

## SENIOR ENGINEERING TECHNICIAN

### FUNCTION OF THE JOB

Under supervision, to perform senior level technical engineering work in the administration and implementation of projects involving the design, construction, planning, and surveying of roads and highways; performs other duties as required.

### CHARACTERISTIC DUTIES AND RESPONSIBILITIES

1. Designs elements required for the construction, repair, and maintenance of roads, highways, and bridges including alignments, profiles, cross sections, pavement configuration, drainage structures/storm sewers, culvert replacement, erosion control details, and intersection signalization plans.
2. Performs complex drafting of the above elements into project construction plans utilizing computer aided drafting and design (CADD), computer mapping geographic information systems (GIS), and other automated engineering applications.
3. Prepares or assists in preparing various technical engineering design reports.
4. Determines type and quantity of materials to be used for a project; calculates project cost estimates; prepares construction specifications and bid documents.
5. Researches and prepares right of way plats, and computes acreage and prepares legal descriptions for property to be purchased; may stamp and sign plats of survey and right of way plats if a licensed professional surveyor.
6. Supervises and directs survey operations as survey crew chief; coordinates computerized collection of survey data; provides technical instruction to the survey crew; performs complex surveys of topographical features.
7. Supervises construction staking crews on new project alignments, grading, culverts, elevations, and landscape restoration, and inspects projects for final approval.
8. Acts as a project manager by coordinating and supervising selected highway design, construction, and/or maintenance projects including preparation and evaluation of RFPs and bids, contract development and administration, inspecting and approving work, and approving payments.
9. Coordinates the Countywide road resurfacing program including evaluation and recommendation of projects, preparation, and administration of bids and contracts; samples and tests materials to ensure compliance with specifications.
10. Administers the utility permit process by reviewing and approving utility construction plans, determining fees and issuing permits, and inspecting and approving work.
11. Manages assigned elements of the department's computerized highway asset management system.
12. Coordinates activities allowing access to county highways including review of subdivision plats and certified survey maps; determines types of intersections or driveways to be constructed, special restrictions or conditions and fees; issues permits; inspects and approves work.
13. Coordinates and assigns portions of the technical and drafting work to Engineering Technicians.
14. Prepares and maintains accurate and detailed records.
15. Responds to inquiries from the public.
16. Leads work of summer interns and college co-op program.
17. Establishes and maintains effective working relationships with staff, associates, contractors and consultants, utility representatives, municipalities, and the public.
18. Maintains prompt, predictable, and regular attendance.
19. Performs other duties as required.

## QUALIFICATIONS

### Essential Knowledge and Abilities

1. Considerable knowledge of highway surveying, design, construction, and maintenance practices.
2. Considerable knowledge of the current design standards for highways.
3. Considerable knowledge of surveying and automated engineering design and drafting practices, techniques, equipment, and software.
4. Considerable knowledge of the laws, codes, administrative rules and regulations governing highway design and construction.
5. Considerable knowledge of materials and inspection practices and procedures used in highway construction.
6. Working knowledge of computerized department program software, internet access, and database, spreadsheet and word processing programs.
7. Working knowledge of the modern principles and practices of civil engineering in the areas of traffic engineering, highway and bridge design, and construction including WISDOT and AASHTO standards.
8. Some knowledge of project management methods and techniques.
9. Ability to utilize word processing, database, and spreadsheet programs.
10. Ability to utilize computerized design and drafting software.
11. Ability to plan, assign, review, and supervise operations and direct the work of others.
12. Ability to make complex mathematical computations, use sophisticated survey instruments, and do manual and computer aided design and drafting.
13. Ability to analyze data, research information, and compile detailed reports, drawings, and recommendations.
14. Ability to read blueprints, construction plans, and interpret and write specifications.
15. Ability to keep accurate records, field notes, and write technical reports.
16. Ability to establish and maintain effective working relationships with staff, associates, contractors and consultants, utility representatives, municipalities, and the public.
17. Ability to effectively interact with sensitivity with persons from diverse cultural, socioeconomic, educational, racial, ethnic, and professional backgrounds, and persons of all ages and lifestyles.

### Training and Experience

1. High School Diploma or GED.
2. Four (4) years of progressively responsible work experience including surveying, drafting, preparation of plans and specifications, and road design duties.
3. Post high school education from a recognized college or university with major courses in geology, geography, landscape architecture, civil engineering, or a closely related field may be substituted for the work experience requirement on a year for year basis up to a maximum of two (2) years.