



IDENTIFICATION

Department	Position Title	
Infrastructure	Technical Officer – CAD/Graphics	
Position Number	Community	Division/Region
33-7342	Yellowknife	Design and Technical Services Air & Transportation

PURPOSE OF THE POSITION

The Technical Officer - CAD/Graphics is responsible for the analysis and coordination of the Division's drawing production and management through the integration of the division's CAD (computer aided design), civil/structural design, mapping and asset management applications. The position provides technical expertise, support and recommendations in the use of the development of automated engineering design and technical and graphic drawing production and management services to department staff in Yellowknife as well as regional offices.

SCOPE

The position is located in Yellowknife and reports to the Manager, Design and Technical Services – Air & Transportation.

The Technical Officer – Drawings Coordinator provides specialized technical advice, leadership, support and recommendations to all areas of the division's engineering and graphic drawing production and management applications and systems, and is expert in CAD, drawing and mapping applications and technical and graphic production and management.

The incumbent provides a wide range of technical drawing and graphic illustration/presentation expertise, services and support associated with the production of plans and drawing for departmental and divisional programs as well as detailed and standardized engineering mapping and cartographic drawings used for the illustration of planning and construction of transportation infrastructure and other transportation related initiatives in the Northwest Territories (NWT). This position maintains the division's digital drawing and engineering data management system and, as the coordinator for the division's drawing production and management applications, plays a central role in achieving and enhancing the division's ongoing program delivery and business objectives.



The position responds to over 400 work requests each year. The size of the work requests will vary from large multi-year, multi-million-dollar project driven requests, requiring extensive coordination, integration of various engineering, drawing, mapping and graphic applications, multi-page productions and calculations to simple requests for printing or plotting services.

The incumbent works with staff at all levels within the division and department to ensure that technical drawing and graphics production and support needs are satisfied, and that the use of automated engineering design and drawing production and management services are efficient.

RESPONSIBILITIES

1. Provides technical drafting and drawing production and management expertise and services by:

- Creating tender, contract and as-built drawing packages from data provided by engineering staff, through integration of CAD, Survey, Earthworks and other project management computerized applications.
- Preparing a variety of maps, graphs, and charts for the purpose of graphic illustration and/or presentations.
- Creating conceptual and other drawings for department and divisional requirements.
- Generating design and final volume and other quantity take-off calculations necessary for preparing highway development estimates and final payments.
- Reviewing drawings to ensure that they conform to industry and divisional standards and meet specific project requirements.
- Reviewing drawings with project supervisors to ensure completeness and accuracy of drawings.
- Ensuring that all drawings, maps and plans are entered into electronic data management system for each archival referencing, filing and retrieval.
- Interpreting, entering, adjusting and compiling design and as-built plans and drawings into the digital library according to Divisional standards.
- Maintaining divisional drawings and graphics digital libraries.
- Performing geospatial/UTM coordinate conversions.

2. Provides recognized technical expertise and advice on matters associated with technical drawings and electronic data management by:

- Interpreting, reviewing, updating and implementing national and divisional standards.
- Supporting managers and other project delivery staff with earthwork design projects by leading and/or assisting with manipulation of topographic survey and geotechnical data, creating project design data and design files and generating design drawings, quantities and contract packages, using the division's earthworks design and CAD applications.



- Ensuring technical information is complete, accurate and current and the the information is in the correct file format.
- Collaborative consulting with the Manager, Design and Technical Services – Air & Transportation as well as other program delivery team members, in the provision of continued development and improvement in the delivery of drafting and graphic illustration services.
- Providing technical advice and training to divisional and headquarters staff and regional offices on technical drawings and graphics preparation and presentation.

3. Responsible for the compilation of data necessary for the preparation and delivery of project drawings and reports and other information requests by:

- Collating and transferring field survey data, geotechnical investigation results, design, aerial photo and topographic/terrain information and preparing plan and profile illustrations and project contract drawings. This involves a thorough knowledge of survey data collection methods and note keeping, geotechnical classification and requires the ability to interpret aerial photography and computer printout results.

4. Provides research, analysis and advice by:

- Analyzing and interpreting topographical maps, legal survey plans and aerial photos.
- Researching, interpreting and recommending design criteria, standards and practices.
- Providing expert technical advice to the departmental and divisional information technology plans and computerized design and drawing hardware and software acquisitions.

WORKING CONDITIONS

Physical Demands

No unusual demands.

Environmental Conditions

No unusual demands.

Sensory Demands

No unusual demands.

Mental Demands

The incumbent is often required to address requests that require rapid response and immediate re-prioritization of workload.



KNOWLEDGE, SKILLS AND ABILITIES

- Technical knowledge in the latest drawing production and management technologies including Geographic Information systems (GIS) and other mapping and data management applications.
- Knowledge of specialized earthwork design and asset management applications, including AutoCAD and AutoCAD Civil 3D.
- Knowledge of transportation infrastructure related engineering drawings, plans, maps and presentation drawings.
- Knowledge and interpretive skills with respect to topographic and legal survey and geotechnical collection techniques and terminology.
- Knowledge of digital data/drawing management methods and security.
- Knowledge and experience in collaborative decision-making processes, mediation and problem solving with focus on tact and diplomacy.
- Analytical, conceptual and strategic thinking skills to evaluate and resolve complex issues and develop suitable approaches and options to effectively deliver programs.
- Project management skills that include research and analytical skills, and the ability to conceptualize, plan and implement and evaluate projects/work requests.
- Proficient computer and software application skills related to word processing, spreadsheet and the internet.
- Skilled in drawing standards relating to the production of tender and contract documents.
- Ability to use CAD file standards relating to the use and maintenance of the divisional digital file library.
- Ability to analyze and interpret highway infrastructure design standards and criteria, to interpret analyze and use aerial photographs and analyze computer printout results and use printing and plotting equipment.
- Utilize creativity and innovation during the preparation of presentation drawings.
- Use tact and professionalism to effectively communicate with all levels of engineering planning and project staff, with clients who have limited knowledge of highway and CAD drawings, and when responding to multiple concurrent work requests.
- Act confidently in challenging situations to accomplish tasks and select an effective approach to a task or problem, provide information and support to divisional and other program staff, all of whom may view their requirements as a priority, establish priorities within the context of available time.
- Communication skills that include the ability to listen, comprehend and respond to the underlying issues and to people's needs and concerns in a proactive manner, consult with clients to maximize involvement and support through demonstrated commitment to cooperation and teamwork.
- Work in a team environment where tasks and activities are highly integrated and where recognizing other team members' requirements, input and objectives is essential in order for the incumbent to achieve his or her own objectives.



- Ability to establish effective working relationships with senior management, peers and clients that support mutual goals and objectives.
- Ability to undertake projects/ work requests with limited guidance or direction.
- Work effectively in a variety of cross-cultural situations.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion and cultural awareness, as well as safety and sensitivity approaches in the workplace.

Typically, the above qualifications would be attained by:

A post-secondary diploma in civil engineering technology, architectural technology, construction technology or GIS technology, with two (2) years of experience in civil engineering works.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

Position Security (check one)

- ☒ No criminal records check required
- ☐ Position of Trust – criminal records check required
- ☐ Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

- ☐ French required (must identify required level below)

Level required for this Designated Position is:

ORAL EXPRESSION AND COMPREHENSION

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

READING COMPREHENSION:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

WRITING SKILLS:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

- ☐ French preferred

Indigenous language: Select language

- ☐ Required
- ☐ Preferred