

ENGINEERING SPECIALIST, SENIOR

KIND OF WORK

Paraprofessional engineering work.

NATURE AND PURPOSE

Under limited supervision, applies civil engineering skills to preliminary or final design construction plan development or on-site construction inspections for moderate to major scale projects or other specialty engineering activities for review by professional staff to ensure proper program execution and compliance with department, state, and federal procedures, practices, regulations, and standards; performs related work as required.

EXAMPLES OF WORK (A position may not include all the work examples given, nor does the list include all that may be assigned.)

Supervises a group of paraprofessional employees engaged in the development of large scale preliminary design construction plans for moderate to major scale projects involving right-of-way acquisition, major environmental issues, community involvement, etc. to ensure all documents meet department, state, and federal laws, standards, and objectives by identifying project alternatives; conducting meetings and public hearings; and assigning work to subordinate design staff, providing on-going evaluation and guidance to final development.

Directs a group of paraprofessional employees who develop final construction plans for complex road/bridge design, roadway reconstruction or bridge replacements requiring permits, additional right-of-way, etc. to ensure appropriate engineering design methods and standards are achieved by initially reviewing preliminary plans for potential problems; determining the need for additional information; identifying project approach alternatives; and assigning, checking, and reviewing the work of subordinate staff through final development.

Supervises all phases of multi-operational building and structural construction projects and/or is responsible for simultaneous supervision of several construction projects of significant geographical separation to ensure all work is performed in accordance with project plans, specifications, and special provisions by conducting pre-construction conferences with contractors; coordinating with public utilities and other affected parties regarding removal/changes to facilities; reviewing contractors' work in progress; preparing supplemental agreements and change orders in reviewing pay quantities for partial and final payment; and completing records and reports for project close-out.

Consults with and guides municipalities in the development of airport projects so that design plans are of practical quality and will meet federal and state standards for funding by attending preliminary meetings between municipalities, consultants and state and federal agencies; preparing technical service agreements with municipalities regarding survey, engineering, and other technical services; recommending conceptual design changes to consultant plans; and performing periodic and final inspections of construction work.

Reviews plans for federal aid construction projects from city, county, and other governmental agencies to ensure design criteria is met and to determine appropriate funding source for each construction item by conducting a plan review, withholding approval pending the resolution of deficiencies; identifying items eligible for federal aid and those eligible for local funds; preparing special provisions to modify standard construction specifications; and establishing a date of opening of bids.

Directs the collection, manipulation and analysis of data for special engineering-related research projects by assigning personnel specific work assignments; establishing work completion dates; coordinating required field work with other sections; manipulating and analyzing data; and preparing final reports.

#### KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED

##### Knowledge of:

Engineering technology sufficient to develop a set of construction plans based on department, state and federal specifications, design practices and procedures.

One or more areas of engineering technology sufficient to develop work plans requiring the use of conceptual and/or theoretical applications of the respective professional discipline(s).

Construction practices, materials and procedures sufficient to conduct inspections of contractors' work and to identify improper work methods and materials usage.

Drafting methods sufficient to direct others in the preparation of maps, detailed construction plans, and specifications.

Geometric design sufficient to evaluate designs, identify unsafe features, and recommend revisions or changes.

Ability to:

Supervise others in the activities of a large engineering project.

Communicate effectively, both orally and in writing.

Read and understand construction plans to determine code and specification compliance.

Prepare and complete working drawings and specifications for construction projects.

Review and evaluate construction materials, tests, and reports for contract and industry compliance.

Est: 4/85

Rev.:

T.C.:

Former Title(s):