

Contract Administration Services (CAS) DEIE01 – Technical Brief – Design Engineer (Electrical) Level 1 Qualifications and Experience

To be considered for the Contract Administration Services (CAS) prequalification levels, applicants must satisfy the mandatory qualification, prerequisite level and mandatory experience requirements.

Academic / Professional Qualifications – Mandatory

- A degree in Electrical Engineering or an equivalent Civil Engineering qualification, which is accepted by the Institution of Engineers Australia as a full Member (MIEAust), and
- Registration as a Registered Professional Engineer of Queensland (RPEQ).

Prerequisite level

- Nil.

Academic / Professional qualifications – desirable

- Nil.

Roles and responsibilities

Role:

The Design Engineer (Electrical) is responsible for providing professional technical advice and consulting services in the planning, design and construction procedures of Intelligent Transport Systems (ITS) and electrical projects to ensure a high level of quality is maintained, legal obligations are certified and to ensure fitness for purpose.

There are two Design Engineer (ITS / Electrical) related roles to select from (defined by different levels of experience). The scope, value and complexity of the infrastructure contract must be considered when selecting a Design Engineer (ITS / Electrical). The below table provides some guidance:

Level	Class of Work Description
DEIE01	Low to medium value Design and Construct contracts with ITS / Electrical component value (construction cost) less than \$2M, and Low complexity works (i.e. street lighting only)
DEIE02	High value Design and Construct contracts with ITS / Electrical component value (construction cost) greater than \$2M, and Medium to high complexity works (i.e. Managed Motorways)

Responsibilities:

- Plan and review the engineering drawings and specifications.
- Participate in engineering and planning investigations.
- Analyse technical problems, assessing the feasibility of proposed techniques and procedures, and devising new approaches and alternative solutions.
- Coordinate work with project manager, and guide junior professionals and technical personnel on the design and drafting of preliminary and final plans.



- Oversee quality control, maintaining quality standards in all work produced, and checking computations or reviewing designs and drawings performed by others.
- Manage projects by coordinating with the client, directing the design review process, coordinating the design review team, which may include other disciplines.
- Undertake reviews of both temporary and permanent works designs on design and construct contracts to ensure compliance with contractual requirements, project brief, technical standards and legislation.
- Coordinate reviews undertaken by specialist designers internal and external to Transport and Main Roads and facilitate mutually agreeable outcomes to design issues between design reviewers and designers.
- Conduct assessments of electrical and ITS infrastructure to ensure quality and compliance with departmental design standards and prepare reports on recommended engineering solutions to particular problems.
- Provide engineering advice for the works, including testing and product specifications.
- Prepare contract documentation, supplementary specifications and specification annexures for construction, rehabilitation, and maintenance activities.
- Review electrical and ITS designs prepared by consultants and design staff to ensure fitness for purpose and compliance, and
- Provide engineering expertise and mentoring to the operation of the team.

Experience – Mandatory

- A minimum of five years of post-RPEQ registration experience or a minimum of eight of substantial post graduate experience in the application of ITS and electrical engineering planning and design principles and methodologies as they apply to planning, design, construction, rehabilitation, and maintenance projects.
- Extensive experience in the construction, commissioning and maintenance of ITS elements e.g. cameras, loop detectors, ramp metering, Variable Message Signs (VMS), enhanced VMS (eVMS), Lane Use Management (LUMS), Variable Speed Limit (VSL) signs, and road lighting on road infrastructure projects.
- Demonstrated interpersonal and communication skills, verbal and written, including the ability to establish good working relationships with customers and stakeholders at all levels, and deal with situations requiring consultation, negotiation and conflict resolution.
- Proven commitment to the principles and practice of:
 - Ethical conduct, Equity and Diversity, and Workplace Health and Safety.
 - Customer Service.
 - Quality management and client-oriented service, and
 - Risk management.

Experience – Desirable

Experience in the preparation of documentation and project briefs as follows:

- AS 2124 style of contracts such as:
 - Transport Infrastructure Contracts – Construct Only (TIC-CO), and
 - Transport Infrastructure Contracts – Sole Invitee (TIC-SI)
- AS 4300 style of contracts such as:
 - Transport Infrastructure Contracts – Design and Construct (D&C)
 - Relational contracts
 - Collaborative Project Agreements (CPA), or
 - Alliance.

Information Required

- Your CV should, as a minimum, provide details of skills, experience, and key achievements from your last three projects that pertain to **this** engagement.

