

## ENGINEERING SPECIALIST

### KIND OF WORK

Para-professional engineering work.

### NATURE AND PURPOSE

Under general supervision, applies civil engineering skills to engineering/surveying activities which are reviewed by professional staff, including the development of preliminary or detailed construction plans or on-site construction inspections, materials testing, mapping or other specialty activities 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.)

Develops preliminary or final highway or bridge construction plans for projects that do not involve right of way taking or environmental issues to meet state and federal requirements and to provide contractors with necessary specifications by directing the base map compilation, drafting and detailing of the design features and coordinating the activities of employees assigned to these projects.

Develops accurate and reliable land survey data to determine the horizontal and vertical position of points in engineering projects and for the design of construction plans, staking and property boundary determinations by directing the work of location and construction survey parties in the conduct of various land surveys.

Oversees the highway and bridge construction work of contractors on one dimensional - single operation projects to insure compliance with project plans, special provisions, standard specifications and specified time tables by conducting daily site inspections and testing, interpreting plans and specifications and initiating supplemental agreements and change orders.

Develops agreements with utility companies and other public and private organizations to arrange for relocation or adjustment of facilities, limited use of right-of-way, etc. as required by construction plans by contacting the involved parties, obtaining legal approval and development of written agreements and insuring their proper execution and distribution.

Directs the inspection, maintenance and repair of state-owned dams to insure all necessary repairs and adjustments are identified and rectified by making assignments to field inspection staff and insuring proper maintenance, repair or reconstruction methods are employed.

Develops and implements technical and informational training sessions to promote energy conservation methods and equipment for the industrial, commercial, and institutional sectors of the state by identifying technical subjects, gathering and analyzing subject data, identifying and evaluating speakers/instructors and developing a promotional plan for each session.

Coordinates construction, remodeling and demolition project requests from state agencies to insure the bidding, construction and guarantee phases are properly fulfilled by overseeing the preparation of documents; advising agency users and contractors during the bidding period; and conducting periodic and final completion inspections.

### KNOWLEDGE, SKILLS AND ABILITIES REQUIRED

#### Knowledge of:

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

A specialized field of engineering sufficient to develop work plans requiring the application of fundamental engineering principles and practices.

Construction practices, materials and procedures sufficient to conduct inspections of contractor's 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.

Commercial and institutional building energy conservation techniques and equipment sufficient to communicate technical data via group sessions and technical manuals.

Surveying and mapping equipment and procedures, including geodesy and photogrammetry, sufficient to supervise others in staging construction projects.

Mathematics sufficient to compute estimated quantities for a particular construction project.

#### Ability to:

Supervise others in the activities of an engineering project.

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

Prepare complete working drawings and specifications for construction projects.

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

Communicate effectively both orally and in writing.

Est: 11/71  
Rev.: 5/85

T.C.:  
Former Title(s):