STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Transportation Engineer Electrical, (Ranges A,B,C and D)	District 07/Operations	
WORKING TITLE	POSITION NUMBER	EFFECTIVE DATE
TMS Corridor Engineer	907-349-3609-xxx	

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:

Under the direct supervision of a Senior Transportation Electrical Engineer(Supervisor). He/she performs various office and field duties, which include analysis, surveillance, inventory and support of a variety of highway and Transportation Management Systems (TMS) / Intelligent Transportation Systems (ITS) electrical installations as part of the pilot corridor study. He/she serves as a consultant to other engineers on systems operation and application related to ITS elements and Advanced Transportation Management Systems (ATMS) associated with the study corridor.

TYPICAL DUTIES:

Percentage	Essential (E)/Marginal (M)[1]	Job Description
45%	E	Performs analysis, surveillance, inventory on a variety of transportation management systems and highway electrical installations, which include, but not limited to ATMS hardware, software and network, closed circuit television (CCTV) cameras, changeable message sign (CMS), traffic monitoring stations, traffic signals, ramp metering (RM) systems and highway advisory radio (HAR) systems. Monitors detection health through the Performance Measurement System (PeMS). Monitors and processes traffic incident information through PeMS and the Transportation Management Center Activity Logging (TMCAL) system. Configures and calibrates TMS elements to ensure optimal performance of the TMS corridor.
20%	E	Performs key electrical and system engineering/integration tasks needed to support the real-time ATMS systems and related hardware and software.
20%	E	Collects, Reviews and validates system data for use in preparing corridor reports. Contributes to the development of the corridor traffic study. Update the Statewide TMS tracking system (Trac) to accurately document all TMS activities. Accurately and completely charge labor hours according to the current Work Activities Charging Instructions (WACI).
10%	E	Reviews corridor projects and documents that have been prepared by others to ensure that electrical features of plans, special provision and other data are in conformance with Caltrans standards and policies. Determines impacts of work that may affect corridor operations.
5%	E	Prepares and maintain TMS system documentation, specifications, and operation manuals.

[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

None. Range D may be required to work in lead capacity over engineers and other staff.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of electrical and electronic theory as applied to traffic signals and safety lighting, freeway lighting, sign lighting, tunnel lighting, ramp metering, flashing beacons, extinguishable message signs (EMS), vehicular detection, and

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count stations. Knowledge of the various codes, safety orders, standard regulations, the material and construction codes for the installation of highway lighting and traffic controls equipment. Knowledge of CADD software such as Microstation and Visio to draw plans and network diagrams. Knowledge of digital communication network design as it relates to ITS infrastructure. Knowledge of central and field control equipment and supporting electronic systems and applications. Knowledge of vehicle detection technology used in the both arterial and freeway applications. Knowledge of the systems engineering process used to develop and maintain ITS applications. Knowledge of systems and applications used to monitor and analyze transportation data.

Abilities:
- Make neat and accurate electrical computations and engineering notes and to prepare effective reports.
- 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 in the course of the work, and to communicate effectively.
- Inspect electrical installations and specify necessary equipment and material.
- Travel to and work at construction sites throughout California.
- Use state-of-the-art hardware and software used to aid electrical engineering design and troubleshooting.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Engineering evaluations and judgments may affect Department programs, projects and credibility. Errors in judgments could result in adverse impacts to highway traffic performance including increased delay, congestion, and potential for tort liability.

PUBLIC AND INTERNAL CONTACTS

Required to meet with other Caltrans staff, law enforcement personnel, and staff from other agencies, engineering firms, utility companies and the public. These contacts will be verbal or written, as needed, to perform assignments.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical requirements include the ability to travel to work sites away from the office, to move around on uneven surfaces in rugged areas that are near freeways and highways. May be required to stand or sit for long periods of time using a keyboard and video display terminal. Required to physically operate a motorized vehicle and drive for extended periods of time to field locations.

Mental Requirements include ability to sustain mental activity necessary for report writing, problem solving, analysis and reasoning when it comes to judgment that relates to public safety, emergencies and traffic safety. Must have the ability to multi-task, adapt to changes in priorities, and complete tasks or projects on time. May be required to work beyond normal work hours during emergencies. Must grasp the essence of new information and master new technical and business knowledge.

Must maintain and follow safe work practices, including operation of vehicle amber lights in an appropriate and safe manner.

Emotional requirements include ability to develop new insights into situations and apply innovative solutions to make organizational improvement. Ability to resolve emotionally charged issues reasonably and diplomatically. Must be able to develop and maintain cooperative working relationships. Behave in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service.

WORK ENVIRONMENT

The work environment will consist of a combination of indoor office and outdoor field situations.

While at their base of operation, employees will work in a climate-controlled office under artificial lighting. However, due to periodic problems with the heating and air conditioning, the building temperature may fluctuate.

Travel to the field will be required as necessary to configure or troubleshoot various TMS/ITS elements. The incumbent will be exposed to walking on varied terrain and in various climates.

Incumbent must possess a valid Driver's License and maintain the license in good standing at all times.

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