STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Transportation Engineer (Elect)	District 3/Traffic Operations/Electrical Design E1 Branch	
WORKING TITLE	POSITION NUMBER	REVISION DATE
Transportation Engineer (Elect)	903-350-3609-005	

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

GENERAL STATEMENT:

Under general direction of the Chief, Electrical Design Branch (a Senior Transportation Electrical Engineer), the incumbent performs transportation field and office electrical, electronic, and related traffic engineering work of average difficulty. The incumbent performs electrical engineering duties in support of the Division of Traffic Operations, including the planning, operations, and design of Traffic Management System (TMS) elements including traffic signals, ramp metering systems, closed-circuit television systems (CCTV), Changeable Message Signs (CMS) and traffic census stations. Possession of a valid driver's license is required when operating a state owned or leased vehicle.

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, Climate Action - Collaboration, Innovation, People First, Stewardship)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Prosperity, Employee Excellence - Collaboration, Integrity, Pride)
- **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. (Safety, Equity - Innovation, Integrity, Pride, 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. (Safety - Collaboration, Innovation, Integrity, People First, Stewardship)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Pride, Stewardship)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Safety, Employee Excellence - Collaboration, Innovation, People First, Pride, Stewardship)
- **Communication:** Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Equity, Prosperity, Employee Excellence - Collaboration, People First, Pride)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety - Collaboration, Innovation, People First, Stewardship)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Innovation)

TYPICAL DUTIES:

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

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45%	E	Prepare or assist in the preparation of plans using computer-aided design techniques for the delivery of elements critical to Traffic Operations elements including roadway lighting systems, traffic signal control systems, ramp metering systems, traffic data collection systems, fiber optic and processing systems, roadway information systems, and other electrical and electronic systems. Assist in the development and operation of electrical and electronic systems, including software, and inspect the installation of electrical and electronic materials and equipment. (For Range D - 20%(E) - Lead-worker for preparing plans, specifications, and estimates for roadway lighting systems, traffic signal control systems, traffic data collection, fiber optic and processing systems, roadway information systems and other electrical and electronic systems.)
20%	E	Prepare or assist in the preparation of estimates and draft technical specifications for electrical elements used to improve Traffic Operations and Safety on the State Highway System.
15%	E	Prepare or assist in the preparation of expenditure authorizations, project reports, cooperative agreements, and correspondence for Lighting, Signals, Ramp metering, Changeable Message Signs, Highway Advisory Radio, Close-Circuit Television, and Traffic Monitoring Systems, etc. Review and recommend the selection of electric and electronic equipment used in the plans and specifications.
10%	E	Provide assistance to Maintenance, Construction, and Accounting by negotiating with utility companies for electrical services and estimating load data for verification of energy billing.
5%	M	Make field investigations, study physical characteristics of intersection, channelization, and other traffic movement areas, and collect engineering data. Other duties as assigned.
5%	M	Review and recommend the selection of electric and electronic equipment used in the plans and specifications.

[1]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.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS
This position does not supervise.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

• Knowledge of computer theory and operation; mathematics related to electrical engineering; electrical and electronic theory and practices; modern electrical apparatus, communications, instrumentation; direct and alternating current circuits; methods, materials, tools and equipment used in electrical and electronic construction work; National Electric Code and Electrical Safety Orders of the Division of Occupational Safety and Health.

• Ability to do electrical and electronic design work; make neat and accurate drawings and technical sketches; provide accurate electrical calculations; conduct traffic data collection; submit traffic warrants; inspect electrical installations; specify necessary equipment and materials; accurately interpret drawings, circuit diagrams, and specifications; maintain cooperative relations with employees whose work is being inspected; analyze situations accurately and take effective action; prepare correspondence and reports, and communicate effectively orally and in writing.

• Ability to organize, plan, and complete work in a timely fashion.

• Knowledge of the functional and organizational characteristics of the Division.

• Knowledge of District functions, policies, procedures, and operations.

• Knowledge of computers, computer-aided design, and the Department’s standard software.

• The ability to work independently, learn quickly, analyze situations, and communicate tactfully and effectively with a variety of people with different backgrounds, experiences, and attitudes.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Errors in judgment and/or decisions could affect public safety or result in tort liability for the Department. Inaccurate, delayed, or incomplete contract plans and estimates will result in added costs due to higher bid estimates or contract changes during construction.

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PUBLIC AND INTERNAL CONTACTS

Must be able to respond to inquiries and provide accurate and factual information. Should be able to deal effectively with others. Will require frequent contact with representatives of other units with Caltrans, other agencies, utility companies, and the private sector.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical requirements for this position include sitting for long periods of time using a keyboard and video display terminal, and may occasionally require bending, stooping, and kneeling. Field reviews for traffic data collection and project constructibility are required.

Mental requirements for this position include the ability to multi-task, adapt to changes in priorities, and complete tasks or projects with short notice; the ability to organize and prioritize large volumes of varied documents; and the ability to concentrate in order to review and create documents and meet strict deadlines.

Emotional requirements for this position include: interaction with many people and the ability for employees to work together in a cooperative manner; ability to resolve emotionally charged issues reasonably and diplomatically; deal effectively with pressure, maintain focus, and intensity yet remain optimistic and persistent, even under adversity; consider and respond appropriately to the needs, feelings, and capabilities of different people in different situations; is tactful and treats others with respect; open to change and new information; and adapts behavior and work methods in response to new information, changing conditions, or unexpected obstacles.

WORK ENVIRONMENT

While at their base of operation, employee will work in a climate-controlled office under artificial lighting. Employee may also be required to travel and work outdoors and may be exposed to traffic, dirt, noise, uneven surfaces, and/or extreme heat or cold.

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

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