TN TDOT
Department of
Transportation

Geodetics Technical Specialist
Region Preconstruction – Geodetics
$60,600 - $70,680 annually

Job Overview

The Geodetics Technical Specialist located in the Region will help support Project Teams directly responsible for delivering projects in accordance with the project's scope, schedule, and budget. This position will collaborate with TDOT Divisions with geodetic-related concerns and questions. Geodetic issues will range in complexity and risk from simple to highly complex. This position requires subject matter expertise and critical thinking to problem solve and make well-informed decisions that increase the safety, performance, sustainability, and efficient delivery of TDOT's transportation system. The Geodetics Technical Specialist role requires collaboration with TDOT divisions, Project Teams, consultants, contractors, and internal and external stakeholders.

The Geodetics Technical Specialist assists with proactively identifying TDOT projects with a high level of risk and pursues opportunities to identify, avoid, and/or minimize those risks. This position assists in implementing the Quality Assurance Plan that focuses on ensuring quality, minimizing variability, and providing flexibility on a risk-based scale to maximize efficiency as part of the Department's Work Program. The Geodetics Technical Specialist ensures relevant Department specifications, policies, and technical guidance are incorporated into the project delivery process. This position must effectively articulate technical concepts through training, mentoring, and collaborating as part of a matrix organization.

Essential Job duties of the TDOT Technical Specialist I, II, and III include:

Assist in the production of survey products for all deliverables in OpenRoads Designer (ORD), supporting all survey activities in the Project Delivery Network (PDN). As a geodetic SME, be a Regional resource assisting in production and quality assurance of common survey products including: ROW and property/easement boundaries of increased complexity and limited evidence; railroad title surveys; LiDAR data survey extraction; aerial structure from motion survey extraction; regional, corridor and project level control. Serve as the SME for the Regions' GIS-based technology, including digital elevation models (DEM) and both aerial and mobile LiDAR with LAS and LAZ outputs.

Work with HQ to implement and seamlessly transition to new coordinate systems and assist with managing all geodetic data across active coordinate systems and foot definition changes. Assist the Senior Technical Specialist with geodetic control for the Region Quality Team, ensuring the precise development of regional, corridor and project level control monumentation.

Assist in ensuring all Geodetic deliverables are accomplished in alignment with TDOT's Quality Management guidelines to deliver consistently high levels of quality and achievement, reduce errors, mitigate risk to the Department, and establish a track record of success.

Remain current with applicable geodetic methods, standards, processing procedures, and guidelines related to geodetics; maintain collaboration with the transportation industry to enhance the work of preconstruction teams through the implementation of new technologies and national best practices; and assist with the implementation of policies and procedures related to geodetics.

Provide exceptional customer service to internal and external customers, exercise effective listening skills, assist in the implementation of policies and procedures related to geodetics, provide prompt responses, maintain complete and accurate documentation, and communicate effectively.

Assist in the research and creation of existing property files and maps. Assist in the creation of legal descriptions for the acquisition of all types of proposed property rights for TDOT projects.

Additional Job duties for the TDOT Technical Specialist II and III include:

Collaborate with Project Teams as part of a matrix organization by assisting with defining the scope of work related to geodetic tasks; provide recommendations to reduce geodetic-related project risks. Provide expertise, training, and mentoring to TDOT staff, consultants, and local agencies regarding geodetic-related issues and considerations. Assist with proactively assessing geodetic-related risk factors on projects and work with project teams to minimize potential impacts on project scope, schedule, and budget. Provide recommendations for data collection and geodetic-related processing procedures.

Guide and verify as a technical advisor the quality of geodetic data collection and data analysis for: horizontal, and vertical control using conventional survey equipment; drone-derived data sets; LiDAR data; and three-dimensional data analytic software outputs. Assist field crews in scope and setup of UAS flights for data collection.

Additional Job Duties for the TDOT Technical Specialist III include:

Coordinate with the Geodetics Manager in providing assistance to the TDOT Technical Training Director for the development and delivery of Geodetics training that addresses project and program specific modeling and analysis guidance, creating statewide transparency and consistency, inspiring new ideas, and developing skills. Provide mentoring to TDOT staff and consultants with respect to Geodetics.

Assist the Geodetics Quality Team and Project Managers as a geodetic Subject Matter Expert (SME) by providing quality assurance reviews of Project Team and consultant-led project deliverables and products. Assist with making geodetic recommendations for Project Teams preparing a project's scope, schedule, and budget.

Oversee and guide the reestablishment of property boundaries and easements for TDOT surveys, providing expertise in Tennessee boundary surveys.

Independently produce survey products for the Geodetics office in the Project Delivery Network (PDN) and ensure quality in deliverables from the regional quality team.

Utilize GIS technology and software for DEM modeling, aerial photogrammetry, and LiDAR processing for feature extraction.

Support the creation and checking of specialty title reports and survey products for railroad and federal land projects.

Qualifications

TDOT Technical Specialist I

- Bachelor's Degree

TDOT Technical Specialist II

- Bachelor's Degree
- 1 year of demonstrated competency in geodetics.

TDOT Technical Specialist III

- Bachelor's Degree
- 2 years of demonstrated competency in geodetics.

The Tennessee Department of Transportation reserves the sole right in determining the level of position based on the applicant's work experience, education, skill level, and all other appropriate factors, including business needs. Within 6 months of hire, employees must demonstrate successful mastery of corresponding work competencies and skill blocks of the Technical Specialist Competency Program for the level of worker for which they were hired. If skills and competencies are not met during that period, the employee can be demoted to the level of worker for which he/she is qualified.

Ideal Candidate

This position is a career path series within TDOT. The Geodetics Technical Specialist I, II, and III demonstrate a combination of technical expertise, analytical skills, and effective communication abilities. They have solid technical skills and use data-driven insights to help improve future transportation systems. They possess a collaborative spirit and can work effectively within a matrix organization, always willing to continuously update their knowledge as technology and data analytics advance.