STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Materials and Research Engineering Associate (Specialist)	D8/Construction/Barstow Field Acceptance Lab	
WORKING TITLE	POSITION NUMBER	REVISION DATE
MREA - Lab and Field Specialist	908-500-3381-003	10/28/2026

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

GENERAL STATEMENT:

Under the general direction of the Senior Transportation Engineer, Supervisor, the Materials and Research Engineering Associate (Specialist) (MREA) performs a wide variety of engineering work in calibrations, testing and analysis on soils, aggregates, asphalt concrete, binder, steel, concrete samples and Concrete Masonry Units (CMU) at the Barstow Field Acceptance Lab and in the field. The MREA performs testing on a variety of materials associated with the construction of roadways and concrete structures as part of the overall Caltrans transportation system. The MREA works closely with the Senior Transportation Engineer to provide clear, effective and timely technical information to clients based on laboratory testing results. The MREA prepares daily reports on quality assurance testing for various sources of materials and is responsible for reporting these results as appropriate. The MREA coordinates the work of lab personnel to obtain test results on sampled materials in a timely fashion. The MREA is instrumental in obtaining and maintaining American Association of State Highway and Transportation Officials (AASHTO) lab accreditation and ensures compliance with required Quality Management Systems. The MREA will be required to be certified in California Test (CT) and American Concrete Institute (ACI) test methods for the AASHTO Accreditation Program. The incumbent will be assigned work based on Divisional and/or Departmental needs. Project sites vary throughout San Bernardino/Riverside Counties and in various environments; occasional travel may be required. Possession of a valid driver's license is required when operating a State owned or leased vehicle.

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. (Safety, Equity - Innovation, Pride)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety - Innovation, Integrity, People First, Stewardship)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Employee Excellence - Innovation, Integrity, 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. (Employee Excellence - Collaboration, Innovation, Integrity, Stewardship)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Equity, Employee Excellence - Equity, Innovation, Stewardship)
- **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. (Safety, Climate Action, Prosperity - Equity, Pride)
- **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. (Equity - Collaboration, Equity, Innovation, Stewardship)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Employee Excellence - Innovation, Integrity, Pride, Stewardship)
- **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. (Employee Excellence - Integrity, Stewardship)

TYPICAL DUTIES:

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

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40%	E	Perform physical laboratory and field testing in accordance with the California Test Methods (CTM), American Association of State Highway and Transportation Officials (AASHTO), American Society for Testing Materials (ASTM), and Uniform Building Code (UBC) on highway construction materials, including but not limited to hot mix asphalt, Portland cement concrete, polyester concrete, aggregate, soil, aggregate base, and lean concrete base, etc. Testing is performed at the construction job site, contractor's material production plants, and field materials laboratory. Create and submit accurate and timely testing reports to Resident Engineers to ensure quality assurance and acceptance of materials. Perform plant inspections, obtain and gather samples of aggregates, Hot Mix Asphalt (HMA), binder oil, and cement from the plants and submit accurate plant inspection reports, diaries, and testing reports in a timely manner to ensure quality assurance and acceptance of materials. Test the quality and suitability of engineering construction and other materials; do research work on engineering construction and other materials; evaluate physical and environmental impact assessments and take effective action; prepare reports and dictate correspondence.
30%	E	Obtain and maintain all required certifications and competencies for various disciplines, such as California Test Methods (CTM), Caltrans Lab Procedures (LP), AASHTO, ASTM, and UBC as required. Responsible for quality control and ensure all testing and sampling is conducted in a manner that is consistent with the Laboratory Quality System Manual (LQSM) and the applicable Department's Safety Manual rules and regulations. Review testing requests for field material testing and plant inspections from Resident Engineers and schedule tests and plant inspections accordingly with Caltrans testers and consultant testers. Review and assure tests performed by State testers and consultants' testers are accurate. Respond to Resident Engineers and field inspectors regarding testing related discussions and questions. Participate in Caltrans and AASHTO Reference Samples program and on-site assessments. Perform calibration of testing equipment in the laboratory and field in accordance with Caltrans Independent Assurance Manual. Responsible for training new and rotating testers for material testing and plant inspections. Schedule consultant testers, review diaries, hours, and test results as needed.
20%	E	Produce weekly and monthly lab testing performance and reports. Enter and publish data in DIME (Data Interchange for Materials Engineering). Prepare reports, charts, graphics, and documents for electronic filing and investigative reports. Prepare and update the Laboratory Quality Management System (QMS) and Caltrans Laboratory Accreditation Manual (CLAM). Review and maintain tester's training records and certifications. Communicate and coordinate activities and safety concerns of lab and testers. Review work processes to ensure quality and project deliverables meet all required standards and expectations. Share technical expertise with others, keep up to date with new technological changes and test methods.
10%	M	Attend pre-construction and pre-paving meetings and conferences. Monitor equipment, supplies, and inventory at the laboratory. Notify supervisor of non-performing equipment and plan for repairs and maintenance as necessary. Assist with procurement of supplies, tools, and equipment. Perform other duties as assigned by management to support the divisions operations and business needs.

[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
Does not supervise. May act as backup for the Senior Transportation Engineer, act as a lead over technicians, student assistants, and others as needed.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS
Must have knowledge of California Test Methods and AASHTO test methods, materials, tools, and equipment used in inspecting and testing a wide variety of construction and other materials; physical environmental impact assessment evaluations and mitigation processes, physical properties and uses of engineering construction materials, fabrication of construction materials. Ability to develop new technical skills and knowledge related to tasks associated with the lab and field work. Must be able to utilize mathematics to make calculations using percentages or ratios and plot data to evaluate test results. Must have the ability to interpret plans and specifications, analyze and check all necessary test reports on materials incorporated in the work for conformity to applicable specifications.

Must have the ability to communicate effectively both orally and in writing, and must recognize the importance of working as a

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team. Must have the ability to establish effective communication channels with his/her supervisor, Caltrans Headquarters, District personnel and the public. Must have knowledge of basic computer applications such as Microsoft Outlook, Microsoft Excel, FileMaker Pro, Microsoft Word and Caltrans custom-made applications.

Incumbent must have the ability to establish and maintain good and professional working relationships with other Department units, industry and the contractor on Department projects. Incumbent must be familiar and able to follow the Department policies and procedures.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The MREA is directly responsible for the results of the tests performed, the calculations and reports prepared, and the acceptance or rejection of the materials tested. Wrong decisions have the potential of jeopardizing the integrity of structures, which in turn could affect safety, contract claims, and contract schedule. Release of confidential material could result in legal action and loss of integrity of the office and Department.

The MREA is responsible for personal and team safety as outlined in the laboratory safety manual and the safe practices and standards of the tests being conducted and the equipment involved. Failure to act in accordance with these standards could result in personal injury, injury to others or destruction of state property.

PUBLIC AND INTERNAL CONTACTS

Maintain close communication with supervisor and other inspection offices. Has daily and frequent contact with fellow branch office, district and HQ TransLab personnel regarding test results and inspection reports. 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 themselves in a professional and courteous manner at all times.

Maintain cordial and cooperative relations with others and communicate effectively, both orally and in writing, within and outside the Department of Transportation organizations.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Physical activities vary and may be for a lengthy period of time. May be required to sit using a keyboard and video display terminal and entering and auditing data. While working in the laboratory, may be required to stand for extended periods of time to perform materials testing in and around test equipment. Requires manual dexterity to operate testing equipment and handle materials. Incumbent will be required to be tested and fitted to wear a respirator while working in the laboratory (capping compound). May be required to lift, push, and move test materials and/or equipment that require lifting up to 50 lbs with assistance. Incumbent with assistance should be able to handle concrete cylinders weighing 35 lbs multiple times. It is anticipated that more than thirty cylinders will be processed in a single shift. Multiple lifting of Blocks and Reinforcing Steel Members on a daily basis is anticipated. May be required to travel to Districts to train laboratory personnel on specific test methods. When working in Districts, may be required to stand for long periods of time; pull, push, bend, stoop and squat to examine testing equipment; maintain mental awareness and physical agility when working in the proximity of laboratory machinery. May be required to perform field duties of collecting roadway profiles with the Inertial Profiler and pavement studies with the Falling Weight Deflectometer. Incumbent must be able to travel using a car; vehicles will vary from passenger cars to 3/4-ton pickup trucks. Incumbent will be required to develop and maintain cooperative working relationship and respond appropriately to difficult situations. Incumbent will be required to behave in a fair and ethical manner toward others and demonstrates a sense of responsibility and commitment to public service. The incumbent will be required to value cultural diversity and other individual differences in the workforce and consider and respond appropriately to the needs, feelings, and capabilities of different people in different situations.

WORK ENVIRONMENT

Most of the incumbent’s workday will be in the laboratory, where there is exposure to extreme heat, chemicals, odors, dust and noise from laboratory testing equipment. For some part of each day, incumbent will work in a climate-controlled office. Both environments are under artificial lighting. May occasionally be required to travel and work outdoors, and may be exposed to dirt, noise, uneven surfaces, and/or extreme heat or cold.
Working hours will be set sometime between 6:00 a.m. and 6:00 p.m. May be required to work nights, weekends and split shifts depending on the project requirements. Vacations may be restricted during peak times.
The incumbent will be assigned work based on Divisional and/or Departmental needs. Project sites vary throughout San Bernardino/Riverside Counties and in various environments; occasional travel may be required. Possession of a valid driver’s license is required when operating a State owned or leased vehicle.

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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.

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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