

CITY OF HAYWARD

ENGINEERING TECHNICIAN

DEFINITION

To perform a variety of paraprofessional office and field engineering work including drafting, minor design work, engineering records preparation and maintenance and operation of equipment and instruments; may work as survey crew member in support of surveying and other civil and traffic engineering functions.

DISTINGUISHING CHARACTERISTICS

This is an entry level classification that assists higher level technical and professional engineers in all activities of the Engineering & Transportation Division. The Engineering Technician is responsible for conducting traffic, engineering and similar studies for public works projects, and for assigned technical engineering tasks, preparing plans and estimating for various design and construction activities. It is distinguished from the Assistant Civil Engineer which is the journey level classification with responsibility of the more complicated technical tasks.

SUPERVISION RECEIVED

General supervision is provided by higher level technical and professional engineer, depending on the assigned area of responsibility. Lead direction may be provided by other classification in the division

SUPERVISION EXERCISED

None.

ESSENTIAL DUTIES

Performs non-routine drafting assignments which require application of standardized drawing technique

Gathers field data for planning, design and construction.

Prepares accurate drawings from design notes, sketches and field survey notes.

Makes traffic counts and prepares simple diagrams of intersections showing sight distances and traffic flow.

Makes speed surveys, polls motorists and pedestrians, and prepares diagrams of accident frequencies.

City of Hayward
Engineering Technician
Page 2

ESSENTIAL DUTIES (continued):

Makes computations to determine quantities and costs.

Performs complex mathematical calculations by using accepted formulas, manuals and equipment.

Reads and interprets maps and other engineering records and prepares legal descriptions of property.

Corrects and re-designs construction plans for street improvements, utility installations, drainage and material quantities by using appropriate calculations, computations and engineering data and by consulting with engineers.

Performs survey office work using drafting tools while employing mathematical and engineering data to prepare information for use by survey field crews, construction crews and construction inspectors.

Interprets information from survey field work for use in mapping, designing construction plans, analyzing earthquake fault monitoring data and updating survey records.

Performs various duties associated with land surveying including using measuring tapes and level rods to assist in determining lines, angles, points, elevations and distances.

Performs various record keeping and file maintenance duties such as recording instrument readings in field survey notes, maintaining office files of notes, control data, monument records, surveyors maps, and construction drawings.

Prepares and maintains accurate “as-built” plans from notes from contractors of completed projects.

Computes horizontal and vertical curves.

Calculates distances, earth work quantities, fees and charges.

Performs plan checking by comparing drawings of proposed improvements against drawings which illustrates established engineering standards applicable to various projects.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Knowledge of:

Algebra, geometry, and trigonometry.

City of Hayward
Engineering Technician
Page 3

JOB RELATED AND ESSENTIAL QUALIFICATIONS (continued):

Knowledge of (continued):

Proficient in AutoCAD Civil 3D drafting including working with raw topographic survey points to build surfaces, produce maps, renderings, view graphs, cross-sections and plan and profiles.

Ability to:

Perform basic engineering and surveying calculations.

Interpret construction drawings, field survey notes, deeds, maps and other legal descriptions and to extract pertinent information.

Maintain neat and accurate records.

Understand and carry out oral and written instructions.

Communicate effectively orally and in writing.

Establish and maintain cooperative and effective relationships with those contacted in the course of work.

Visualize the practical application of designs.

Cope with extensive public contact.

Draft engineering plans from rough layouts.

Prepare exhibits using a variety of software applications.

EXPERIENCE AND EDUCATION

Any combination equivalent to experience and education that could likely provide the required knowledge and abilities would be qualifying. A typical way to obtain the knowledge and abilities would be:

Experience: Two (2) years of experience in engineering drafting and calculations, performing responsibilities related to engineering design, construction, inspection and or traffic.

City of Hayward
Engineering Technician
Page 4

EXPERIENCE AND EDUCATION (continued):

Education: Equivalent to graduation from high school supplemented by courses in algebra, geometry, trigonometry land surveying, engineering design, construction inspection, and or traffic engineering. An Associate degree in a related field is desirable.

Training: Any recent training such as academic courses, and certification programs which are relevant to this job classification.

License and Certificates: Possession of a valid Class C California driver's license and satisfactory driving record as determined by the City.

Willingness and ability to work overtime as required; respond to emergencies, attend meetings, classes, and seminars as required during work and non-work hours; work under adverse conditions such as in inclement weather, in awkward spaces, and in and around construction areas.

SPECIAL REQUIREMENTS

Essential duties require the mental and /or physical ability to work in a standard office environment; drive a motor vehicle; read fine print on drawings and computer monitors; converse in person, over the telephone, two-way radio, and around the noise of heavy construction equipment and be heard and clearly understood; move across rough terrain and bridge scaffolding; climb into and out of sewer holes and trenches, up to 25 foot ladders, and several flight of stairs; use drafting and survey instruments , calculators, and personal computers; and strength to safely lift and maneuver materials weighing up to 30 pounds.

PROBATIONARY PERIOD: One (1) year.

T200 Engineering Technician

Revised January 27, 2022

AAP GROUP: 5

FPPC STATUS: Non-Designated

FLSA STATUS: Non-Exempt