

POSITION DUTY STATEMENT

DOT PM-0924 (REV 08/2024)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION D11/Traffic Safety & Ops-Transportation Mgmt Cntr., Elec. Cons	
WORKING TITLE Transportation Electrical Engineer	POSITION NUMBER 911-350-3609-033	REVISION DATE 09/06/2024

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

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 Transportation Management Systems (TMS) within the Electrical Construction Branch. This position supports the planning, design, construction, maintenance, and inspection of electrical and electronic systems for transportation and traffic management-related projects. As the incumbent progresses in experience, assignments are more complex and may take on a lead responsibilities overseeing the activities of electrical and electronic engineering and technical personnel. At the journey level and with a professional license, the incumbent may act in a responsible charge capacity.

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

Transportation Engineer, (Electrical) in Range D requires a valid Professional Engineering License (Electrical) issued by the California Board of Registration for Professional Engineers. For all other ranges, a Professional Engineering License is not required.

Appointment to this position requires the incumbent to successfully pass the Department of Justice (DOJ) background check.

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 First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, 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. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, 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 First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **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 First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **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. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)

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- **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. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **Thoroughness:** Ensures that work and information is complete and accurate. Ensures that assignment goals, objectives, and completion dates are met. Documents and reports on work progress. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)

TYPICAL DUTIES:

Percentage	Essential (E)/Marginal (M) ¹	Job Description
45%	E	Performs field inspections of contractors' electrical and electronic State Highway Operation and Protection Program (SHOPP) projects during and after construction to ensure compliance with contract specifications, design plans, standard specifications, cost estimates, utility agreements, safety codes and regulations, etc. Formulates and researches field conditions that necessitate a contract change order including, but not limited to, engineering re-design work to electrical and electronic plans and specifications for highway lighting, traffic signals, communication, Middle Mile Broadband Network, and other transportation and traffic management-related projects using state-of-the-art technology (e.g., Computer-Aided Drafting/Design (CADD), computer applications, stand-alone interactive systems, various technical aids). Calculates accurately and provides documents to support field quantities for payment on a monthly basis. Reviews and performs analysis to verify contractor submittal, materials, and labor costs. Documents the as-built condition of constructed facilities. Reviews and consolidates field reports and documentation to ensure consistency and quality.
30%	E	Establishes construction priorities by representing the Branch's point of view in pre-construction meetings. Attends weekly construction project meetings to identify project issues and bottlenecks. Works with resident engineers to resolve project issues and formulates strategies to move projects forward. Coordinates signal turn-on/shutdown activities with signal operations and electrical maintenance. Collaborates with teams, contractors, and other stakeholders to ensure successful project execution.
10%	E	Collaborates and provides construction support to the Highway Maintenance-4 (HM4) TMS and Minor B program electrical and electronic projects. Conducts electrical and electronic field inspections for maintenance and repairs work for compliance with contract specifications. Generates estimates and ensures project deliveries meet Caltrans standards and specifications.
10%	E	Makes accurate electrical calculations, analyzes situations effectively, and takes effective action regarding transportation facilities or system design concepts, and applies sound engineering principles. Works on a team or independently to complete assigned engineering tasks for the development of projects or administration of construction projects. Facilitates, schedules, participates, and conducts quality control or constructibility reviews, safety review meetings, value analysis studies, and participates as a team member of a project development team. Responds to inquiries, complaints, maintenance concerns, claims resolution, and pending litigation. Prepares technical documentation, specifications, correspondence, reports, and presentations to communicate project status, findings, and recommendations. Stays up to date with new developments in electrical and electronic engineering particularly related to transportation and traffic management-related systems.
5%	M	Performs other related duties as assigned on various active projects and special reviews. Documents meeting minutes, maintains project files, attends training, meetings, and public workshops, handles email and telephone inquiries, and provides training to other staff. Provides backup to other team members during a period of absence.

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 staff. However, the incumbent may act as a lead person over the activities of various

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electrical and electronic engineering and technical personnel.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge Requirements:

Computer theory and operation, including state-of-the-art technology (e.g., CADD, personal computers, stand-alone interactive systems, and various technical aids); mathematics related to electrical engineering; theory principles, standard practices, techniques, and methods used in electrical, electronic, and computer engineering; modern electrical apparatus, communications, instrumentation; direct and alternating current circuits; methods, materials, tools and equipment used in electrical, electronic or computer work; various codes; basic occupational safety and health regulations governing the design and installation of electrical and electronic equipment, including the National Electric Code and Title 8 Industrial Relations, Electrical Safety Orders of the Division of Occupational Safety and Health.

Ability and Analytical Requirements:

Do electrical or electronic design work; make neat and accurate drawings and technical sketches; use state-of-the-art technology (e.g., CADD, personal computers, stand-alone interactive systems, and various technical aids); make electrical calculations; inspect electrical installations; work with a variety of testing equipment; 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; establish and maintain friendly and cooperative relations with those contacted during the course of inspections and other work; analyze situations accurately and take effective action; communicate effectively; originate correspondence and prepare effective reports.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent is responsible for making accurate electrical or computer engineering calculations, taking effective action to avoid delays, and making sound decisions in the interpretation of contract plans and specifications. Omissions in plans and reports could lead to unnecessary change orders, claims, and delays. Errors in judgment could result in a design project of lesser quality, which could increase project construction costs or increase the Department's exposure to tort liability.

PUBLIC AND INTERNAL CONTACTS

The incumbent must be able to establish and maintain professional and cooperative working relationships with those contacted during the course of the work, such as with regional and District functions, contractors and their employees, local agencies and officials, regulatory agencies, utility companies, engineering consultants, developers, and public stakeholders in order to transmit or obtain relevant engineering information. These contacts can be verbal or written, as needed, to perform assignments with the goal of protecting the State's interests and providing quality products for the State's infrastructure. The incumbent must be able to guide project teams to issue resolution and be able to build consensus within teams, identifying potential conflicts and using resolution techniques to resolve at the lowest level possible.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent uses a keyboard, mouse, and video display monitor, stays stationary for prolonged periods, and may be required to move large or cumbersome reports from one location to another, including samples of materials that can weigh up to 50 pounds. While working in a field environment, the incumbent may be required to drive long distances and move on uneven terrain.

Mental requirements include, but are not limited to, simultaneously working on several assignments and deadlines, working within a noisy and occasionally distracting work environment, and evaluating and understanding critical calculations, data, and other material that may require long periods of mental concentration.

Emotional requirements include, but are not limited to, effective personal interaction skills and the ability to effectively deal with others in various situations, deal with situations calmly and respectfully, and maintain composure in the face of confrontation and highly charged emotional situations. The incumbent must have the emotional ability to maintain a positive, customer service-oriented attitude, resolve emotionally charged issues reasonably and diplomatically, develop and maintain cooperative working relationships with all contacts, and be receptive to change and new information.

WORK ENVIRONMENT

Work will be both indoors and outdoors. While working indoors in an office setting, the incumbent works in a climate-controlled environment with artificial lighting. Multi-floored buildings are equipped with elevators and stairs. For outdoor field work activities, the incumbent may be exposed to variable traffic conditions, dirt, dust, chemicals, loud noise, uneven surfaces, and severe weather conditions. The incumbent must be aware of and comply with field safety procedures when working in the field. The incumbent is required to work at various locations throughout the District in San Diego and Imperial Counties and will need to drive a vehicle. Possession of a valid driver's license is required to operate a State owned or leased vehicle. Working at night and overtime may be required.

Temporary assignments away from the headquarters location may be required. The incumbent will be notified of a change of assignment under the terms of the current Collective Bargaining Agreement. Additionally, the incumbent will be reimbursed for

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travel expenses per the Department's travel policies.

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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