

PART P85
DETAILED DESIGN

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1. GENERAL

- .1 This Part specifies the requirements for preparing the Detailed Design. It provides guidance where Detailed Design forms part of a consultancy agreement and is not applicable in the instance of a Design and Construct Contract. It is to be used in conjunction with the DPTI Special Conditions of Contract and AS 4122. If Reference / Concept Designs are to be undertaken, Part P80 Reference Design also applies.
- .2 "**Detailed Design**" means a design of the Preferred Concept / Reference Design which is:
 - (a) sufficiently detailed for use in construction without further information; and
 - (b) is suitable for inclusion in a Request for Tender for construction of the works.
- .3 The following documents are referenced in this Part:
 - (a) AS4122 General Conditions of Contract
 - (b) P80 Reference Design

2. REFERENCES

- .1 The design of the Works shall:
 - (a) comply with the requirements specified in the DPTI: Road Design Standards and Guidelines (available via internet <http://www.dpti.sa.gov.au/standards>); and
 - (b) enable construction to take place using Master Specification Divisions R "Roadworks", CC "Concrete, S "Structures" and L "Landscaping" as appropriate to the Works, available from http://www.dpti.sa.gov.au/contractor_documents/specifications
- .2 Unless the prior written approval of the Principal has been given, the following shall apply to the interpretation of standards, guidelines and codes:
 - (a) where "Desirable" and "Absolute" design limits are provided for, the Desirable shall apply, unless the "Desirable" design limit cannot be achieved within the constraints specified for this Study; and
 - (b) where an item, approach or option is expressed in terms such as "should", "may be", "recommended", "suggested", "desirable" or "advisable", the item, approach or option referred to shall be deemed to be a mandatory requirement.

3. DESIGN PROCESS**General**

- .1 The Reference / Concept Design and the Project Design Brief shall be used in the design development process to prepare the Detailed Design. The Contractor shall assess and verify that the Concept Design and the Project Design Brief are appropriate during the course of preparing the design. At a minimum, the activities specified in this clause shall be undertaken by the Contractor during the design process.
- .2 The Detailed Design shall be prepared to a standard and level of detail such that the works can be constructed from the Design Documents without the need for further clarification or amendment.

Review of Survey

- .3 The Contractor shall review survey provided by the Principal and advise the Principal of any additional survey that needs to be provided.

Cost Estimates

- .4 The Principal may prepare and / or update project cost estimates. The Contractor is required to provide information in a suitable format for this purpose and liaise with the estimates if necessary.

Commented [D1]: Part D14 "Proof Engineering" and / or Part D13 "Road Safety Audits" may be required

Integration with Current Consultancies

- .5 The design activities may require significant integration with activities by carried out by other Contractors (eg planning, environmental, stakeholder consultation) on behalf of the Principal. The Contractor must attend regular meetings with the Principal, other Contractors and stakeholders.

Stakeholder Consultation

- .6 The Contractor shall assist the Principal's project team in consultation with relevant key stakeholders including local councils and authorities to address traffic management and permanent works on the local road network;
- .7 The Contractor shall attend site visits, during the design with officers from DPTI as specified by the Principal. One of which may be at the completion of the preliminary design, to verify the design against the existing on site conditions. The Contractor's design manager and the principal designers in relation to the location to be inspected shall be present at the site visits; and
- .8 The Contractor shall attend regular scheduled design and stakeholder meetings for the duration of the contract, one of which will be held on site and other meetings as and when required at the location specified by the Principal with suitable prior notice. The Design Manager and the principal designers in relation to the area to be inspected shall be present at the meetings. The Contractor shall provide at the meetings hard copy drawings indicating progress to date and those necessary for points of discussion.
- .9 The Contractor shall make adequate allowance for consultation with local government agencies, the Principal's project team, the utility authorities and groups such as other government agencies, community representatives, landholders, residents, councils and special interest groups. The Contractor shall ensure a representative of the Principal's project team is invited to any meetings or Community Involvement processes that involves stakeholders and groups such as other government agencies, community representatives, landholders, residents, councils and special interest groups.
- .10 The Contractor shall take records of any meetings and forwarded a copy to the Principal's community consultation team within 5 days of the meeting.

Land Acquisition

- .11 The Contractor shall determine as early as possible in the design process any land requirements needed for the project and supply to the Principal a supplementary drawing detailing these requirements, in accordance with DPTI Standards and Guidelines DPTI Standards and Guidelines DP100 - Land Acquisition Sketches so as to facilitate the acquisition process.

Drainage Cost Sharing

- .12 The Contractor shall prepare a plan showing drainage works that will involve Departmental cost-sharing with Council, in accordance with DPTI Standards and Guidelines DD302.

Road Lighting

- .13 The Contractor is responsible for:
- (a) determining the location of underground and overhead services (if these have not been provided by the Principal);
 - (b) liaising SA Power Networks and the Office of the Technical Regulator (OTR) as required;
 - (c) determining the power supply points and reticulation in conjunction with SA Power Networks and obtaining its written confirmation of the availability of the supply point;
 - (d) where the Contractor proposes to use SA Power Networks infrastructure to support lighting, obtaining a "Bracket Check" to verify that the height and outreach are acceptable to SA Power Networks;
 - (e) where the Contractor proposes to use clearances to overhead / underground electrical cables which are less than the recommended clearances, the Contractor must obtain the written approval of the OTR; and
 - (f) obtaining any other approval necessary for the electrical installation.

Utility Services

- .14 The extent of service relocation will be dependent on the Final Design. Existing known service locations are included in the survey supplied by the Principal. If necessary, the design shall optimise service utility relocations and maintain the existing services as much as possible.
- .15 The Contractor shall identify where underground services need to be accurately located over and above those provided as part of the survey data supplied by the Principal, e.g. where services could conflict with drainage or excavation for pavement.

- .16 The Contractor shall supply to the Principal a working drawing showing where location of services by uncovering is required. The Principal will arrange for the uncovering and surveying of those services, coordinate the design information to be provided by the service authorities and supply this surveyed information to the Contractor.
- .17 The Contractor shall review and coordinate the integration of these service authority designs from a spatial perspective. This will also include regular meetings with the service authorities and the Principal.
- .18 The Contractor shall prepare a consolidated set of drawings that includes all new service utility locations, as proposed and provided by the utility companies and the Principal.

Pavement

- .19 The Principal is undertaking geotechnical investigation and preparing the detailed pavement design (i.e. where reconstruction, reshaping, overlay, plane out and reinstatement is required) and will supply any specification information. The Contractor must liaise with the Principal regarding the integration of this work and document the design on drawings.

Structural

- .20 The Principal will undertake the structural design of works associated with the Dry Creek Bridges, Little Para and Helps Road Drain, which includes strengthening of parapet and guardrails on these bridges. Detailed design and specification information will be provided to the Contractor for information.
- .21 The Contractor is required to show extensions to the guardrails as part of the design and ensure that the structural design is integrated with any road or miscellaneous works in the vicinity of the bridges.
- .22 Where determine by the Contractor in discussion with the Principal, the Principal will undertake design of overhead gantry signs. The contractor shall supply the Principal design information necessary to undertake these designs and incorporate these drawings in their final design.

Traffic Impact Statement

- .23 The Final Design shall include a Traffic Impact Statement (one page) to accompany the standard DPTI TSA27 form used to approve the installation of Traffic Control Devices.

Vegetation Survey

- .24 The Contractor shall undertake a vegetation survey and a tree condition report. The information provided in the survey and the report shall be used to assess the impacts from the detailed design, to be document n the design drawings/report and be used by the Contractor to obtain all necessary approvals.

4. SAFETY IN DESIGN

- .1 The Contractor acknowledges the importance that the Principal places on safety during the construction, operation and maintenance of the Works. The Contractor shall ensure that safety principles are considered throughout the design process and its design procedures must have due regard for the requirements of:
 - (a) Australian Safety and Compensation Council (ASCC): Guidance on the Principles of Safe Design for Work; available from <http://www.safeworkaustralia.gov.au>; and
 - (b) Consult Australia: Safety in Design Pocket Guide; available from <http://www.consultaustralia.com.au>.
- .2 In addition to the above requirements, the Contractor's design shall ensure a safe work environment for maintenance personal accessing or operating the completed infrastructure.
- .3 The Contractor shall liaise and consult with the Principal with regard to risks to health and safety arising from the design during the construction of the infrastructure, pursuant to Section 294 "Person who commissions work must consult with designer" of the Work Health and Safety Regulations 2012 (SA); and
- .4 The Contractor shall provide a written safety report to the Principal that specifies the hazards relating to the design of the infrastructure pursuant to Section 295 "Designer must give safety report to person who commissions design" of the Work Health and Safety Regulations.
- .5 A draft safety report shall be provided at the times specified in the Design Program and / or when requested by the Principal.

5. HOLD POINTS

- .1 There are no hold points referenced in this Part.