

County of Humboldt Job Specification
ENGINEERING TECHNICIAN I/II
Classification 0322A/B



DEFINITION

Under direct or general supervision, performs a variety of engineering support tasks related to civil or traffic engineering and land surveying assignments in the field and office, including supporting the professional engineering or survey staff by conducting basic traffic studies, survey work, researching engineering topics, preparing basic engineering calculations including estimates and reports for the development and modification of County infrastructure, providing assistance in the development of consultant requests for proposals for professional and/or construction services; provides technical advice to the public; reviews permit requests and plan submittals, issues permits; and performs related duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives immediate (Engineering Technician I) or general (Engineering Technician II) supervision from assigned management/supervisory staff. Exercises no direct supervision of staff.

CLASS CHARACTERISTICS

Engineering Technician I: This is the entry-level classification in the Engineering Technician series. Initially under close supervision, incumbents learn and perform routine work in one or more areas of office engineering, field engineering, surveying, or permit support work. As experience is gained, assignments become more varied, complex, and difficult; close supervision and frequent review of work lessen as an incumbent demonstrates skill to perform the work independently. Positions at this level usually perform most of the duties required of the positions at the Engineering Technician II level but are not expected to function at the same skill level and usually exercise less independent discretion and judgment in matters related to work procedures and methods. Work is usually supervised while in progress and fits an established structure or pattern. Exceptions or changes in procedures are explained in detail as they arise.

Engineering Technician II: This is the journey-level classification in the Engineering Technician series. Positions at this level are distinguished from the Engineering Technician I by the performance of the full range of duties as assigned, working independently, and exercising judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit.

This classification is distinguished from the Senior Engineering Technician in that the latter performs the most complex paraprofessional engineering work assigned to the series, such as acting as survey party chief, and provides technical and functional direction over lower-level staff.

Positions in the Engineering Technician I/II class series are flexibly staffed and positions at the II level are typically filled by advancement from the I level after gaining the knowledge, skill, and

experience which meet the qualifications for, and after demonstrating the ability to perform the work of, the higher-level classification.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

Management reserves the right to add, modify, change, or rescind the work assignment of different positions.

Some duties, knowledge, skills, and abilities may be performed in a learning capacity for entry-level (I Level) positions.

- Performs a variety of basic paraprofessional engineering support work in the design and construction of public works, roads, bridges, drainage, capital improvements projects, and related areas.
- Utilizes Computer Aided Drafting (CAD) and Geographic Information System (GIS) software to draft and modify plot plans, topographic maps, improvement plans, and illustrative graphics, such as charts, illustrations, and graphs for reports, drawings for design manuals, and other projects; prepares or checks engineering reports, specifications, and contract documents.
- Performs basic design, mapping, and drafting duties in connection with streets, storm drains, utilities, and other projects; designs roadway and bridge approaches.
- Performs field, office, and computer-aided studies, including data collection from field equipment and prepares periodic and special reports based on findings from research, studies, and surveys; makes recommendations on findings.
- Prepares or assists in the preparation of and/or interprets specifications, plans, estimates, specifications, and reports pertaining to the construction, maintenance, and operation of a variety of public works, land development, road, facility, and other Capital Improvement Program (CIP) projects; performs construction inspections including subdivision, commercial grading, and roadway, including quality control testing to ensure compliance with applicable plans, specifications, and standards.
- Participates as a member of a survey crew, performing calculations, construction staking and rod, chain, and instrument work.
- Receives and responds to information requests for base maps, parcel maps and improvement plan information, encroachment permits, benchmarks, easements, and other geographical data, soils reports, as-builts, and street improvements; retrieves plans, reports, permits, and files as necessary to comply with requests; performs site reviews; responds to questions and complaints from the public and resolves conflicts between owners, contractors, developers, utility companies, and others.
- Reviews subdivision maps, parcel maps, improvement plans, records of surveys, deeds, descriptions, preliminary title reports, and other private land surveyor data for compliance with design criteria, special conditions, and state, federal, and local laws and ordinances, recommends modifications as needed.
- Implements the County's street naming and addressing policy, including analyzing and reviewing development proposals for compliance, providing direction and recommendations to the development team and applicants, and explaining requirements, policies, and procedures.
- Coordinates review of new and modifications to existing street names and addresses with other County departments, first responders, other government agencies, developers, and other business and community representatives; researches and analyzes GIS and other data; prepares, updates, coordinates review of, and finalizes addressing plans.

- Performs or assists in traffic studies, including accident analysis, channelization, traffic volume, and speed studies; sets traffic counters and conducts manual counts; repairs and maintains traffic equipment; assists the public in answering questions related to traffic and traffic safety; communicates with law enforcement offices; provides plans for installation of striping and marking.
- Maintains engineering and traffic/transportation files, including computer databases, including plans, studies, inspections, surveys, maps, and other data related to engineering and transportation projects; prepares, updates, reproduces, and distributes maps, drawings, blueprints, and other information recorded in the GIS.
- Establishes and coordinates materials testing schedules with contractors, suppliers, other agencies, and County staff.
- Provides information to the public, contractors, engineers, developers, and representatives of other government agencies.
- Utilizes a wide variety of engineering testing, drafting, and survey tools and equipment; calibrates, maintains, and performs basic repairs to utilized tools and equipment.
- Makes a variety of engineering and mathematical computations and calculations.
- Performs other related duties as assigned.

The requirements listed below are representative of the knowledge and ability required. Reasonable accommodations may be made to enable qualified individuals with disabilities to perform the essential functions.

QUALIFICATIONS

Knowledge of:

- Engineering principles, practices, and methods applicable to office and field work involving the design, construction, and maintenance of public works projects including materials testing and field inspection.
- Basic design and construction practices and methods of streets, underground facilities, and related public works infrastructure.
- Engineering plan types, review practices, permit filing, and approval procedures.
- Principles and practices of technical civil engineering drafting and surveying support.
- Drafting and surveying equipment, computers, principles, problems, techniques, and practices.
- Engineering mathematics, including geometry, algebra and trigonometry.
- Principles and practices of contract and project administration.
- Applicable federal, state, and local laws, codes, and ordinances relevant to the area(s) of responsibility.
- The properties and composition of materials used in public works engineering projects.
- Technical report writing practices and procedures.
- Principles and procedures of recordkeeping.
- Principles and techniques for working with groups and fostering effective team interaction to ensure teamwork is conducted smoothly.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and County staff.

- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Modern equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.

Ability to:

- Modify engineering drawings, topographic maps, improvement plans, and illustrative graphics using GIS software.
- Read and interpret engineering plans, technical drawings, specifications, and subdivision maps.
- Inspect construction work for compliance with plans and specifications.
- Perform standard engineering design under professional engineering supervision.
- Make mathematical calculations and accurate engineering computations and drawings.
- Make and record accurate field engineering observations.
- Use engineering, drafting, and surveying instruments and equipment.
- Prepare clear and concise reports, permit applications, correspondence, policies, procedures, and other written material.
- Prepare a variety of plans, specifications, maps, graphic materials, cost estimates, and technical engineering reports.
- Research and analyze legal descriptions related to properties.
- Understand and follow complex technical instructions.
- Conduct research and compile accurate data in areas of responsibility.
- Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed.
- Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
- Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
- Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Minimum Qualifications:

Any combination of training and experience that would provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the required qualifications would be:

Equivalent to an associate degree with major coursework in civil engineering, drafting, surveying, mathematics, or a related field

and

Engineering Technician I: None.

Engineering Technician II: Two (2) years of experience performing increasingly responsible engineering technical support work at a level equivalent to the County's class of Engineering Technician I.

Licenses and Certifications:

- Must possess a valid US driver's license upon date of application. Must obtain California driver's license following hire date per California DMV regulations.

PHYSICAL DEMANDS

- Mobility to work in a standard office setting and use standard office equipment, including a computer; to operate a motor vehicle and visit various County sites (use only for driving positions); primarily a sedentary office classification although standing in work areas and walking between work areas may be required; occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information; ability to lift, carry, push, and pull materials and objects up to 50 pounds in all cases with the use of proper equipment and/or assistance from other staff.
- Vision to read printed materials and a computer screen.
- Hearing and speech to communicate in person and over the telephone.
- Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment.

When assigned to field inspection:

- Mobility to work in changing site conditions; to sit, stand, and walk on level, uneven, or slippery surfaces; to reach, twist, turn, kneel, and bend, to climb and descend ladders; and to operate a motor vehicle and visit various County sites.
- Strength and stamina to perform light to medium physical work; lift, carry, push, and pull materials and objects averaging 15 pounds, or heavier weights up to 50 pounds, in all cases with the use of proper equipment and/or assistance from other staff.
- Vision to inspect site conditions and work in progress.
- Fieldwork requiring frequent walking in operational areas to identify problems or hazards, with exposure to hazardous materials in some site locations.

ENVIRONMENTAL CONDITIONS

- Office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances.
- Also includes field work with exposure to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, chemicals, mechanical and/or electrical hazards, and hazardous physical substances and fumes.
- Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

ADDITIONAL REQUIREMENTS

Some departments may require pre-employment screening measures before an offer of employment can be made (i.e. background screening, physical examination, etc.).