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CLASSIFICATION TITLE Transportation Engineer Tech	OFFICE/BRANCH/SECTION North Region / Office of Surveyors
WORKING TITLE Transportation Engineering Technician	POSITION NUMBER 903-201-3175-XXX
	EFFECTIVE DATE

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 NRPD, Transportation Surveyor Party Chief, and may receive direction from a Transportation Surveyor (Lead Worker), incumbents perform a wide variety of nonprofessional land surveying work in either an office or field setting. As incumbents progress in experience, they will be assigned more difficult work. Travel to project sites will be required. Possession of a valid California Driver's License is required when operating a state owned or leased vehicle.

CORE COMPETENCIES:

As a Transportation Engineer Tech, 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.

- **Learning on the Fly:** Learns quickly, is open to change, experiments, and is flexible. (Safety First - Innovation)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Cultivate Excellence - Equity)
- **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, Strengthen Stewardship and Drive Efficiency - Engagement, Integrity)
- **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. (Strengthen Stewardship and Drive Efficiency - Engagement, Innovation)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Engagement)
- **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. (Advance Equity and Livability in all Communities -)
- **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 - 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. (Safety First - Equity, Integrity)
- **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. (Enhance and Connect the Multimodal Transportation Network - Innovation)

TYPICAL DUTIES:

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

POSITION DUTY STATEMENT

PM-0924 (REV 02/2021)

45%	E	Incumbent assists the Transportation Surveyor / Party Chief or Transportation Surveyor / Lead worker in the reconnaissance, planning and execution of assigned survey fieldwork. Incumbent shall be effective in organizing and using work tools and time, in caring for equipment and materials and in following good work practices for vehicle and personal safety. The Incumbent shall follow good work practices operating and maintaining all precision survey instruments used by the survey crew, i.e., the digital level, the Total Station instrument and its data collector, GPS receivers, and all associated cabling, batteries, etc. The Incumbent shall prepare the data collector for different operations and correctly enter the data coding in accordance with recognized Caltrans and Regional practices and procedures, precisely set all observation targets and accurately report all height measurements, etc. Incumbent must be able to determine the most appropriate terrain and topographic points to be surveyed on design data surveys and must know how to properly operate a prism pole during observations on all types of surveys, i.e., Land Net surveys, Construction Surveys, Utility surveys, etc. Incumbent shall accurately communicate to the Instrument man or data collector operator the description and character of each observed point and the height of the prism pole. The incumbent shall be able to perform all calculations incidental to all construction staking, i.e., slope staking, bank plugs, finish grade, string line, etc., and determine the most appropriate location for any construction reference stakes to be set, the most appropriate equipment to be utilized, the acceptable methods and procedure to use, accurately, legibly and neatly mark all stake cards or stakes (lath), and document all staking performed.
25%	E	The Incumbent shall set or recover and tie survey control, land net or R/W monuments in accordance with Caltrans and Regional practices and procedures and provide complete, accurate, neat and well organized documentation using Caltrans and Regional note forms, i.e., Survey Monument control sketches, Survey Control and Land Net Schema, Corner records, Construction Staking diagrams, etc.
15%	E	The Incumbent shall set out traffic signs and perform traffic control and lookout duties in accordance with Chapter 2 of the Caltrans Surveys Manual and the Caltrans Safety Manual. Incumbent shall clear brush and tree limbs, as permitted and needed using hand tools.
10%	E	The Incumbent shall properly operate the survey crew's field computer and the programs supplied for it, including the accurate and effective review and editing of survey observation data. Incumbent shall have the ability to transfer needed survey data to and from the Total Station data collector (Survey Controller) and to and from data transfer medians or storage devices. Incumbent shall be required to review and edit survey control data and coding, computing field closures and adjustments, review and edit terrain and topographic data and coding to assure accuracy and completeness.
5%	M	Incumbent shall assist in maintaining equipment, material inventory and determine equipment maintenance and replacement needs and any materials needed by survey crew.

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 or act in a lead worker capacity.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of: Fundamental surveying, mathematics and basic science as applied to surveying; methods of precise survey measuring; use and adjustment of precision surveying instruments; procedures; equipment and materials used in surveying, including conventional and state of the art; mapping and drafting techniques; mathematics and procedures used in plane surveying; computer applications and usage; Code of Safe Surveying Practices.

Ability to: Perform the less complex nonprofessional field and office surveying work; make precise survey measurements; make and interpret the less difficult survey calculations; research, analyze, check, and adjust survey data; research and compile evidence and documentation for boundary determination; perform mapping and drafting; analyze situations accurately and take effective action; prepare clear and concise notes and correspondence; operate precise surveying instruments (conventional and state of the art); establish and maintain friendly, business-like relations with those contacted in the course of the work; communicate effectively. Effectively organize time caring for equipment, work tools and materials; follow good work practices for vehicle maintenance and personal safety. Follow good work practices operating and maintaining all precision survey instruments used by the survey crew, such as the digital level, the Total Station instrument and its data collector, GPS receivers and all associated cabling and batteries.

Analytical Requirements: Must be capable of understanding transportation-engineering problems related to land surveying; must

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POSITION DUTY STATEMENT

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have a solid understanding of Geometry and Trigonometry; must understand conventional calculations and calculations performed by computer applications related to land surveying activities, i.e. traverse calculations, digital leveling, etc. Must be able to obtain and analyze information from field survey notes and data collection tools; using and analyzing this information to make sure the information is accurate and meets Caltrans standards. Must be familiar with safe field practices.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

A Transportation Engineering Technician must be responsible for the accuracy and completeness of the survey work that was subject to his/her decisions. Errors and omissions in survey data could require costly returns to the job site for corrections and adversely affect project delivery. Errors in construction stakes could lead to costly changes.

PUBLIC AND INTERNAL CONTACTS

A Transportation Engineering Technician on a survey crew deals with the traveling public during signing and traffic control operations on the highway. A Transportation Engineering Technician has contact with property owners at field locations and redirects all inquiries to the Party Chief, requests information from other departments as directed by the Party Chief and has contact with other governmental agencies and the public.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

This position requires the use of heavy-duty work clothes and safety boots. Manual labor can be expected to be intense. Position requires using cutting tools to clear brush, which can be dense and could include poison oak. Survey locations are often set in tick infested terrain. Incumbent can expect to drive survey stakes and markers with sledgehammers for extended periods. Extensive walking, often over steep and uneven terrain, while transporting stakes, supplies, and equipment is necessary. The incumbent can expect to work under very noisy conditions and is required to be tolerant of working within very close range of high-speed traffic and heavy equipment.

WORK ENVIRONMENT

Incumbent must be able to travel to project locations away from their home requiring overnight travel; must be able to work overtime when needed; must be able to work on foot near heavy traffic; must be able to work in extreme weather conditions including wet, dusty and dirty environments; must be able to drive any type of vehicle requiring a Class "C" license in heavy freeway and highway traffic.

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

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