

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Elect)	OFFICE/BRANCH/SECTION D3/ TRAFFIC OPS / SIG OPS & TRAFFIC CENSUS	
WORKING TITLE Transportation Engineer (Electrical)	POSITION NUMBER 903-350-3609-XXX	REVISION DATE

As a valued member of the Caltrans leadership 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, and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

Under general direction of the Chief, Traffic Operation Branch (a Senior Transportation Electrical Engineer), the incumbent will perform the transportation field and office electrical, electronic and related traffic engineering work of relating to Traffic Signal Systems. The incumbent will conduct surveillance, analyze the data, make real time adjustments, coordinate signals, and document operational modifications to traffic signals systems. Incumbent will assist coordinating the development, design and operations to Traffic Signal Systems. Incumbent will act as engineering support in all phases of Project Development and Office of Encroachment Permits. Also, will review design plans, specifications and estimates, shop drawings, Traffic Signal timing diagrams, and provide Synchro analysis, organize files and submit reports. Incumbent will participate installing and establish communication systems to Traffic Signal Systems and have an average knowledge on communication systems. Incumbent will perform field inspection and perform Traffic Signal turn-ons. In addition, the incumbent will assist in the collection of traffic operations field data, preparation of reports, traffic engineering studies, and other related traffic operations work of average difficulty. 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. (Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Equity, Innovation)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety First, Advance Equity and Livability in all Communities - Engagement, Pride)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Cultivate Excellence - Engagement, 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. (Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Engagement, Equity)
- **Relationship Building:** The ability to develop and maintain internal and external trust and professional relationships, which includes listening and understanding to build rapport. (Cultivate Excellence - Engagement, Equity, Integrity)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Safety First, Advance Equity and Livability in all Communities - Engagement, Equity)
- **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. (Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Integrity, Pride)
- **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. (Safety First, Cultivate Excellence, Lead Climate Action - Innovation, 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 - Equity, Innovation)

POSITION DUTY STATEMENT**TYPICAL DUTIES:**

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

PM-0924 (REV 01/2022)

50%	E	Prepare and perform office and field investigation on traffic signal systems and providing a traffic signals analysis and calculations. Making regular field visits and conducting AM/PM Peak traffic signal surveillance, responding citizens complaints, studying the physical characteristics of the signalized intersection and operation, channelization, and other traffic movement areas and collect engineering data. Making traffic signal timing adjustments for optimization, safe, and efficiency. Perform pre-operation signal timing analysis and calculations for a traffic signal turn-on and continue within 48hrs monitoring the signal operation shortly after the signal turn-on.
15%	E	Review or assist in the preparation of project design specifications, estimates, draft plans, and shop drawings. Provide engineering support in all phases of project development and encroachment permit projects.
15%	E	Provide reviews and field assistance to Maintenance, Construction and Encroachment Permit projects and respond to related traffic signal system inquires.
10%	E	Install and establish communication system to traffic signal systems. Engineer will provide efficient and safe technical support for the implementation of cutting-edge traffic signal solutions.
5%	M	Prepare, review, and recommend the selection of electric and electronic equipment used in the design plans and specifications for traffic signal systems.
5%	M	Review, recommend, and assist with the design department furnished materials (DFM) list related to traffic signal system.

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.

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; make 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

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

incomplete contract plans and estimates will result in added costs due to higher bid estimates or contract changes during construction.

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. Mental requirements for this position include the ability to multi-task, adapt to changes in priorities, and complete tasks or projects with short notice; 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.)

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

ADA Notice

For individuals with sensory disabilities, this document is available in alternate formats. For alternate format information, contact the Forms Management Unit at (279) 234-2284, TTY 711, or write to Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.