

MAJOR FUNCTION

This is advanced technical and/or supervisory work performing sub-professional technical engineering or land survey work in the office, directing the operations of an assigned unit, or designing electric & gas utility facilities. Work involves preparation of topographic and boundary surveys, performing various sub-professional engineering or land surveying duties, including selection of routes for underground and overhead utilities, compiling data for use in street right-of-way and easement surveys, datum and coordinate system conversions, responding to public questions and complaints, field-checking completed drawings; researching documents to determine right-of-way location, property ownership, deed line location, easement ownership location and conducting a variety of traffic studies, and the responsibility for the planning, designing, and preparation of construction packages and cost estimates for electric utility projects. Assignments are usually general in nature. Independent judgment is exercised in planning work details and making technical determinations. Work is performed under the general direction of a supervisor and is subject to review through observation and results obtained.

ESSENTIAL AND OTHER IMPORTANT JOB DUTIES**Essential Duties**

Reviews utility and roadway plans, right-of-way easements, and survey drawing for accuracy and completeness. Uses microcomputers and designated programs and applications to perform computer aided drafting. Performs computer aided drafting and design (CADD) drawings that conform to Florida Minimum Technical Standards in surveying and other designated standard requirements. Confers with surveyor, engineers, or other personnel requesting surveying services and conducts site visits for data verification. Prepares designs for minor roadway, drainage, and utility projects and assists in preparing designs for major complex projects. Prepares and reviews legal descriptions. Prepares cost estimates on construction projects. Performs drainage analysis and makes complex drainage computations. Performs sub-professional engineering computations. Assists in the selection of routes for the installation of sewer and storm water management systems. Checks subdivision plats for mathematical closure and conformance to subdivision regulations. Abstracts city and county records for information required for right-of-ways and easements. Reduces field survey notes and performs complex survey calculations. Performs or supervises others in conducting a wide range of traffic studies and investigations, as a result of citizen complaints, or as part of the development of roadway or traffic operations improvements. Studies may include, but are not limited to accident studies, volume studies, speed and delay studies, and parking studies. Analyzes all types of traffic data with the purpose of identifying actual or potential traffic problems. Analyses traffic accident data annually at the apparent high accident locations in the city. Develops tentative plans and designs for remedial treatment. Assists in all aspects of feasibility and design studies for major roadway projects, as well as for traffic operation improvements. Reviews and investigates plans for land development and proposed revisions to the transportation plan. Prepares technical reports for presentation in either oral or written form. Conducts elementary traffic engineering research in a variety of areas. Supervises subordinates in conducting all types of traffic studies and design efforts. Performs the necessary tasks for land acquisition and/or field surveys. Prepares property descriptions for land boundaries, easements, right-of-way, disclaimers, and annexations. Reviews City related property descriptions and field survey information provided. Performs other duties as required.

Electric & Gas Utility: Obtains field information for existing electric distribution facilities and prepares plans for extension of facilities to serve new customers. Reviews developers' submittals and designs single-phase and three-phase electric distribution lines using AutoCAD and GIS Designer. Calculates rating of equipment, such as transformers and switches and proper sizing of conductors and cables. Designs and draws street light system and area lights where required. Calculates material and labor

cost estimates for new underground and overhead electric facilities and extension of existing facilities. Reviews "as built" drawings for entering into GIS database. Other Important Duties
May maintain and update GIS. May plan, organize, assign, supervise, and review the work of subordinate and other technicians engaged in drafting (drawing) of boundary surveys, topographic surveys, right-of-way surveys, sketch of descriptions, and legal descriptions, or related engineering drafting activities. Participates with superiors in the selection, placement, training, safety, evaluation, and discipline of subordinates. Attends training and developmental events as scheduled. Performs other related work as required.

Electric & Gas Utility: Performs related work as required.

DESIRABLE QUALIFICATIONS

Knowledge, Abilities and Skills

Thorough knowledge of the principles, practices, techniques, and instruments of civil engineering as they relate to engineering design or land surveying. Thorough knowledge of mathematics through trigonometry and plain geometry. Thorough working knowledge of traffic engineering principles and principles of traffic data collection and analysis techniques. Thorough knowledge of the design principles and applications of all types of traffic control devices. Thorough knowledge of topographic, location surveys and U.S. Government public land surveys. Considerable knowledge of concepts and terminology, principles and techniques of storm water management and master drainage planning. Knowledge of the State Plane Coordinate system and the use of coordinates in performing surveys. Knowledge of the legal principles that govern land surveying. Ability to perform technical computations. Ability to read and interpret a wide variety of maps, plans, aerial photographs, survey notes and other cartographic records. Ability to follow complex oral and written instructions and to give clear and understandable instructions. Ability to use independent judgment without detailed instructions from supervisor. Ability to prepare and interpret legal descriptions. Ability to compute and draw contour lines. Ability to compute all elements of and execute field surveys dealing with circular curve situations, including compound and reverse curves. Ability to compute the closure of and balance a survey. Ability to secure survey information relevant to assigned projects from local, state, and federal governmental agencies and from other surveyors. Ability to communicate effectively, both orally and in writing. Ability to prepare concise engineering reports (applicable to traffic engineering area). Skill in performing CADD design and drafting with microcomputers and the programs and applications necessary for successful job performance. Skill in hydrologic and hydraulic computations. Skill in application of various storm water run-off models.

Electric & Gas Utility: Knowledge of mathematics, fundamental sciences or engineering theory. Knowledge of and ability to comprehend all types of electric distribution systems, technical problem solving, design standards, and materials construction. Knowledge of GIS system, computers, Computer Aided Design (CAD), spreadsheets, databases, and measuring equipment. Demonstrated knowledge of OSHA and NEC rules and regulations. Knowledge of basic budgetary and accounting procedures and practices. Ability to communicate effectively and maintain working relationships with customers, contractors, developers, co-workers, and the general public. Ability to prepare accurate job estimates. Ability to coordinate activities in relation to other utilities' and customers' need. Ability to do surveying for electrical overhead and underground facilities. Ability to understand and follow complex oral and written instructions. Ability to keep coherent records and make reports. Ability to work from service manuals and drawings.

Minimum Training and Experience

Possession of an associate's degree in civil engineering, civil engineering technology or drafting and design and four years of technical engineering experience that includes computer aided drafting

(AutoCAD) or surveying, or four years of technical engineering experience in the area of engineering to which the position is assigned; or an equivalent combination of training and experience.

Electric & Gas Utility: Possession of an associate's degree in math, science, or engineering technology and four years of electric utility experience in engineering, operation, design tasks or maintenance; or Possession of a high school diploma or an equivalent recognized certificate and six years of the aforementioned experience; or an equivalent combination of education and experience.

Necessary Special Requirements

At the department director's discretion, a valid Class E State driver's license may be required at the time of appointment for any designated positions allocated to this class.

Electric Utility:

Individuals in this classification are considered essential during emergency and storm situations and must be able to work 16 hours per day for extended periods of time and may be required to be away from their family.

Individuals in this classification must be available to serve on-call and are subject to having to work outside of their assigned shift/schedule to meet operational needs.

Revised: 10-10-80
12-12-83
06-06-84
01-24-90
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