

**POSITION DUTY STATEMENT**

DOT PM-0924 (REV 08/2024)

CLASSIFICATION TITLE <b>Materials and Research Engineering Associate (Specialist)</b>	OFFICE/BRANCH/SECTION DES/GS/OGS/FTI	
WORKING TITLE Materials Research and Engineering Associate	POSITION NUMBER 559-316-3381-xxx	REVISION DATE 11/18/2024

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 supervision of a Senior Transportation Engineer (Supervisor) or guidance from a Transportation Engineer (Civil) functioning in a lead capacity, the Materials Research and Engineering Associate (MREA) conducts Cone Penetrometer Testing (CPT) in a lead worker role and performs other geotechnical instrumentation and foundation testing for transportation projects. Duties may include Assistant Radiation Safety Officer (ARSO) or Radiation Safety Officer (RSO) responsibilities. The primary responsibilities of this position include the safe, timely and accurate performance of geotechnical instrumentation and foundation testing, implementation of solutions for technical issues, coordination of testing with geotechnical professionals and Structure Construction field personnel, and the performance of duties as part of a team or independently, as necessary. Extensive travel throughout the state is a requirement of this position. Safely working with sealed radioactive sources is a requirement of this position. Possession of a current and valid Class A Commercial Driver License within 3 months of appointment to the MREA position is required.

**CORE COMPETENCIES:**

As a Materials and Research Engineering Associate (Specialist), 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. (Cultivate Excellence - Integrity)
- **Dealing with Ambiguity (Risk)**: Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety First - Engagement)
- **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 - Innovation)
- **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 - Engagement)
- **Teamwork/Partnership**: Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Integrity)
- **Customer Focus**: Considers, prioritizes, and takes action on the needs of both internal and external customers. (Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network - Engagement, Integrity)
- **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)
- **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. (Cultivate Excellence - 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. (Safety First, Cultivate Excellence - Engagement, Integrity)

**TYPICAL DUTIES:**

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

**ADA Notice**

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40%	E	Perform Cone Penetrometer Testing, Radiation Safety Officer duties, deep foundation non-destructive testing, pile load testing and geotechnical instrumentation to determine pile integrity, pile capacity, subsurface conditions, and other parameters of engineering interest. Work includes cone penetrometer testing, pile load test, gamma- gamma logging, sonic caliper logging, shaft inspection, pile dynamic analysis, cone penetration test, slope inclinometer and others. The work occurs at project and construction sites throughout the State of California.
30%	E	Transport equipment and supplies to/from project sites, prepare site for testing, set up test equipment, take accurate field notes and collect test data. Communicate with the Geoprosessionals, Construction personnel, and Contractors' representatives as necessary to carry out these duties.
15%	E	Apply knowledge of computers and commercially available data acquisition software to collect test data and transmit test data from the field to home office.
15%	M	Maintain equipment/supplies/facilities used for foundation testing and instrumentation. Assist in conducting research activities, acquisitions, safety meetings, or other duties as required.

<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. This is not a supervisory position. The incumbent may act as a lead worker to facilitate the activities of fellow TET's as required by the needs of the projects and the office and to assure unit compliance with the Radiation Safety program.

**KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**

Ability and willingness to travel to and work at project and construction sites throughout California is required. The travel requirement is extensive, often overnight and for several consecutive days, depending upon needs of projects and the Department. Testing is typically conducted away from the home office and in construction or lane closure work zones. Possession of a valid California Class A Commercial Drivers License and experience and endorsement for manual transmission and tractor-trailer combinations is required.

Position requires testing for controlled substances and current medical certification.

Ability and willingness to work extensively with sealed radioactive sources. Must pass nuclear operator certification test and Radiation Safety Officer (40 hour) course.

Certification and ability to operate a forklift is desirable.

Ability to work from heights and use of fall protection equipment is required.

Ability to independently apply sound judgment in test situations and to analyze factors capable of affecting test results is required.

Knowledge of and ability to use computers is required.

Knowledge of or ability to learn aspects of structure foundations, geotechnical instrumentation, test equipment and procedures, and data acquisition devices.

Ability to comprehend and analyze specification requirements and test methods relative to foundation testing and instrumentation, including recognizing deficiencies, and assist in developing workable and effective specifications and test methods. Must be able to conduct tests accurately, understand the significance and application of test results, recognize potential field issues, and assess their probable effects on the test program.

Ability to effectively communicate both verbally and in writing. Must be able to clearly and audibly communicate at construction sites and able to perform crane signals. Must be able to take notes and fill out field documentation. Ability to establish and maintain good and professional working relationships with individuals and groups from the Department, Contractors, other governmental agencies, and private consulting firms on projects. Must be familiar and able to follow the Department policies and procedures.

**RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR**

This position requires effective and timely response in all aspects of testing. Errors in judgment and/or decisions or excessive delays in rendering decisions could affect public and employee safety, cause project delays with associated costs, or result in tort liability for the Department. Errors may also represent a significant safety hazard to the employee, coworkers, or the public.

**PUBLIC AND INTERNAL CONTACTS**

The incumbent routinely contacts other Caltrans personnel, contractors and industry representatives concerning foundation testing and instrumentation, verbally and in written, as needed to perform assignments. The incumbent is required to make periodic safety meetings in the field or at designated safety meetings. Must be able to clearly communicate and direct operations in oral and written forms and utilizing signaling under active field construction sites.

As a representative of the Department and the State of California, the incumbent is expected to maintain fair, impartial and effective relationship with clients, and conduct himself or herself in a professional and courteous manner at all times.

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### PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent is required to travel to and work in active field construction sites, walk across uneven terrain, climb into and out of excavations, and direct field operations. Must be able to move test equipment/materials/supplies that may require lifting up to 60 lbs. The incumbent may be required to sit for long periods of time using a keyboard and video display terminal. The incumbent is required to develop and maintain cooperative working relationship and responds appropriately to various including difficult situations. Must behave in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service. Must value a cultural diversity and other individual differences in workforce.

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### WORK ENVIRONMENT

While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public. DES employees may be given temporary assignments on DES projects throughout the State as workload demands.

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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.)

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.

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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