW/Electrical M&SP Branch	
WORKING TITLE Transportation Engineer (Electrical)	POSITION NUMBER 559-240-3609-xxx	EFFECTIVE DATE 01/26/2015

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

**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 maintenance engineering work, specification writing, estimating, and inspection work involved in the maintenance, design and construction 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, control, photo voltaic and security. Possession of a valid CA driver's license is preferred.

**TYPICAL DUTIES:**

Percentage Essential (E)/Marginal (M) <sup>1</sup>	Job Description
40% E	Conducts routine and emergency maintenance engineering inspections of Department facilities and systems. Inspections consist of field inspections, troubleshooting, testing and providing technical engineering consultation for Caltrans maintenance personnel. Inspections are performed to ensure the safety, reliability and proper operation of the facility or system and to preserve and protect the investment in the facility or system.
20% E	Writes reports and correspondence that outline the condition of the facility or system after a routine or emergency maintenance inspection and includes recommendations and estimates for necessary repairs.
20% 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 principals, 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 layouts, typical sections, cross-sections, elevations, details and schematics. 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. 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.
10% E	Provides construction engineering for these projects, including reviewing shop plans and lists of equipment, and inspecting and testing of completed work for compliance with contract documents. Prepares Recommended Contract Change Orders when necessary and reviews and completes

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As-Built plans.

- 05% M Checks plans, specifications and cost estimates for in-house designed and consultant designed transportation facilities to ensure conformance with Office and Department standards, for accuracy, completeness and applicable codes.
- 05% M Develops standard plans, specifications and estimates for standard electrical systems used in designing transportation-related facilities.

<sup>1</sup>ESSENTIAL 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.

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### SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

None.

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### KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

- Knowledge of electrical engineering methods, materials, and equipment used in the design, construction and maintenance of transportation facilities.
  - Ability to accurately convey technical engineering information in English both 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.
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### 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.

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### PUBLIC AND INTERNAL CONTACTS

Employee 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.

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### 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 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.
  - Must be willing to drive a State automobile for up to 8 hours a day.
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### WORK ENVIRONMENT

While at their base of operation, incumbent will work in a climate-controlled office under artificial light. However, due to periodic problems with the heating and air conditioning, the building temperature may fluctuate. Incumbent will be required to travel and work outdoors, and will be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

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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.)

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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