

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION DES/GS/OGDPP	
WORKING TITLE Geotechnical Engineer	POSITION NUMBER 559-325-3135-xxx	REVISION DATE 06/23/2025

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

GENERAL STATEMENT:

Under the direction of a Senior Transportation Engineer, the Transportation Engineer (Civil), you are expected to:

Perform quality review and provide technical support to Geotechnical Design offices. Develop and update geotechnical design related standards, and guidelines for the Geotechnical Manual. Develop geotechnical design and analysis tools.

Perform geotechnical investigation and engineering for projects. Work on projects, including planning, design, construction, and operation phases of the State Transportation System, which may require traveling to the Districts and job sites for periods of several days to weeks.

Participate in Geotechnical Services (GS) technical teams and Division of Engineering Service's technical committees.

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.

- **Flexibility and Managing Uncertainty** : Adjusts thinking and behavior in order to adapt to changes in the job and work environment. (Safety, Employee Excellence - Collaboration, Innovation, Integrity, Stewardship)
- **Decision Making**: Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety, Employee Excellence - Innovation, Integrity, Stewardship)
- **Ethics and Integrity**: Demonstrated concern to be perceived as responsible, reliable, and trustworthy. Respects the confidentiality of information or concern shared by others. Honest and forthright. Conforms to accepted standards of conduct. (Safety, Equity, Employee Excellence - Collaboration, 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. (Safety, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, Stewardship)
- **Teamwork and Collaboration**: Sets team structure. Organizes, leads, and facilitates team activities. Promotes team cooperation and encourages participation. Capable of cross functionality and working well with others on a team to achieve personal goals, team goals, and organizational goals. Takes responsibility for individual actions in order to achieve consistent results. (Safety, Equity, Prosperity, Employee Excellence - Collaboration, Equity, Integrity, People First, 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, Employee Excellence - Collaboration, Equity, Innovation, Integrity, Stewardship)
- **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. (Safety, Prosperity, Employee Excellence - Collaboration, Equity, Innovation, Integrity, Stewardship)
- **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, Climate Action, Prosperity, Employee Excellence - Collaboration, Innovation, Integrity, 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. (Safety, Climate Action, Prosperity, Employee Excellence - Collaboration, Innovation, Integrity, Pride, Stewardship)

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TYPICAL DUTIES:

Percentage	Essential (E)/Marginal (M) ¹	Job Description
55%	E	Perform quality review based on the established design standards and guidelines at all phases of project delivery.
15%	E	Develop and maintain geotechnical design modules of the Geotechnical Manual consisting of geotechnical design related standards, guidelines, and details. Develop and maintain geotechnical design and analysis tools. Assist in the development of GS geotechnical design quality management system and policy, including software vetting. Work with the GS technical teams tasked with Geotechnical Manual modules, geotechnical specifications, and design tools.
15%	E	Perform geotechnical engineering for projects, including geotechnical reconnaissance, geotechnical investigation, assigning laboratory test, conducting geotechnical analysis and design, providing recommendations and producing geotechnical reports, assisting on compilation of construction contracts, and construction support. The geotechnical projects include bridge foundations, earth retaining systems, highway embankments, stability of slopes, geotechnical earthquake engineering, emergency response, and ground modification. Participate in Special Funded Projects/Structures Local Assistance, SFP/SLA projects, and projects with alternative contracting methods, including Design Build (D-B) and Construction Manager/General Contractor (CM/GC).
10%	E	Participate in the Division of Engineering Services technical committees, and provide geotechnical support for DES standards and guidances development.
5%	E	Work on special projects assigned by the Supervisor.

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

Supervision is not a requirement of this position but the incumbent may act as a lead worker over employees in the Transportation Engineer (Civil), Engineering Geologist, Transportation Engineering Technician, or Foundation Driller classifications.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

A thorough knowledge of soil mechanics principles; soil and rock classification; laboratory and in-situ soil and rock test principles, and methods; geotechnical investigation and subsurface material sampling techniques and equipment; geotechnical field instrumentation methods and practices; ability to characterize subsurface conditions based on geotechnical investigation, geological mapping, landforms, outcrops, and other features; geotechnical engineering practices including deep and shallow foundations, earth retaining systems, slope stability, ground movement and settlement, geosynthetics, ground modification, and tunneling.

Knowledge of earthwork and geotechnical construction methods, specifications, and quality assurance and quality control practices.

Advanced course work on geotechnical engineering and soil mechanics.

Knowledge of Caltrans project development process, design and construction standards, and maintenance practices.

The ability to acquire additional and new knowledge of geotechnical engineering through additional course work or self-study.

The ability to produce concise, organized, logical, and effective reports and presentations.

The ability to communicate effectively, both in written and oral form.

The ability to work in teams and interact with individuals and groups from the Department, governmental agencies, and private consulting firms.

The ability to work with engineering and office application software.

Perform geotechnical analysis and design in an effective and efficient manner. Diagnose potential geotechnical problems and

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evaluate their probable effects on design options and constructability, and provide viable geotechnical recommendations.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

This position requires effective and timely response in all aspects of preparing and/or reviewing geotechnical design reports for internal-designed or contracted-out projects. Delays in response to requests for services or failure to detect omissions and/or inadequacies in design and recommendations can affect public safety, result in tort liability, and result in contract delays, construction difficulties, wasteful practices and design, and substandard performance of completed work.

PUBLIC AND INTERNAL CONTACTS

This position requires frequent and regular contact with personnel in the Department concerning engineering matters related to in-house developed projects and projects developed by consultants. The incumbent will also have regular communication with engineering consultants, contractors, manufacturers, vendors, local agencies, and other government agency personnel.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

You must be able to work in the field and construction sites, lift and transport heavy equipment and materials, work with exploratory equipment and collect field data, work in the vicinity of large drilling and construction equipment while logging borings. Landslide and undeveloped sites are often rugged and heavily vegetated. Construction site surfaces are often uneven, may have open excavations and may be located on steep slopes. Weather conditions can vary between icy, slippery and wet to hot and dry. You must have the ability to traverse these sites and withstand exposure to the aforementioned environments for long periods of time.

You must be able to periodically travel to the Districts and field sites for periods of several days but occasionally can extend to a few weeks. You may be required to periodically working at night and during weekends.

You must be able to carry and use field engineering equipment, such as hand augers, geotechnical instruments, and core boxes. Other physical requirements of the job include the ability to lift and carry 50 pounds, reach overhead, push or pull, twist, climb, balance, bend, crouch, squat, crawl, and perform fine manipulation. You must be able to hear and see directions, traffic, equipment, and other warnings or hazards to allow you to perform duties safely. Corrected hearing is acceptable. Corrected sight must meet the CA DMV minimum visual acuity requirement. Your night vision must be good for working safely after dark. You may be required to work at night under artificial light.

While in the office, you may be required to sit for long periods of time using a keyboard and video display terminal.

You must perform assigned tasks in a professional, safe, and exacting manner, and comply with existing policies, specifications, rules, work plans, and guidelines.

You must grasp the essence of new information and master new technical and engineering knowledge. You must have the ability to multi-task, adapt to changes in priorities, and complete tasks or projects meeting strict deadlines in short notice.

You must be able to develop and maintain cooperative working relationships, have a positive and friendly attitude, and be willing to learn.

WORK ENVIRONMENT

While at the base of operation, you will work in a climate-controlled office setting under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. In some cases, you will be required to travel and perform fieldwork that will expose you to dirt, dust, sunlight, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork as described in the previous section. You will be required to work around bulky/heavy materials and equipment, and in proximity to vehicles traveling on active highways.

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.

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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