

IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES ▼
HUMAN RESOURCES ENTERPRISE

CONSTRUCTION/DESIGN ENGINEER ASSOCIATE

DEFINITION

Performs progressively responsible introductory engineering and architectural work assignments; reviews architectural and engineering drawings for building construction projects; observes and documents work done by others in the design, construction, maintenance, and operation of buildings, utilities, earthwork and related facilities; performs related work as required.

The Work Examples and Competencies listed are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

WORK EXAMPLES

Learns established technical engineering procedures, practices, standards and methods related to on-going operations and develops professional work knowledge and abilities to conduct learned duties independently.

Participates in the design, construction, maintenance, and operation of buildings, utilities, earthwork, and related facilities including related mechanical and electrical systems and equipment; assures that the components are utilized properly and to best advantage according to architectural, engineering, or related knowledge and principles.

Assists Facilities Engineers in inspecting existing facilities and the related mechanical and electrical systems and equipment; prepares recommendations for repairs or improvements.

Prepares plans, specifications, and cost estimates for construction of new facilities and for repairs and/or modifications to existing facilities.

Assists with Facilities Engineers in overseeing the work of contractors prior to, during, and after construction or remodeling; provides assistance and assures that the facility is being constructed properly.

Operates survey instruments such as transit, level, distance meter, planimeter and theodolite.

Performs trigonometric, geometric, and algebraic calculations to check survey configurations and prove physical work.

Inspects or directs the inspection of sites before, during, and upon completion of construction; reviews change orders; insures that the work performed and the material used meet standards.

Assists in the preparation of all records and reports; maintains an up-to-date account of completed an in-progress construction projects.

Reviews final drawings and specifications, and/or preliminary proposals of various building types to ensure compliance with applicable codes and regulations.

COMPETENCIES REQUIRED

Knowledge of the general principles and practices of architecture and engineering as they relate to: building construction or modification; building systems and components; and current construction methods pertaining to recreational facilities, earth structures and related mechanical and electrical systems.

Knowledge of specific construction codes and standards, and their appendices, including the Uniform Building Code, Uniform Plumbing Code, Uniform Mechanical Code, National Electrical Code, Model

Energy Code, ASHRAE 90.1, CABO One and Two Family Dwelling Code. Familiar with various National Fire Protection Association standards related to healthcare facilities, including the Life Safety Code.

Knowledge of engineering survey principles and practices.

Knowledge of the operation and maintenance of survey instruments such as transits, levels, distance meters, planimeters, and theodolites.

Knowledge of standard safety procedures employed in survey work.

Knowledge of mathematics including geometry, trigonometry and algebra.

Ability to read and understand engineering plans and specification plats, aerial photos, road plans, and land descriptions.

Ability to operate survey instruments including transits, levels, distance meters, planimeters, and theodolites.

Ability to accurately record field survey notes.

Ability to inspect completed and in-progress work for accuracy, compliance with standards, and other related criteria.

Ability to work outdoors in adverse weather conditions.

Knowledge of modern building construction methods and materials and their proper usage, including general construction, electrical, HVAC, plumbing, fire detection, notification, and suppression systems.

Ability to analyze and solve complex and technical problems, and to evaluate alternative approaches in their resolution.

Ability to read, understand, and interpret blueprints, drawings, and specifications.

Ability to communicate technical engineering or architectural information to other engineers, agency employees, contractors, and the general public, both orally and in writing.

Ability to draft plans and specifications for buildings, recreational facilities, and earth structures.

Ability to establish and maintain effective working relationships with engineers, architects, technicians, contractors, construction personnel, the public, and other agency personnel.

Ability to analyze situations and make recommendations in such areas as facility design, facility construction, materials to be used, technical drafting, and on-site construction problems.

Ability to prepare and maintain records such as blueprint files, construction material costs, facility locations, and proposed construction sites.

Displays high standards of ethical conduct by refraining from dishonest behavior.

Works and communicates with all clients and customers providing polite, quality professional service.

Displays a high level of initiative, effort, attention to detail and commitment by completing assignments efficiently with minimal supervision.

Follows policy, cooperates with supervisors and aligns behavior with the goals of the organization.

Fosters and facilitates cooperation, pride, trust, group identity and team spirit throughout the organization.

Exchanges information with individuals or groups effectively by listening and responding appropriately.

EDUCATION, EXPERIENCE, AND SPECIAL REQUIREMENTS

Graduation from an accredited college or university with a Bachelor's Degree in Engineering.

Effective Date: 07/09 DDF