Department:	Public Works/Engineering
Bargaining Unit:	SEIU
Salary Range:	E44
Last Revision:	September 1997

ENGINEERING TECHNICIAN

DEFINITION

Under general supervision, to perform a variety of routine drafting, surveying and technical field and office work; to monitor, review, and inspect workmanship and materials used in a variety of public works projects; to ensure conformance with plans, specifications, and Departmental regulations; to perform construction plan checking and survey work, and to prepare and issue encroachment permits; and to provide technical assistance to assigned departments or divisions.

SUPERVISION EXERCISED

Exercises no supervision

DISTINGUISHING CHARACTERISTICS

This class functions as an entry level in the Public Works Inspector series. It is distinguished from the Public Works Inspector class, in that the latter requires incumbents to perform moderately complex assignments with a greater degree of independence.

EXAMPLES OF IMPORTANT AND ESSENTIAL DUTIES

Prepare drawings from engineering sketches, survey field notes, and other data for use in design and construction of a variety of public works project including water lines, streets and storm drains.

Prepare, assemble, and distribute copies of maps, charts, and blueprints as requested.

Perform and check mathematical calculations related to drafting and basic engineering.

Maintain and update a variety of maps and records including city street maps, utility system maps, lot and block maps for field use.

Develop and maintain filing systems for maps and engineering drawings; develop and produce books of maps for field use.

Compile roadway feature data; prepare condition diagrams.

EXAMPLES OF IMPORTANT AND ESSENTIAL DUTIES

Conduct speed zone surveys.

Perform stop sign and traffic signal warrant studies.

Prepare collision diagrams**.**

Inspect various structures and public works, private and capital improvement construction projects for conformance with specifications and regulations; check line, grade, size, elevation, and location of structures, roadway improvements, and underground utilities.

Review and confer with other engineering staff in the approval of proposed traffic control plans; monitor traffic control problems at construction site; coordinate corrections if necessary.

Record amounts of material used and work performed; prepare necessary reports for extra work items, progress payments, and survey reduction.

Review plans and specifications of various assigned projects; attend pre-construction conferences with contractors, utility companies, and City staff members for planning of construction project schedules.

Monitor and participate in the performance of a variety of field tests for assurance including soil compaction, water pressure, chlorine bacteria, and concrete compliance tests; per form survey activities.

Conduct plan checking of public/civil works construction drawings; review various types of revisions to on going construction projects.

Coordinate work with other City departments and utilities; confer with contractors, developers, and project engineers regarding compliance with standards.

Review, approve, and issue encroachment permits related to land development commercial development, repairs of new installations of utilities within City right of ways to ensure compliance and conformance with City specifications and regulations.

Conduct and perform field inspections; inspect adjacent properties for damages from construction activity.

Perform design evaluation and technical drafting work; maintain maps and plans.

Prepare a variety of activity records and reports; maintain as-built notes for each set of plans; prepare and maintain engineering project and construction files.

OTHER JOB RELATED DUTIES

Perform related duties and responsibilities as assigned.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Knowledge of:

Survey techniques and practices.

Terminology, methods, practices, and techniques of drafting.

Modern office procedures, methods, and computer equipment.

Occupational hazards and standard safety practices necessary in the assigned area of work.

Principles, methods, materials, and equipment used in construction, surveying, and inspection.

Mathematical principles including algebra, geometry, and trigonometry as applied to engineering calculations performed in drafting, surveying, plan checking, inspections, and field test.

Soil mechanics and geology and their application to engineering activities.

Principles practices, methods, techniques, and equipment used in materials sampling, testing, and estimating procedures.

Pertinent Federal, State, and local laws, codes, and regulations governing the construction of assigned projects and encroachment permits.

Skill to:

Use, operate, and care for AUTOCAD computer equipment and program, plotter, printer, and surveying and mechanical instruments and tools.

Operate a motor vehicle safely.

Ability to:

Perform engineering drafting work using AUTOCAD

Ability to:

Reduce, interpret, and apply field notes in performance of drafting and survey duties.

Read and interpret property descriptions and City and other agency maps and sketches.

Read, interpret, and apply a wide variety of technical information from manuals, drawings, specifications layouts, blueprints, and schematics.

Program plotter printer.

Understand and follow oral and written instructions.

Communicate clearly and concisely, both orally and in writing.

Prepare accurate engineering sketches, drawings, and records.

Detect and locate faulty materials and workmanship and determine the stage of construction during which defects are most easily found and remedied.

Take and record accurate and precise survey measurements and interpret survey calculations.

Perform field inspections and survey work.

Perform accurate engineering design and field survey calculations.

Design, prepare, and check engineering plans and studies.

Deal firmly and tactfully with contractors, engineers, and property owners.

Establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.

Experience and Training Guidelines:

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

Experience:

Three (3) years of increasingly responsible experience performing a variety of engineering office and field work, including construction inspection, surveying, drafting, or related work.

One (1) year of construction inspection experience is desirable.

Training:
Equivalent to the completion of twelfth grade supplemented by specialized training in mathematics, civil engineering, or a related field.

License or Certificate:

Possession of, or ability to obtain, an appropriate, valid driver=s license.

Special Requirements:
Essential duties require the following physical skills and work environment:

Ability to work in a standard office environment with the ability to sit, stand, walk, kneel, crouch, stoop, squat, crawl, twist, climb, and lift 70 pounds; exposure to noise, outdoors, vibration, confining work space, chemicals, mechanical hazards, and electrical hazards; ability to travel to different sites and locations.

Effective Date: September 15, 1997