

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Materials & Research Engineering Associate	Central Region Construction 501, District #906	
WORKING TITLE	POSITION NUMBER	EFFECTIVE DATE
Materials & Research Engineer/Field Lab	906-501-3381-XXX	

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 general direction of the Resident Engineer, a Transportation Engineer, and under the supervision of the Construction Engineer, a Senior Transportation Engineer, incumbent performs difficult materials and research engineering work relating to transportation construction. Duties include but are not limited to:

TYPICAL DUTIES:

Percentage		Job Description
Essential (E)/Marginal (M) ¹		
50%	E	Oversee the operation of multiple construction labs, including but not limited to the following: Storage and minor repair of nuclear gauges; calibration and maintenance of test equipment; and scheduling of personnel for testing. Perform the duties of the Alternate Radiation Safety Officer, which requires certification as a Radiation Safety Officer. Review and provide comments on QC/QA plans, mix designs submittals and other submittals as required. Train other personnel in the requirements of sampling and testing of construction materials for all phases of structure and roadway construction and assist them to become certified.
25%	E	Performs and directs the sampling and testing of materials using ASTM International (formerly known as American Society for Testing and Materials) and AASHTO (American Association of State Highway and Transportation Officials) testing methods. The sampling and testing include, but is not limited to the following: Sand Equivalent; Cleanness Value; Gradation Sieve Analysis; Compaction with nuclear gauge for soil and asphalt concrete; Optimum Bitumen Content; and Concrete Modulus of Rupture (concrete beam). Collects data, sample construction materials and perform materials testing per standard procedures.
10%	E	Perform Asphalt concrete and Portland cement concrete plant inspection.
5%	E	Perform inspections to ensure contract compliance with plans and specification. Inspect work as to the quantity, quality, and methodology. Records Manpower and equipment usage along with pertinent details. Prepares documentation of the work performed including calculations of completed work for payment; monitor Contractor's operations to ensure compliance with safety.
5%	E	Train construction personnel and others, as needed, in California Test Methods for readiness in obtaining certification. Ensure that construction field personnel performing test methods are certified.
5%	E	Keep accurate and organized records of sampling, testing, equipment and reports.

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

Serves as the lead person for the lab field and office staff. Supervisory duties are the responsibility of the Senior Construction Engineer. Normally this position does not supervise, however, the incumbent may be called upon to act in absence of the supervisor for a short duration of time. Position has responsibility for functional guidance in training and assisting less experienced employees.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Must have knowledge of methods, materials, tools and equipment used in highway and bridge construction; methods of

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proportioning and handling Portland cement concrete and bituminous surfacing material and the handling of asphaltic oils and emulsions. Ability to make accurate mathematical calculations; sound decisions; implement contract plans and specifications; evaluate work methods and traffic conditions to assure safety; organize/arrange data to produce effective work products without repeated direction; possess interpersonal skills; ability to read and write English at a level required for successful job performance; inspect construction work and enforce compliance with plans and specifications; analyze situations accurately and take effective action; computer skills; and possess interpersonal skills necessary to be an effective team member.

The employee must be able to understand and follow instructions provided, both oral and written, analyze plans and specification accurately, and take effective action. The employee must have valid Certification in California Testing Methods 105, 125, 201, 202, 216, 217, 226, 227, 231, 370, 375, 379, 382, 504, 518, 523, 533, 539, 540 and be certified as a Radiation Safety Officer.

Must have knowledge of and understand California Test Method 106, 111, 206, 207, 208, 229, 301, 304, 308, 310, 367, 368, 521.

Must have letter of proficiency in AASHTO (American Association of State Highway & Transportation Officials): T27, T176, T308, T329.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Failure to understand and failure to incorporate appropriate standards requirements and policies into work product may result in expensive waste of time and materials, cause additional work and project delays, and could result in excessive construction contract claims. Acceptance or rejection of a contractor's materials and work is usually based on results of materials test. It is imperative that testes are performed in accordance with accepted procedures. Errors in materials testing could cause the contractor undue cost and delay. Highway design is dependent on materials testing and error in testing and interpretation of test results increases construction costs, cause defective highways, possible injury and/or damage, and could potentially expose the State to liability issues.

Incumbent is responsible for his/her actions, decisions, quality of work, and proper use of State time, equipment and materials. Improper performance of duties and/or failure to adhere to established policies, procedures and guidelines could lead to adverse action and possible termination.

PUBLIC AND INTERNAL CONTACTS

Incumbent must be able to communicate effectively with others including Department staff, technical professional level staff of outside agencies, contractor's personnel and members of the public regarding construction projects. Has contact with private contractors, Resident Engineers and their staff, and other branches, both District and Headquarters. Good communicative skills are essential in carry out the duties.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Must posses the ability to work on uneven ground, climb, lift, carry, bend, squat, kneel, crouch, reach, pull, push, grasp, sit, stoop, crawl, and repetitive use of extremities. Must be able to transport variety of objects that are less or equal to 40 pounds. Hard hat and safety vest or approved safety shirt must be worn at all times in the field, no exceptions. May be required to sit for long periods of time. May be required to stand for long periods of time. Ability to work in lab conditions. Ability to work indoors and outdoors. Ability to work under artificial light.

Night work, overtime and/or flexible hours may be required. Must be able to organize and prioritize. Must be able to concentrate, formulate effective strategies, be multi-tasked, adapt to changes in priorities, and complete complex task or projects with short notice. Ability to resolve emotionally charged issues reasonably and diplomatically. Must be able to develop and maintain cooperative working relationships. Vacations may be restricted during peak times. Use of computers and other various office equipment is required. The employee must be able to understand and follow instructions provided, both oral and written, analyze plans and specifications accurately and take effective action. The employee must have the ability to lead and to work under pressure. The employee must have the ability to get certified in all of the materials tests used.

WORK ENVIRONMENT

Job will have exposure to chemicals, equipment, machinery, heat, cold, dust, gas, fumes, dirt, lab equipment, construction materials, outdoor conditions, indoor conditions, humidity, and high decibels of noise. Incumbent will have exposure to lab conditions, which may not be climate controlled. Hard hat and safety vest or approved safety shirt must be worn at all times in the field, no exceptions. While at the Construction office employees will normally work in a climate-controlled office under artificial light; however, due to periodic problem with the heating and air conditioning, the building temperature may fluctuate. Workload may subject employee to frequent changes of shift, frequent changes of work hours and workdays, and geographic transfer. Travel is required. Must have a valid California Drivers License. Vacations may be restricted during peak times.

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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
