

**Sioux County Secondary Roads
Job Description
For An
Engineering Technician**

Purpose of Position:

A highly technical engineering position performed under the supervision of the Sioux County Engineer, Assistant Sioux County Engineer, or Assistant to the Sioux County Engineer. Job assignments relating to this position will be performed and completed independently with very little if any supervision or assistance. The knowledge of and the ability to operate survey equipment (both electronic and manual), GPS survey equipment, material testing equipment, construction inspection equipment, drafting equipment (including Computer Aided Drafting – CAD and Civil 3D), computer aided software (Road, Bridge & Culvert design software), personal computers along with obtaining and maintaining the necessary IDOT Certifications, are essential for this position. On the job training may be necessary to acquire specific skills and to acquire and maintain the necessary IDOT Certifications that may be required.

The Duties and Responsibilities Shall Include But Not Be Limited to the Following:

Will perform design and engineering services in the preparation of construction plans for contract bids on bridges, culverts, grading and paving projects using established design standards. Will use and maintain various technical manuals, standards and engineering aids in preparation of construction plans

Will use electronic and GPS Survey equipment and Data collection equipment to obtain the necessary field information in surveys for bridge and culvert projects, grading projects, paving and resurfacing projects and miscellaneous surveys that may be assigned or required. Must be able to determine the necessary information required in a survey such as distance, elevations, slopes, etc. Must be able to use the survey information collected in the field and use with current design software to determine quantities and materials required, calculate areas of right-of-way and borrow areas needed. Will be responsible for the proper care and maintenance of highly technical survey equipment.

Will use specialized Computer aided Road and Bridge design software in the design of bridge and culvert projects, grading projects, paving and resurfacing projects and other miscellaneous drawings. Computer aided design software will be used in preparing plans for bridge and culvert projects, grading projects, paving and resurfacing projects plans for contract bids. Must be able to convert field data obtained from electronic and GPS survey equipment and data collection equipment so that computer aided design software can be utilized for design purposes.

Will utilize computers, plotters, computer aided drafting software in the design and preparation of bridge and culvert plans, grading plans, paving and resurfacing plans and other miscellaneous plans that may be assigned or required. Computer aided drafting software will be utilized in preparing final plans for receiving contract bids.

Will require IDOT Certification in Aggregate Materials Testing (Level 1 & 2), Portland Cement Concrete Plant Inspection (Level 1 & 2) and Hot Mix Asphalt Plant Inspector (Level 1). Must be able to maintain and renew each certificate as required by IDOT. Requirements for maintaining and renewing each certification will include IDOT training followed by testing with a passing score required to be certified.

Must be able to adapt and perform electronic filing of forms, reports, etc. required by the IDOT on construction projects.

Will be responsible for the proper care and operation of electronic and GPS survey equipment and data collection equipment. At times will act as instrument person on survey crew. Must have the ability or knowledge to acquire proficient skills in operating electronic and GPS survey equipment and data collection equipment. Will provide guidance and assistance to part-time survey crew members and entry level Engineering Technicians.

Will be responsible for the proper care and operation of construction testing equipment. Will use sampling templates, thermometers, slope boards, rulers, tapes, and specialized testing equipment to monitor the different phases of construction projects. Will check road crown pavement depth, collect samples, etc. Will provide guidance and assistance to part-time personnel and entry level Engineering Technicians.

Will use personnel computers, printer, plotters and computer aided drafting software along with T-squares, triangles, engineer scales, templates, and other related drafting equipment to prepare construction plans. Will provide guidance and assistance to part-time personnel and entry level Engineering Technicians.

Will be responsible for filing construction plans, updates, underground utility maps, and cornerstone books along with general engineering services and office duties. Will provide assistance and guidance to part-time personnel and entry level Engineering Technicians.

Will be responsible for inspecting contractor's work on various steps of construction and maintenance projects for compliance to contract documents and specifications. Will make minor field decisions regarding work changes and adjustments. Will be responsible for preparing and completing the necessary forms and reports associated with construction and maintenance projects. Will provide guidance and assistance to part-time personnel and entry level Engineering Technicians.

Will be responsible for preparing field books, keeping daily log information on construction projects etc. and submitting reports electronically.

Will be responsible for the field staking of bridge and culvert projects, grading projects, paving and resurfacing projects from the information shown on construction plans. Will provide guidance and assistance to part-time personnel and entry level Engineering Technicians.

Will be responsible for marking cornerstones/monuments used in project surveys by using tapes, survey chains, and other measuring devices. Will be responsible for locating and preserving cornerstones/monuments by using shovels, pick axes, air compressor with jackhammers, excavators, backhoes, etc. Will provide guidance and assistance to part-time personnel and entry level Engineering Technicians.

Will be responsible for providing guidance and assistance to co-workers (Engineering staff and maintenance personnel)

The Requirements for this Position Shall Include But Not Be Limited To the Following Items:

Graduate from High School or GED from an accredited institution, a two (2) year Associate Degree in Civil Engineering Technology or equivalent experience with an engineer or engineering field experience desired.

Must have the knowledge and ability of using mathematic principles in performing and determining field elevations, estimate plan quantities, preparing accurate pay vouchers, drafting, material testing, etc.

Must have the ability to acquire and be able to maintain IDOT Certification in Aggregate Material Testing (Levels 1 & 2), Portland Cement Concrete Plant Inspection (Level 1 & 2), and Hot Mix Asphalt Plant Inspector (Level 1). Requirements for each certification will include IDOT training followed by testing with a passing score required to be certified.

Must have knowledge and ability to operate survey equipment (both electronic and manual) including GPS survey equipment.

The knowledge and ability to utilize drafting equipment (including Computer Aided Drafting – CAD and Civil 3D), computer aided software (Road, Bridge and Culvert design software) and personal computer in the design of construction and maintenance projects.

Must be able to use computers, plotters, and printers efficiently and accurately in preparing construction plans for contract lettings.

Must have the knowledge and ability to use material testing equipment and construction inspection equipment on construction and maintenance projects.

Must be able to read, write, and accurately comprehend construction plans, maps, specifications for construction projects, etc.

Must be able to adapt to the continuing changes in technology and apply these changes in construction plan preparation, construction projects, maintenance projects, surveying, etc.

Must be able to follow and comprehend written and/or oral instruction. Must know limits of job responsibility in field.

Must be able to work with the general public in a professional manner in addition to maintaining a good working relationship with County Engineering Staff, and maintenance personnel.

The ability to proficiently establish and maintain a working relationship and convey information with co-workers, office staff, contractors, and the public.

Must be able to work and deal with personnel of Contractors in an effective manner to achieve a quality end product.

Must be dependable, conscientious and self motivated. Will know limits of responsibility in making field decision or adjustments. Will be responsible for reporting field decisions, construction plan changes, etc. to County Engineer, Assistant County Engineer, or Assistant to the County Engineer.

Must successfully complete and pass a Health Physical along with pre-employment drug and alcohol test.

Must have a valid Iowa Motor Vehicle Driver's license.

The Physical Requirements for this Position Shall Include But Not be Limited to the Following Items:

Must be able to climb steep slopes, cross fences, and other obstacles while surveying, inspecting construction projects in addition to bending, kneeling, and walking for extended periods of time.

Must be able to climb ladders and steps in collecting samples and inspecting construction projects and maintenance projects and performing daily work activities, climbing may be repetitive.

Must be able to lift and carry up to 50 pounds (Aggregate Samples, buckets of concrete for sampling, concrete beam samples, testing equipment). Lifting may be repetitive.

Must be in good health and physical condition to work out of doors in extreme heat and cold and other unfavorable weather conditions for extended periods of time in addition to standing, walking, bending and kneeling during surveying and inspecting construction and maintenance projects for extended periods of time.

Must have average eye site (with or without corrective lenses) to operate electronic survey equipment, transits, levels, computers and other office equipment in addition to performing various other job duties related to this position.

Must have average hearing (with or without hearing aid) to complete job assignments related to this position (surveying, inspection, safety, etc.).

Must be open minded, alert, and patient. Ability to listen and evaluate before making decisions.

Conduct self in a professional manner.