

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION DES/METS/OCL/CMTB	
WORKING TITLE Transportation Materials Engineer	POSITION NUMBER 559-320-3135-XXX	REVISION DATE 02/11/2022

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 direction of a Senior Bridge Engineer or Senior Transportation Engineer, the Transportation Engineer will perform the duties of a Materials Engineering and Testing Services Materials Engineer (METS ME) within METS. The Primary function of the METS ME is to ensure the materials and products used in California Department of Transportation (Department) construction projects comply with contract requirements and provide recommendations and decisions using engineering judgment and principals.

The METS ME must have fundamental understanding of materials deterioration mechanisms and durability of construction materials. Whether assigned to directly support projects or within a materials laboratory, the METS ME has a critical role in providing engineering recommendations, analyzing new materials, reviewing and interpreting test results, and working as a member of a team comprised of other engineers, technicians and inspectors. The METS ME communicates effectively, verbally and in writing. The METS ME may be asked to provide clear and timely technical recommendations regarding construction materials to METS customers. The METS ME may be required to travel at times to accomplish source inspection and quality assurance responsibilities on projects. The METS ME works to anticipate and resolve any issues associated with construction materials with the overall goal of maintaining consistency of quality standards while minimizing the impact on project schedule and cost. Additionally, the METS ME may serve as the point of contact or act as a lead engineer in the administration of the quality management system for a specific laboratory or Branch by resolving materials issues by establishing and cultivating relationships with our customers and partners within the Department.

As part of your employment with DES there is a mandatory TE-Civil Professional Development Rotation Program that applies to all permanent full-time TE Civils hired after January 1 2017. Temporary relocation more than 50 miles from your permanent unit may be necessary for rotation assignments.

CORE COMPETENCIES:

As a Transportation Engineer (Civil), 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. (Cultivate Excellence - Innovation)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Cultivate Excellence - Engagement, Innovation)
- **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. (Cultivate Excellence - Engagement)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Engagement, Innovation)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Strengthen Stewardship and Drive Efficiency - 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. (Strengthen Stewardship and Drive Efficiency - Integrity)

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- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Cultivate Excellence - Engagement)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	
50% E	<ul style="list-style-type: none"> • Serves as a point of contact between METS and its customers for projects or a subject matter within assigned area(s) of expertise. In this capacity, keeps up to date on all structural and roadway materials issues on projects or subject matter expertise of specific laboratory, • Visits project and/or fabrication sites in coordination with onsite staff which may require overnight travel, • Administers meetings with stakeholders (construction, design, maintenance, laboratory personnel, and materials inspection, fabrication and contractor personnel) to identify materials-related issues and recommends solutions consistent with project documents and internal practices and procedures, • Ensures reviews of materials-related project documents including, but not limited to, test results, inspection reports, and quality control plans, are thorough and completed in a timely manner, • Prepares reports transmitting technical recommendations for projects or products, Non-Conformance Reports (NCRs), and other summary reports as needed, • Performs risk assessment to provide guidance on the level of quality assurance inspection necessary for construction materials, • Evaluates quality control activities for quality assurance purposes and to ensure compliance with project and office objectives, • Analyzes data and provides recommendations regarding field investigations for a given situation and may lead teams to carry out structures or roadway investigations.
25% E	<ul style="list-style-type: none"> • Contribute to maintaining and improving Quality Management Systems under the direction of a Quality Manager, • Assists laboratory and branch Quality Managers (QM) in technical matters, and ensures compliance with appropriate quality management systems for the maintenance of accreditations, • Assists in accreditation and qualification activities for and prepares and maintains accurate records and files on technicians and laboratories in accordance with Caltrans Independent Assurance Manual and FHWA requirements, • Ensures compliance with Caltrans requirements, and maintains and updates the Authorized Laboratories list with field visits and submittal review as identified by the branch chief. • Oversees and administers the Department's Authorized Material Lists (AML), by developing policies and procedures for creating, updating, or deleting AMLs and reviewing AMLs, corresponding authorization criteria, and referenced construction specifications for clarity and consistency. • Provide oversight of various materials related internal and external functions/suppliers by audit of practices and/or facilities. • Document test performance issues, review and recommend improvements to materials test methods and specifications, • Participates in Technical Committees.
20% E	<ul style="list-style-type: none"> • Presents information regarding METS practices to other Department offices, • Develops quarterly and annual forecast reports, • Develop and prepare work load resource estimates based on project type, project location (i.e., District), and project costs using PRSM and Vision software. • Monitor project resources to determine if additional resources are needed for METS cost centers.
5% M	<ul style="list-style-type: none"> • Completes other duties as assigned by the Branch Senior, which may include assisting the supervisor in planning assignments for the branch staff and Technical Committee work.

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

When required by the Branch Chief, the Engineer may act as the lead person of the Branch or for assigned projects. This responsibility is task-oriented and does not include complete personnel responsibilities.

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KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Employee must have knowledge of:

- Construction processes and basic design principles,
- The materials used in projects including steel, precast concrete, coatings, roadway materials, and structural fasteners.
- Education in the physics and chemistry associated with materials used in transportation projects.
- Industry practices for fabrication of structural and roadway components,
- Test methods, inspection, sampling, and reporting procedures for structural and roadway components,
- Safe work practices.

Employee must have the ability to:

- Interpret plans, specifications, and shop drawings,
- Communicate clearly and efficiently,
- Represent the Branch in public or in Department meetings,
- Occasionally act in place for the Branch Chief,
- Perform basic computer applications such as assessing databases and utilizing Microsoft Office software.

Employee must be able to perform basic engineering calculations related to the inspection and testing of the materials used in Caltrans projects, and be able to analyze and check all necessary test reports on materials incorporated in the work for conformity to applicable specifications. Possession of a valid certificate of registration as a civil engineer issued by the California State Board of Registration for Professional Engineers is desirable.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The METS ME is directly responsible for recommendations for acceptance or rejection of inspected materials, specifications and to laboratories and testers. Decisions must be clear and concise. Inappropriate decisions may have the potential of jeopardizing the integrity of structures and roadways which could result in contract claims and delays to project delivery.

In addition, the employee is responsible for personal and team safety as outlined in the Caltrans Safety Manual and the safe practices and standard of the tests being conducted and the equipment involved. Failure to act in accordance with these standards could result in personal injury, injury to other or destruction of state property.

PUBLIC AND INTERNAL CONTACTS

The METS ME has considerable contact by telephone, email, and person-to-person with manufacturers, vendors, contractors, and Caltrans construction and administrative personnel. This includes daily and frequent contact with other Branch offices, Headquarters, District labs and Translab personnel regarding testing results and inspection reports.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Employee may be required to sustain the mental activity needed for writing, problem solving, analysis and reasoning; will be required to develop and maintain cooperative working relationships and respond appropriately to difficult situations. Employee may be required to drive a State motor vehicle. Employee may occasionally be required to move equipment and test materials weighing up to 50 lbs.

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.)

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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