

**POSITION DUTY STATEMENT**

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE CT Electrician II	OFFICE/BRANCH/SECTION D2/Mtce & Operations/ITS Engineering & Support	
WORKING TITLE ITS Field Systems Electrician	POSITION NUMBER 902-602-6924-	REVISION DATE

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 Caltrans Electrical Supervisor of the Office of ITS Engineering and Support, the incumbent is responsible for the electrical maintenance of the district's Transportation Management System (TMS). The incumbent may be required to install, configure, test and troubleshoots systems and Intelligent Transportation System (ITS) equipment. The incumbent works independently at a journey level and engages in complex layout work. This includes the electrical and mechanical systems associated with process control networks, telecommunications systems, microwave communications systems, video display systems connected to the Transportation Management Center (TMC) and Field Element Network (FEN). The incumbent also prepares, constructs and installs ITS field equipment as part of the district's capital support program.

**CORE COMPETENCIES:**

As a CT Electrician II, 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.

- **Flexibility and Managing Uncertainty** : Adjusts thinking and behavior in order to adapt to changes in the job and work environment. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Dealing with Ambiguity (Risk)**: Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Cultivate Excellence - Innovation)
- **Reliability**: Ability to demonstrate dependability in meeting commitments, and providing a consistent work product. Takes responsibility for individual actions in order to meet deadline demands. (Cultivate Excellence - Engagement)
- **Conflict Management**: Recognizes differences in opinions and encourages open discussion. Uses appropriate interpersonal styles. Finds agreement on issues as appropriate. Deals effectively with others in conflict situation. (Strengthen Stewardship and Drive Efficiency - Integrity)
- **Teamwork/Partnership**: Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Integrity)
- **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. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **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. (Cultivate Excellence - Engagement)
- **Forward Thinking**: Anticipates the implications and consequences of situations and takes appropriate actions to be prepared for possible contingencies. Anticipates and prepares for future developments. (Cultivate Excellence - Engagement)
- **Computer literacy and application**: Appropriate knowledge of computer applications and other tools necessary to successfully perform tasks. (Enhance and Connect the Multimodal Transportation Network - Engagement)

**TYPICAL DUTIES:**

Percentage	Job Description
Essential (E)/Marginal (M) <sup>1</sup>	

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40%	E	Installation, modification, maintenance and repair of Intelligent Transportation System (ITS) Elements and Field Element Network (FEN) communications system associated with the District's Transportation Management System (TMS) at a journey level. Duties include the layout, installation, configuration, programming, operation, diagnostic, troubleshooting and maintenance support of the following complex FEN component systems: Internet Protocol (IP) based wide area communications system; Microwave communications system; Various automated highway information systems; Various automated safety warning systems; Closed Circuit Television (CCTV) highway surveillance field elements; Vehicle Detection Station (VDS) field elements; Highway Advisory Radio (HAR) field elements; Changeable Message Sign (CMS) field elements; Roadway Weather Information System (RWIS) field elements; Field element uninterruptible power systems.
35%	E	Provide electronic, network, telecommunications, electrical and mechanical systems support to the district's Traffic Management Center (TMC) at a journey level. Duties include the layout, installation, configuration, programming, operation, diagnostic, troubleshooting and maintenance of the following complex TMC component systems: CCTV highway surveillance system; VDS system; HAR system; CMS system; RWIS system; ASW system; Video and audio switching and monitoring system; TMC cable television system; TMC room control system; TMC telecommunications system; TMC electrical power system.
10%	E	Provide journey level support for the electrical/electronic design and operation of equipment associated with the Districts ITS facilities to ensure proper and reliably functioning systems, including but not limited to the following; Reviews and provides comments on complex plans, specifications and estimates for ITS facilities prepared by other staff and Region Design; Inspect the installation of ITS components; Installs and configures emergency/back-up power systems in the event of electrical/power failure (generator and/or UPS) for TMC and ITS field elements; Coordinates with district information technology staff to ensure continuous operation of the TMC's computers, telephone and network communications system; Engages in and provides support for diagnosing and troubleshooting ITS equipment malfunctions.
5%	E	Incumbent is expected to inspect equipment utilized in the performance of electrical work to ensure compliance with safety standards. Equipment includes but not limited to: light trucks, hoists, small electrical power tools and a variety of hand tools.
5%	E	Attend training courses and staff/safety meetings.
5%	M	Performs general office duties and maintains office and field equipment.

<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.

**SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS**

None.

**KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**

Should have knowledge of the following: National Electric Code; Electrical Orders of the Division of Industrial Safety; Cal/OSHA Safety and health regulations; Caltrans Standard Plans and Specifications; Principles and practices of electronic and computer technology and theory; Principles and practices of telecommunications technology and theory; Principles and practices of electrical technology and theory; Implementation of traffic monitoring and control systems, including communications and electronic theory and instrumentation for physical testing and research; Practical application of Intelligent Transportation System (ITS) components and other emerging technologies to address traffic management and public safety issues; General microwave technology and theory; Modern data network and communications systems; Effects of weather and time on electrical and electronic equipment and their operation; Uninterruptible Power Supply (UPS) systems; Standby power generation systems; Power distribution systems; Communication systems; Audio-visual systems; Electrical control schematic and wiring diagrams; Engineering technology mathematics; Computers and their use; Caltrans Injury and Illness Prevention Program; Department Policies and Procedures.

Should have the ability to: Read and understand highway plans, drawings, and field data which are related to highway ITS and traffic control devices; Inspect the installation and operation of highway ITS components and recommend revisions; Inspect and oversee ITS installations and determine if the product meets specification requirements for functionality and public safety; Install, configure, test, deploy and troubleshoot complex controller software for various automated highway systems; Install, test, deploy and troubleshoot complex video, data network, instrumentation and audio systems; Install, test, deploy and troubleshoot complex microwave transmission systems and other wireless communications systems; Implement effective ITS maintenance procedures

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to meet specified system reliability requirements; Interpret all drawings, plans and specifications of any kind encountered in the work and incorporate electrical, electronic and associated drawings, plans and specifications into general design and contract documents; Analyze situations accurately and take effective action; Establish and maintain friendly and cooperative relations with those contacted in the course of the work; Communicate effectively orally and in writing; Report the status of work and the completed results; Prepare correspondence and detailed reports. Excellent writing skills required; travel out of town. Special Personal Characteristics: Manages time efficiently and is well organized; Works independently; Commitment to do what is necessary to complete the job at hand; Demonstrated commitment to continuous improvement in the Districts ITS infrastructure; Commitment to being available for after hours TMC support and other activities via use of personal communication devices such as pagers and cellular phones; Customer focus.

**RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR**

Incumbent is responsible for decisions necessary to complete the specific job assignments listed above. Errors in judgement, analysis, actions, conduct, directions and decisions could result in inefficient use of resources, employee injuries and death, injuries and death to members of the general public, loss of individual and departmental credibility, poor employee morale and affect the ability of Caltrans to deliver its work program on schedule.

**PUBLIC AND INTERNAL CONTACTS**

Contact with the public will be primarily through phone and written contact and requires a professional manner. This position also requires extensive contact within the District and North Region, including Project Development, Program Management, Advanced Planning, Construction, Permits, and Maintenance. Plan reviews will require contact with local agencies and consultants. Contact with Headquarters Traffic will be required on regular basis.

**PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS**

Incumbent will be required to use personal computers and telephones for long periods of time; Incumbent will be required to sustain mental activity needed for report writing, problem solving, researching, analysis and reasoning, and participating in meetings; Incumbent will be required to engage in extensive field work, lifting up to 75 pounds, occasionally driving for long periods and routine exposure to severe winter weather; Incumbent will be required to periodically work at heights in excess of 100 feet above ground level; Incumbent will be required to periodically engage in moderate to heavy construction type activities including: concrete work, ditching and grading, underground conduit installation, tower installation, antenna and associated apparatus installation and general equipment assembly; Incumbent will be required to develop and maintain cooperative working relationships.

**WORK ENVIRONMENT**

At their base of operations, incumbent will work in a climate-controlled office under artificial lighting. Incumbent will be required to traverse office complexes, parking lots, equipment repair shops, highways, sidewalks, roadside cut and fill slopes, and drainage facilities. Incumbent will be required to travel and work outdoors routinely and will be exposed to dirt, chemicals, noise, uneven surfaces, extreme heat, extreme wet conditions and extreme cold. Incumbent will be required to engage in field work during severe winter weather that routinely requires hiking over snow and manually removing accumulated snow from the work area.

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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)

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EMPLOYEE (Signature)

DATE

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I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

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SUPERVISOR (Print)

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SUPERVISOR (Signature)

DATE