

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

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| CLASSIFICATION TITLE Elec Eng Technician II | OFFICE/BRANCH/SECTION D2/Mtce & Operations/ITS Engineering & Support | |
| WORKING TITLE ITS Field Systems Support Technician | POSITION NUMBER 902-602-3627- | REVISION DATE |

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

GENERAL STATEMENT:

Under the direction of the Senior Transportation Electrical Engineer of the Office of ITS Engineering and Support, the incumbent installs, configures, tests and troubleshoots systems and Intelligent Transportation System (ITS) equipment that are part of the district's Transportation Management System (TMS). The incumbent works independently at a journey level and engages in complex layout work. This includes process control networks, telecommunications systems, microwave communications systems, video display systems, electrical and mechanical systems that are associated with 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. This position also assists in the preparation and/or review of plans, specifications and cost estimates for projects installing ITS facilities.

CORE COMPETENCIES:

As an Elec Eng Technician 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.

- Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- 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, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, 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, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, 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. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)
- Commitment/Results Oriented:** Dedicated to public service and strives for excellence and customer satisfaction. Ensures results in their organization. (Safety, Equity, Climate Action, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, People First, Pride, Stewardship)

TYPICAL DUTIES:

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

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

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| 30% | E | Provide journey level support to Project Development and Project Delivery / Construction for projects that include ITS facilities, including but not limited to the following: Prepares and receives orders for State Furnished Materials, prepares, constructs and installs state furnished ITS field equipment; Prepares plans, specifications, and estimates for various ITS field element installations. This includes performing independent field investigations, plotting preliminary site data, securing information from catalogs and/or the internet, preparing complete design/contract drawings, determining quantities and cost estimates, and developing specifications; Provides technical support to construction personnel including: inspection, installation, and initial activation of complex electrical and electronic equipment related to the district's ITS, TMC, and FEN. |
| 20% | E | Provide electronic, network, telecommunications, electrical and mechanical systems support to the District's Intelligent Transportation System (ITS) Field Element Network (FEN) associated with the TMC at a journey level. Duties include the layout, installation, configuration, programming, operation 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; CCTV highway surveillance field elements; VDS field elements; HAR field elements; CMS field elements; RWIS field elements; Field element uninterruptible power systems. |
| 20% | 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; 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. |
| 20% | 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 and maintenance of the following complex TMC component systems: Closed Circuit Television (CCTV) highway surveillance system; Vehicle Detection Station (VDS) system; Highway Advisory Radio (HAR) system; Changeable Message Sign (CMS) system; Roadway Weather Information System (RWIS); Automated Safety Warning (ASW) system; Video and audio switching and monitoring system; TMC cable television system; TMC room control system; TMC telecommunications system; TMC electrical power system. |
| 5% | E | Attend training courses and staff/safety meetings. |
| 5% | M | Performs general office duties and maintains office and field equipment. |

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

None.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Should have knowledge of the following: 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 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; 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.

ADA Notice

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POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

Should have the ability to: Inspect the installation and operation of highway ITS components and recommend revisions; Read and understand highway plans, drawings, and field data which are related to highway ITS and traffic control devices; 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; Assist in the preparation of plans, cost estimates, and specifications for ITS projects; Inspect and oversee ITS installations and determine if the product meets specification requirements for functionality and public safety; Implement effective ITS maintenance procedures 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; Prepare as-built plans and document field element network using CADD; 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 moral 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 Operations and Maintenance 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.

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

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

SUPERVISOR (Print)

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| SUPERVISOR (Signature) | DATE |
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