

**COMMUNITY DEVELOPMENT DEPARTMENT  
ENGINEERING DIVISION  
ENGINEERING TECHNICIAN / INSPECTOR III**

**GENERAL DUTIES:** Under direct supervision of a Senior Civil Engineer inspect all public works improvements, perform design work and complex and difficult design drafting in connection with subdivision plans, public works projects and improvement districts.

**GENERAL REQUIREMENTS:**

Personal Appearance – Is appropriate for the work environment and meets expectations for the proper image of the City, as per department policy.

Attendance – Follows department/City policy in regards to punctuality and attendance.

Compliance with Work Instructions – Follows all work instructions given and completes all assigned duties. Follows the policies, rules and regulations for the City and department.

Safety – Follows the Safety and Health Handbook, as well as other safety related standards, and avoids unnecessary risk to oneself, co-workers, citizens and property.

Internal Relations – Conducts work in a manner which supports the overall team effort, and which avoids disruption of one's work and the work of others. Treats all City employees with respect. Takes responsibility to resolve differences. Finds solutions to problems. Respects racial, religious, ethnic and sexual differences of others, and avoids derogatory statements regarding these differences.

Customer Service – Conducts work that fosters public support for the City that will lead to fewer complaints and claims against the City. Treats customers with respect. Follows the same rules that one expects the customers to follow. Respects racial, religious, ethnic and sexual differences of others, and avoids derogatory statements regarding these differences.

**ILLUSTRATIVE EXAMPLES OF WORK**

1. Inspect all public improvements for conformance to City standards. Perform a variety of technical engineering work including acting as instrument person on field surveys; reducing survey notes, making trigonometric computations and calculating grades; preparing field drawings, punch lists and final fees for development projects, drawing standard details, exhibits for presentations, plans and specifications, engineering layout and design, and complex and difficult design drafting, for a wide variety of public works capital improvements including roads, bridges, utilities, sewers and drainage projects. Perform mathematical calculations; coordinate project conflicts with other utility agencies; perform speed surveys; traffic counts; stop sign and traffic signal warrant studies, sign surveys, roadway condition surveys; notify, inspect and follow-up on City sidewalk repairs; respond to traffic and pedestrian-related conditions; examine and prepare encroachment, oversize and overweight permits; and develop chip seal program list of streets and related maps. Provide support to Engineering Technician/Inspector I and II in completing various design work and related tasks.

2. Review of all types of improvement plans, maps, surveyor boundary calculations, titles, easements, land subdivisions and certificates for design integrity, accuracy and conformance with map standards, city standards and city codes. Prepare improvement agreements, fee schedules, cost estimates and reimbursements and work closely with contractors and developers to ensure compliance with City requirements. Maintain map files for annexations, parcel maps, tract maps, street improvements, add new streets and subdivisions to base maps, update water table history, keep the blueprint room stocked and functional and maintain all drafting supplies, traffic and surveying instruments. Update address maps, changes of addresses, and assist with the street naming process.
3. Gather and participate in the analysis of data and the preparation of comprehensive water, sewer, drainage, sewage treatment and transportation reports and prepare inventories and report on existing facilities such as signs, school crossings, traffic signals and parking facilities.
4. Maintain good public relations, receiving and answering public requests and concerns, providing assistance at the counter and assisting other departments with a variety of needs.
5. Participate in related training programs.
6. Perform related work as required.

**REQUIRED SKILLS, KNOWLEDGE AND ABILITIES:**

**SKILLS:**

1. The use of surveying instruments.
2. The use of traffic counting instruments.
3. The use of drafting instruments.
4. The use of blueprint machines.
5. The use of plotting machines.
6. The use of safety equipment.

**KNOWLEDGE: Knowledge of:**

1. Basic supervisory principles and techniques.
2. The principles, functions and applications of engineering mathematics including trigonometry.

3. Symbols and designations used in construction drawings and maps.
4. Basic engineering terminology.
5. Modern surveying techniques.
6. Modern traffic counting techniques.
7. Modern drafting instruments and advanced drafting techniques.
8. Basic computer applications and computer-aided drafting (CAD).
9. Modern public works construction methods, principles and practices.
10. Scheduling principles and practices.
11. Public works construction materials and equipment.
12. Modern material testing techniques.
13. Safety methods, practices and precautions.
14. Design and specifications requirements for public works facilities.
15. Customer service techniques.

ABILITIES: Ability to:

1. Provide support and training to Engineering Technician/Inspector I and II.
2. Establish and maintain effective working relationships with supervisors, co-workers, other departments, outside agencies, and the general public.
3. Prioritize workload of self and others and exercise sound judgement within established procedural guidelines.
4. Accurately record survey instrument readings.
5. Read and understand construction drawings and specifications, test procedures, surveying and staking procedures and apply the mathematical procedures when necessary.
6. Draw and letter neatly and accurately on drawings, charts, graphs and maps.
7. Prepare clear, concise and accurate drafting designs, expressing factual and conceptual information verbally and in writing.

8. Record and summarize work.
9. Use hand calculator and desktop computer.
10. Apply customer service techniques effectively.
11. Monitor construction activities and time and materials projects.
12. Make grade computations and other construction-related computations quickly and accurately.
13. Interpret and apply construction standards.
14. Determine cost estimates of damaged infrastructure.

**MACHINES/TOOLS/EQUIPMENT UTILIZED:**

Typical office and field environments include the following:

1. Computer, keyboard and monitor
2. Laserjet or ink jet printer
3. Telephone or cellphone
4. Copier
5. Calculator or 10-key adding machine
6. Facsimile machine
7. Typewriter
8. Microfiche reader
9. Polaroid or digital camera
10. Automobile, truck or van
11. Paper shredder and cutter
12. Specialized computer software
13. Specialized tools and equipment used in inspection and enforcement duties
14. Surveying instruments
15. Drafting equipment
16. Engineering tools and equipment
17. Concrete test hammer and set penetrometer
18. Digital thermometers
19. Voltage tester
20. Philadelphia rod and direct reading rod
21. Two-way radio
22. Engineer and English/Metric tape
23. Folding rulers
24. Distance measuring wheel
25. Tape measure
26. Flashlight
27. Raingear and boots
28. Safety goggles, vest, booties, gloves, steel-toe shoes, mask , earplugs and hardhat
29. Disposable latex gloves and tyvex coveralls

**PHYSICAL DEMANDS:**

When working in the field or office, employee will perform the following physical activities which include handling of survey, drafting and engineering equipment, conducting site visits or enforcement activities, handling files, plans, blueprints, code books, binders, and other work-related materials:

1. Sitting, for prolonged periods of time working at a computer or attending meetings.
2. Walking, when conducting site visits, inspections or enforcement activities.
3. Standing, when conducting site visits, inspections or enforcement activities.
4. Kneeling, when conducting site visits, inspections or enforcement activities.
5. Bending/stooping, when conducting site visits, inspections or enforcement activities.
6. Squatting/bending, when conducting site visits, inspections or enforcement activities.
7. Crawling, when conducting site visits, inspections or enforcement activities.
8. Climbing, ladders, stairs, or roofs, when conducting site visits, inspections or enforcement activities.
9. Balancing, when using ladders during site visits, inspections or enforcement activities.
10. Twisting, when conducting site visits, inspections or enforcement activities.
11. Reaching, when conducting site visits, inspections or enforcement activities.
12. Carrying, equipment and tools during site visits, inspections or enforcement activities.
13. Pushing/pulling, manhole covers, storm grates or other equipment tools.
14. Dragging, up to 75 lbs., when accessing manholes or moving storm grates.
15. Driving, to homes or business facilities when conducting site visits, inspections or Lifting, up to 50 lbs., during site visits, inspections or enforcement activities.
16. enforcement activities, or when attending meetings and training.
17. Speed, in meeting deadlines and using office equipment.

**SENSORY DEMANDS:**

When working and traveling in the field, all senses are used during site visits, inspections and enforcement activities. Under typical office conditions, employee utilizes these senses while using a computer, printer, typewriter, phone, fax machine, copier, calculator, adding machine, paper shredder, paper cutter, camera, automobile, etc.:

1. Seeing, good (color) vision is necessary when trying to identify various materials or chemicals when conducting site visits, inspections and enforcement activities.
2. Hearing, is necessary when listening for traffic, heavy equipment or other hazardous equipment. Also necessary to ensure communication with field personnel and citizens.
3. Touching/Feeling, is necessary to differentiate sharp, hot or cold objects, in order to prevent injury or unsafe conditions.
4. Smelling, is necessary when detecting odors such as gasoline, chemicals, solvents, cement or asphalt fumes, decomposed byproducts, etc.

**ENVIRONMENTAL AND FLOOR SURFACE CONDITIONS:****Office Conditions:**

1. Indoors: Typical office conditions, up to 20% of the time.
2. Flooring: Low level carpeting, linoleum, tile, wood, etc.
3. Noise Level: Conducive to office settings with phones, copiers, radios, and typewriters.
4. Lighting: Conducive to normal office setting.
5. Ventilation: Provided by central heating and air conditioning.
6. Dust or Fumes: Normal to high indoor levels associated with dust and odors from computer equipment, paper, ink pens, copiers or other office-related equipment.

**Field Conditions:**

1. Outdoors: Typical field conditions, over 60% of the time, when conducting site visits, inspections or enforcement activities. Employee may be required to crawl or work in cramped spaces such as manholes areas when performing inspections.
2. Travel: Under varying conditions via automobile or plane, 20% of the time.
3. Flooring: Asphalt, linoleum, gravel, dirt, wood, rock, mud, grass, uneven surfaces, etc.
4. Noise Level: Varying low to high levels, especially when working at construction sites, near traffic, at manufacturing plants/businesses, at a park or field, near a stream, etc.
5. Lighting: Conducive to a day or night setting. Employee may work odd hours and/or weekends depending on the stage of construction. In addition work may be performed in poorly lit areas such as below the ground in sewer areas or trenches.
6. Ventilation: Heating and air conditioning provided by a vehicle or facility. Ventilation may be restricted in poorly ventilated areas such sewer manholes.
7. Dust or Fumes: Normal to high levels of lime, gasoline, diesel, fly ash, propane, solvents vehicle exhaust, dust, pollen, methane fumes, etc.

**HAZARDS:**

Mechanical, electrical and chemical exposure is low to high, depending on the construction site or business being inspected. When working around heavy equipment or power tools, care must be taken to avoid unsafe conditions. In addition, employee may be exposed to biological waste products and bodily fluids when working in the sewer system or at a construction site. There is potential exposure to bees, insects, snakes, rodents, birds and other animals when performing routine inspections. Employee may be present when radiological testing equipment is used during the completion of groundwork. Lastly, when utilizing a vehicle, there is some exposure to mechanical hazards.

Exposure is minimal in the office environment when properly using standard office equipment such as a telephone, computer, typewriter, printer, copier, adding machine, fax machine, camera, radio, paper shredder, or paper cutter.

**ATMOSPHERIC CONDITIONS:**

Minimal to high exposure to fumes and gases may occur when performing a site inspection or conducting enforcement activities. Solvents, cleaners, decomposed byproducts from sewer lines, construction site waste, gasoline, hydraulic fluid, vehicle exhaust, propane, and pesticides are common in the field. In addition, there is exposure to high levels of heat when contractors lay asphalt. During emergency spill situations, employees refer all hazardous waste situations to the Fire Department or Hazardous Materials team.

Minimal exposure to fumes occurs in the typical office environment which may result from use of copiers, dry erase pens, liquid paper, toner cartridges, ink pens, or other office supplies or equipment.

**REQUIREMENTS, TRAINING, EXPERIENCE AND QUALIFICATIONS:**

1. Graduation from high school or the equivalent.
2. Six years of progressively responsible engineering work experience equivalent to that performed by an Engineering Technician/Inspector II (up to two years of acceptable and related college education or technical training can be substituted at the rate of one year of education for one year of experience).
3. Physical ability to perform field inspections.
4. Possess and maintain a valid California Driver License and a safe driving record necessary to operate assigned vehicle(s).
5. Pass a post-offer medical examination, which includes a drug test.
6. May be subject to weekend work, varied shifts, and recall on a scheduled and/or emergency basis.
7. Pass a Department of Justice criminal record check for employment.
8. Prefer non-tobacco user.