Reclassification

Ministry

Transportation and Economic Corridors

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Construction Engineer

Current Class

Engineering & Related Level 2

Requested Class

Engineering & Related Level 1

Job Focus

Operations/Program

Supervisory Level

00 - No Supervision

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

☐ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

Responsibilities Added:

Assistant project manager duties in support of the senior engineers in completion fo regular duties
Take lead role in delivery of municipal cost share projects.
Partake in engineering assignments from other sections to gain a broad understanding of all Transportation project processes.

Responsibilities Removed:

Senior Engineer project manager duties. Duties involved in the the delivery of complex construction projects.

Job Purpose and Organizational Context

Why the job exists:

Reporting to the Construction manager, this junior level position requires university graduation in Engineering and 1 to 2 years of transportation engineering related experience. Work is assigned directly by the manager or is in support of responsibilities assigned to senior engineering positions. The position will mainly involve assisting the senior construction engineers in the delivery of assigned highway rehabilitation

projects and major highway capital projects.. The junior engineer will assist senior engineers in defining project requirements with clients, coordinating the activities of in-house team members, private sector consultants and contractors, develop project implementation from initiation to closeout to ensure project scope, time, cost and quality objectives are met. As experience is gained and independence increased, the successful incumbent will assume greater responsibility and be encouraged to compete on higher classification positions.

In general a Construction Engineer ensures all phases of project activities from beginning to completion comply with government and ministry legislation, policies, guidelines, transportation industry regulations, standards and procedures. A key component of the engineer position is is working with stakeholders and industry to achieve results, requiring extensive professional knowledge of project management principles and methodologies including knowledge of highway engineering, procurement, planning, programming, design and construction disciplines.

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

1. Assist senior engineers in administering a wide range of construction projects from start to finish using project management methodologies, principles and practices to ensure timely progress and quality of construction, cost control and resolution of issues.
- Assist in overseeing construction projects from conception to completion ensuring projects are managed within a safe work environment and delivered within scope cost, time and quality.
- Assist in coordination with a team of professionals of different disciplines (planning, design, utility coordination, construction) to achieve the best results.
- Assist in establishing desired outcomes and measurement of performance of project.
- Assist in the creating and maintaining a design and construction issues and resolution log that identifies risks and develops risk management strategies on the projects.
- Assist in determining the required resources (manpower, materials, equipment) from start to finish with attention to budgetary limitations.

2. Take lead role in delivery of municipal cost share projects
- Draft Memorandum of Agreements or Memorandum of Understandings with Municipalities for the delivery of more minor projects such as intersection upgrades along provincial highways.
- Conduct the required stakeholder consultation with the affected municipality.

3. Assist with administering of highway projects, to ensure a timely, safe and efficient delivery of the department's highway construction and rehabilitation programs:
- Utilize any available planning studies, geometric assessments, intersection safety assessments, accident statistics, surfacing strategies, bridge reports, geotechnical reports and environmental studies in preparing terms of reference for consultant proposals
- Assist with the review and assessment of consultant proposals and provides input on consultant selection
- Assist with reviewing designs to ensure that the department standards are being met
- Assist with reviewing conditions of land agreements and liaisons with appropriate consultant to ensure all conditions of sale are met
- Assist with reviewing the tender package to ensure that contractual requirements are being met and assist in the tendering process.

4. Contract administration and construction supervision of highway projects:
- Regular administrative duties consist of assisting senior engineers with the following:Administrative controls for projects are maintained by:
· Review and provide comments on the Environmental Construction Operation (ECO) plan and the Traffic Accommodation Strategy
· Co-Chair the pre-construction meeting, as required.
· Review weekly reports, progress estimates and monthly expenditure reports
· Review and recommend consultant fee/scope changes, personal change approvals, and contract unit prices requests and extra work orders
· Monitor and control project costs during all phases of the projects to ensure adequate funds are available to complete the projects
· Review utility crossing agreements and utility conflicts and accesses the need for adjustments and cost responsibility
· Coordinate project scope with Alberta Environment, Department of Fisheries and Oceans, and the National Coast Guard

· Liaise and coordinate efforts with other government agencies, stakeholders, and the public
· As an expenditure officer, approve payments of progress estimates and monthly expenditures
· Review final details and final contract payment
· Review and authorize consultant invoices to ensure compliance with the agreement
· Monitor and evaluate consultant performance and complete the evaluation form which is utilized for future project consultant selection.

• Regular field duties in support of the senior engineers include:

· Recommend modifications to the traffic accommodation and safety procedures
· Review the performance of the ECO Plan during site visits.
· Monitor and discuss construction techniques and procedures with the engineer consultant to ensure construction is in compliance with the department's specifications
· Review materials testing and sampling procedures and results

Attend bi-weekly construction meetings, as required

· Ensure that the consultant's staff is performing in accordance with the agreement
· Monitor the construction scope of work
· Mediate any disputes between stakeholders including contractual interpretation

Resolve through negotiation and mediation, conflicts arising from landowners or stakeholders
Monitor construction progress, and reviews contract quantities and estimated project costs

· Review field design changes and provide comments and recommendations

5. Develop network and collaborate with stakeholders to ensure expectations are met and addressed:

• When included with projects, liaise with First Nation regarding project implementation within first nation reserves and discusses employment opportunities and equipment usage
• Liaise with contractors, consultants, landowners, utility owners, elected officials, local communities leaders, highway user groups, environmental agencies and special interest groups, municipal officials, other government agencies and officials and the general public, throughout the life cycle of project
• Participate in the public consultation process as a representative for the department
• Participate in group meetings with local landowners, municipalities and highway user's organizations to obtain input regarding stakeholders' needs, keeping them informed of current program developments
• Evaluate engineering proposals by local municipalities for future construction feasibility and the probability of associated problems and risks

6. Learn processes from other section including Bridges, Operations and Infrastructure:

• Liaise with the departments Infrastructure and Operations staff regarding Project identification, Planning, Project Scoping and, Programming to learn the impact each section has on construction projects and get a good basic understanding of a project cycle.
• Participate in engineering assignments from other sections, including Bridges, Operations and Infrastructure to gain a general understanding of how Transportation delivers all project types.

Problem Solving

Typical problems solved:

The position is required to assist in determining how to invest limited resources in department infrastructure and initiatives, where decision-making may require prioritization between competing requirements, to the detriment of some interests.

Balancing technical interests versus stakeholder interests.

Types of guidance available for problem solving:

The Construction Engineering will rely on the Senior Engineers for support, but will also be expected to learn and understand the requirements of the Departments Highway Geometric Design Guide as well as the Enginnering Consultant Guidelines. Highway Geometric Design Guide. The Project Administration Manual is also a great source of information for delivering projects.

Direct or indirect impacts of decisions:

Decision making may impact safety, infrastructure asset management, stakeholder relations and fiscal resources.

Key Relationships

Major stakeholders and purpose of interactions:

External stakeholders include contractors, consultants, local landowners, utility owners, environmental agencies and

interest groups, highway users, other government departments (municipal, provincial and federal), Local MLA's and the general public. Internal stakeholders include all sections located within the Red Deer office including Infrastructure, Operations, Bridges and Administration

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Engineering		

If other, specify:

Job-specific experience, technical competencies, certification and/or training:

- Bachelor Degree in Engineering or related technical diploma and eligibility for membership with APEGA.
- 1 to 2 years of related experience in transportation engineering and/or civil engineering
- Basic understanding of highway planning, design, and the construction specifications and process, including the application of project management principles
- Basic understanding of general construction practices and procedures and strong knowledge and understanding of construction contract documents and specifications and their interpretations
- Basic understanding of the roles and responsibilities of the complete design team in a project setting
- Basic understanding of the roles and responsibilities of the department, consultant and contractor, on construction contract projects
- Basic understanding of environmental requirements and how construction activities may impact them (DFO, AE)
- Basic understanding of departmental and national highway design and operation guidelines and standards
- Basic understanding of departmental consultant guidelines, contract administration manual, project administration manual, traffic accommodation through construction zone manual, etc.
- Basic understanding of procedures related to land (right of way) acquisition and expropriation
- Strong negotiation and problem solving skills
- Strong written and oral communication skills
- Excellent organizational skills and time management skills
- Ability to handle a number of multi-disciplinary projects simultaneously and meet deadlines.
- Ability to resolve conflicts and make immediate decisions
- Ability to analyze situations and problems and provide innovative solutions to complex problems
- Computer software applications skills including the MS Software Suite of programs

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level A B C D E	Level Definition	Examples of how this level best represents the job
Creative Problem Solving	○ ○ ○ ◉ ○	Works in open teams to share ideas and process issues: • Uses wide range of techniques to break down problems • Allows others to think creatively and voice ideas • Brings the right people together to solve issues • Identifies new solutions for the organization	Liaises with and coordinates specialists from TEC, consultant and contractor (plus possibly others) when dealing with design or construction issues.
Systems Thinking	○ ○ ○ ◉ ○	Integrates broader context into planning: • Plans for how current situation is affected by broader trends • Integrates issues, political environment and	While dealing with specific individual projects needs to be able to keep a step back to ensure values are met and outcome aligns with TEC perspective.

		risks when considering possible actions • Supports organization vision and goals through strategy • Addresses behaviours that challenge progress	
Develop Networks	○ ○ ○ ◉ ○	Makes working with a wide range of parties an imperative: • Creates impactful relationships with the right people • Ensures needs of varying groups are represented • Goes beyond to meet stakeholder needs • Ensures all needs are heard and understood	Any project will involve interactions with stakeholders. Needs to make sure they have their needs addressed if possible or taken on board if not directly feasable.
Agility	○ ○ ○ ◉ ○	Proactively incorporates change into processes: • Creates opportunities for improvement • Is aware of and adapts to changing priorities • Remains objective under pressure and supports others to manage their emotions • Proactively explains impact of change on roles, and integrates change in existing work • Readily adapts plans and practices	Needs to embrace change at project and department level.

Benchmarks

List 1-2 potential comparable Government of Alberta: Benchmark