



## Job Specification

**Position Title:** SENIOR PARTY CHIEF  
**Job Code:** OPSEU - Eng Surv Support B/U TEN15, 95603  
**Job ID:** 33433

### **Purpose of Position:**

To plan, supervise and direct a survey crew(s) in performing or assessing engineering surveys, control surveys and other data collection for the planning, design, construction and operation of transportation facilities, and legal surveys for the acquisition and disposal of property.

### **Duties/Responsibilities:**

Under the administrative supervision of the Senior Surveyor and technical supervision of a project manager: 1) Planning and executing, supervising and participating in the work of a survey crew(s) engaged in performing or assessing engineering, legal and control surveys for the preparation of reports, plans, engineering drawings, DTMs (digital terrain models). 2) Recording of survey data in manual and/or automated format; completing or verifying mathematical computations utilizing electronic calculators and/or computer; ensuring surveys are performed in compliance with statutory and ministry requirements, and reviewing in-house and consultant survey returns for accuracy, format and completeness. 3) Communicating with direct reports, public, landowners, municipalities, other ministries and agencies to explain survey purpose and requirements and to acquire and exchange information. 4) Performing administrative work related to conducting surveys; arranging for accommodation/travel arrangements for survey crew(s); ensuring that vehicles are available and operational; recommending approval of time sheets (overtime and travel time verification) and expense claims of survey crew(s) and; ensuring the proper care and maintenance of equipment used in survey work. 5) Communicating to supervisors the method by which the survey was conducted, the results of the survey, the problems encountered and the reasons for the decision as to method of survey. Provide technical guidance and instruction to staff on survey practices and procedures. 6) Travelling extensively within the Region operating ministry vehicles to transport survey crew and equipment. 7) Complying with all occupational health and safety acts, regulations and guidelines. 8) Provide recommendations on new methodologies, software and equipment. 9) Other duties as assigned by Management.

### **Knowledge:**

1) Job requires knowledge of the theories, principles and techniques of legal, engineering and control surveying and the use of current survey equipment (e.g. global positioning system satellite receivers, data collectors, total stations, electronic levels) to direct, supervise staff and trouble shoot all aspects of the survey (e.g. planning, site reconnaissance, data collection, analysis and processing) when collecting field data for the planning, design, construction and operation of transportation facilities. 2) Job requires knowledge of applied survey related mathematics (geometry, trigonometry) in performing coordinate geometry, simple and spiral curve calculations, adjustment procedures, closure techniques and computer hardware (e.g. data collectors, laptop computers, printers) and application software (e.g. data collection, COGO, CADD) to perform calculations to set survey traverse points, horizontal alignments, monumentation and verify field closures and download, process, analyse and edit field data necessary for the planning, design, construction and operation of transportation facilities. 3) Job requires knowledge of survey terminology and standards (e.g. feature codes) to interpret survey requests and plans and to prepare field notes/reports to capture all the data necessary for the preparation of pre-engineering plans and documentation. 4) Job requires knowledge of legal survey practices and procedures, common law principles (e.g. priorities of boundary evidence assessment), statutes and regulations (e.g. Registry Act, Land Titles Act, Surveys Act, Surveyors Act) to ensure conformance and to enable office preparation of legal survey plans by conducting thorough research and field investigation, by supervising the collection of sufficient field measurements, setting appropriate monumentation and preparing the field notes and reports that may be called into evidence in a court of law. 5) Job requires knowledge in the use of aerial photography by interpreting and comparing features on the photos to the features on the ground in order to efficiently complete legal, engineering, and project control surveys by retracing legal boundaries using topographic features, laying out new road alignments and revision lines, and by conducting surveys of airport sites, gravel pits and placing ground targets for aerial mapping controls. 6) Job requires knowledge of occupational health and safety legislation, ministry guidelines, traffic control procedures and equipment in order to provide a safe work environment for the survey crew (e.g. gas detection devices, wearing fall arrest harnesses in the vicinity of rock cuts, wearing life jackets near waterways, using lane closures for high speed/volume traffic areas, monitoring traffic and weather

conditions) and safety for the travelling public by conducting regular safety meetings with crew and by planning, implementing and documenting the most appropriate safety practices and survey methods. 7) Job requires knowledge of project control and geodetic principles (e.g. coordinates, combined scale factors, central meridians and zones, horizontal datum such as NAD 27, NAD 83, CSRS, vertical datums such as NAVD 29 and map projections such as UTM and MTM) and horizontal and vertical databases (e.g. CSIS and COSINE) in order to perform and assess the quality of horizontal and vertical project control and surveys used for horizontal and vertical control sheets. 8) Job requires knowledge in standard office procedures and software to complete administrative duties (e.g. time sheets, expense accounts and e-mail).

**Staffing and Licensing Requirements:**

Valid Ontario Class G Driver`s Licence and an acceptable driving record.

**Skills:**

1) Job requires interpretative and evaluative skills to review survey requests in order to determine time estimates and initiate appropriate survey methodology (e.g. GPS vs. total station) and extent of survey data pick up required to satisfy the requester`s purposes considering conditions such as anticipated construction, traffic volume, terrain, possibility of alignment changes, size of survey and safety conditions. 2) Job requires analytical skills for reviewing and verifying that mathematical computations of existing and new survey data is accurate and complete prior to forwarding for final plan preparation. 3) Job requires research skills to gather information in conducting legal and engineering surveys (e.g. interviewing property owners to obtain oral and physical evidence of boundary locations, investigating survey plans and documentation from Land Registry Office title searches to acquire boundary evidence, obtaining engineering information from municipalities and utilities). 4) Job requires analytical and evaluative skills in assessing conflicting evidence (e.g. overlapping deed descriptions, survey measurements do not agree with existing plan dimensions, and priority of title) in order to re-establish highway right of way limits, easements and intersecting property lines. 5) Job requires analytical and evaluative skills when reviewing field data results (e.g. computer input/output, closure reports) to determine completeness and accuracy of the field data and deciding if errors, given surveying conditions, should be accepted or are significant enough to require adjustments to data based on further investigation or field work. 6) Job requires analytical and interpretive skills in the use of aerial photographs to assist in performing various types of surveys (e.g. location of sites, access to sites, retracing legal boundaries using topographic features) including airport and gravel pit site plans. 7) Job requires interpersonal skills to respond courteously to questions and concerns from the public and property owners while conducting surveys, to explain the purpose of the survey and to resolve interpersonal issues between crewmembers. 8) Job requires written and oral communication skills to make field notes and survey reports (communicate the method by which the survey was conducted, the results of the survey, the problems encountered and the reasons for the decision as to method of survey), to train and direct members of the crew, to investigate complaints and to consult with municipal authorities, MTO engineering staff, consultants and Land Registry staff to clarify survey problems and to acquire and exchange survey information. 9) Job requires evaluative skills and judgement to identify occupational health and safety issues and hazards (e.g. working in the vicinity of rock cuts, waterways, railways, underground or overhead utilities, and high speed/volume traffic areas) to determine proper traffic control procedures, safety equipment and survey methods in order to provide a safe work environment for the survey crew, and safety for the travelling public. 10) Job requires maintenance and minor repair skills of survey equipment (e.g. chainsaws, rock drills, steel measuring tapes) to ensure that equipment is operational. 11) Job requires adaptive skills to adjust to new technological changes, new application software and new business processes.

**Freedom of Action:**

1) Job requires working in accordance with ministry policies, procedures, legislative requirements and standards as outlined in ministry manuals, guidelines and regulations. 2) Job may require prioritising, or responding to need, the sequence of surveys to be undertaken, planning the sequence for specific tasks or functions to be performed and coordinating the activities of the survey crew taking into account factors such as the weather, traffic conditions, and availability of information. 3) Job requires working with considerable latitude in resolving problems encountered in the course of the survey and in responding to other circumstances (e.g. GPS problems, conflicting survey evidence, need for additional engineering survey coverage, inappropriate property acquisition request, alignment problems), by deciding on action to be taken, (e.g. alternative approaches to the survey, further investigation/field work, refer unusual or complex problems to the project surveyor/manager). 4) Job requires coordinating on site functions for conducting surveys (e.g. on site visits of utility companies for location of underground services, and arranging for lane closures/ safety equipment and procedures for varying terrain conditions). 5) Job requires coordinating all field resources (equipment and staff including multiple crews on occasion) to complete in-house survey projects and assess consultant survey deliverables. 6) Job requires administrative supervision of the employees on a survey crew(s), (e.g. recommending approval of time sheets and expense claims of survey crew(s), arranging transportation and accommodations). 7) Job requires providing technical advice and instruction on survey practices and procedures to the survey crew when planning and performing surveys. 8) Job requires purchasing and arranging for provision of supplies and equipment and material, (e.g. paint, sledge hammers, batteries) within approved limits, using purchasing card. 9) Job requires determining when survey or other work

undertaken by the crew is complete and accurate.