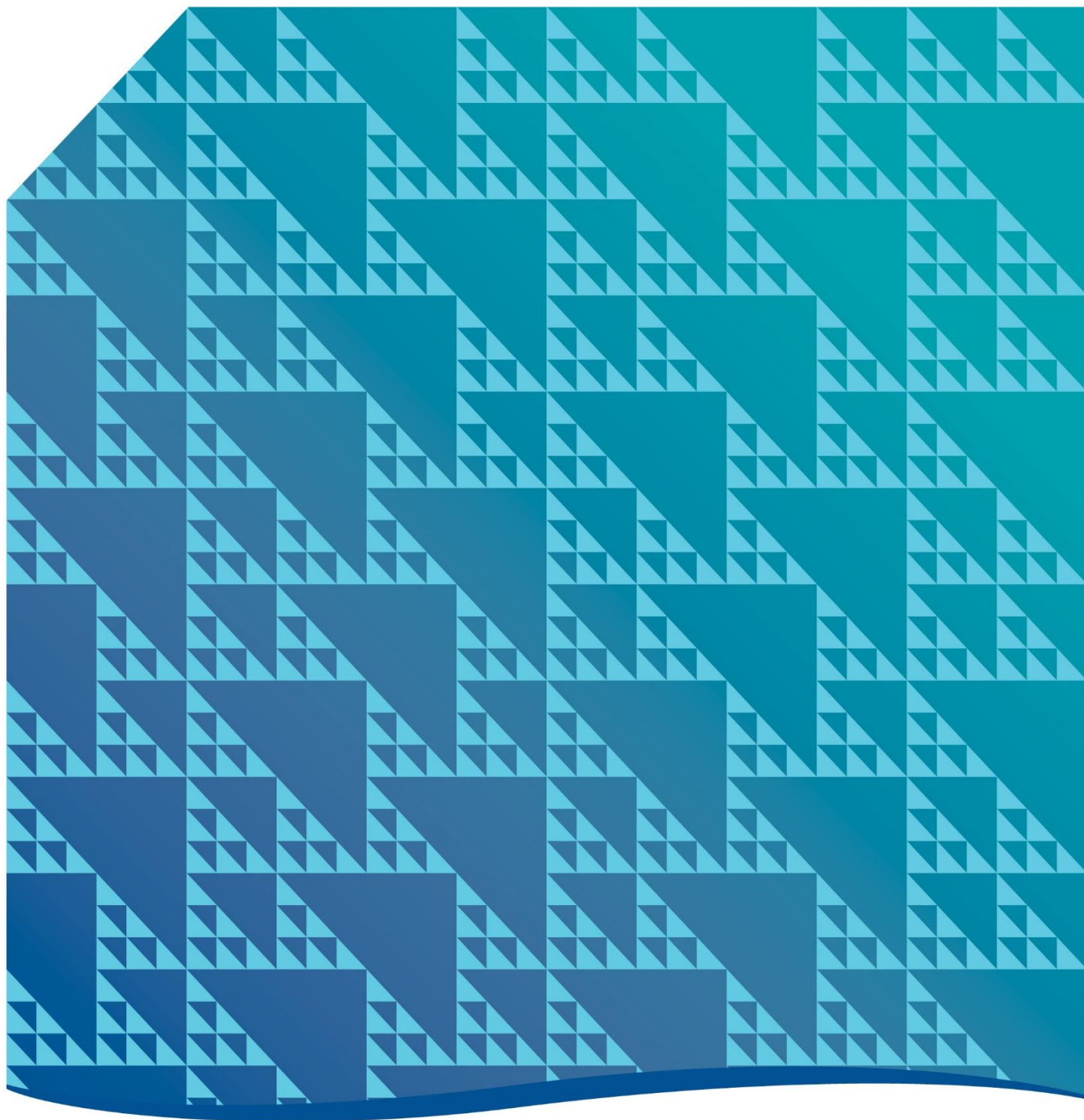


# Stock Underpass on State Roads





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# Introduction

This document is intended to provide a guide for private proponents interested in constructing a stock underpass on a Tasmanian state road.

The proponent is responsible for:

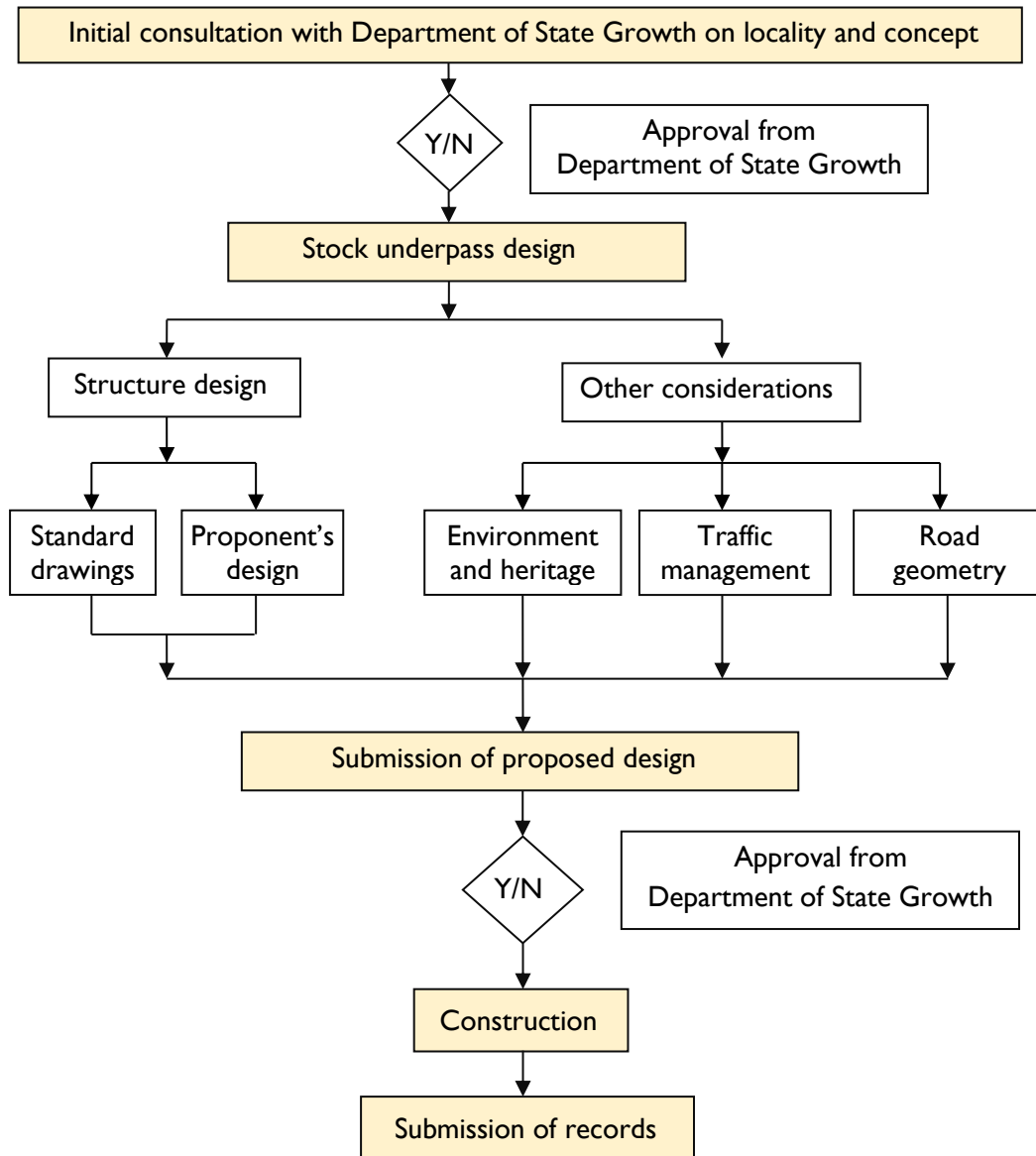
- Satisfying all relevant Australian Government and Tasmanian Government legislative requirements associated with their proposal.
- All costs associated with management, procurement, quality assurance, design, construction, ancillary works, maintenance and disposal of the stock underpass.
- All maintenance, repair and renewal responsibilities for the structure until the end of its life.
- Asset disposal and reinstatement of the road when the stock underpass becomes redundant.

The Department of State Growth is responsible for:

- Routine condition inspections (period depends on age and condition).

# Submission process

The flow chart below provides a diagrammatic illustration of the process from inception to completion of construction of the stock underpass.



# Relevant standards and specifications

The following standards and specifications apply:

- AS5100:2017 (design loads applicable unless agreed otherwise: SM1600 and HLP400).
- AS1597.2:2013.
- Department of State Growth specifications  
<http://www.transport.tas.gov.au/road/contractor/specifications/specification-listings-standard-sections>.
- Austroads - Guide to Road Design - Part 6: Roadside Design, Safety and Barriers.

# Design stage

The purpose of the Department of State Growth's standard drawings is to outline the typical structural form and general requirements for new stock underpass structures located on state managed roads. These drawings only provide a typical general arrangement and the major structural details of the stock underpass base slab. The standard drawings do not provide sufficient information and detail to construct a new stock underpass as every site requires consideration by a suitably qualified design engineer.

A proponent that wishes to construct a stock underpass on a state road shall comply with the following process. The proponent will be responsible for the financial cost associated with the process and the construction of the stock underpass.

1. Contact the Department of State Growth for an initial consultation.
  - The proponent should provide a description of the proposed stock underpass together with a basic map, or plan, indicating the proposed location and orientation of the underpass in relation to the road. It should also include basic information such as geometrical dimensions of the underpass. The department will review the application and may provide comments or suggestions.
  - The proponent must ensure that all legislative requirements (where relevant) that are not under the Department of State Growth's jurisdiction (such as those pertaining to heritage, environmental – flora and fauna, council approvals) are obtained before commencing any works on site.
2. Acceptance of proposed concept and location and initiating the design process.
  - Once the Department of State Growth has accepted the concept and location in principle, including any other specific requirements, a bridge number will be allocated to the proposed structure which shall be used on all design documentation and the drawing template provided by the Department of State Growth.
  - Engage a registered surveyor to undertake an Engineering Detail Survey of the proposed location. The length of surveyed area is to extend from the proposed location of the stock underpass at least 50 metres in each direction along the road (minimum of 100 metres total length). The width of the surveyed area shall be the width of the sealed road plus 4 metres on either side. Depending on the specific site location, the department may require the extent of the surveyed area to be increased, especially if there are nearby corners or other traffic hazards. The Engineering Survey is to be an "Engineering Detail Survey" in accordance with the Department of State Growth specification T4.
  - Engage a suitably qualified professional engineer with experience in bridge and geotechnical engineering, eligible for registration as a member of Engineers Australia (qualified engineer) to undertake the site/geotechnical investigation and design including preparing the required documentation. Alternatively, it is also acceptable for the proponent to engage a contractor that provides a qualified engineer to undertake the tasks. The design and construction of the stock underpass shall be in accordance with AS1597.2:2013, AS5100:2017 and the relevant Department of State Growth specifications.



- The design documentation shall include the following details:
  - A locality plan showing a map of the general area including the proposed stock underpass location, utility relocation, temporary bypass/detour and/or traffic management set up, names of nearby roads etc.
  - A general arrangement drawing with a plan, longitudinal section indicating the position of the proposed stock underpass in relation to the existing road and the existing ground level. The drawing is to include all relevant levels and set out points sufficient for a contractor to undertake the construction.
  - A drawing indicating the geometry of the four wingwalls and their relation to the existing ground level.
  - An overall site plan indicating the extent and test level of any existing traffic barriers, any modifications to existing traffic barriers and the extent of any new traffic barriers. The design of the barriers is to be undertaken by a qualified engineer and shall be in accordance with the current version of Austroads “Guide to Road Design - Part 6: Roadside Design, Safety and Barriers”. Where possible, the traffic barriers located on the stock underpass structure are to utilise the slip-baseplate arrangement as noted in the Department of State Growth's standard drawings.
  - A drawing indicating the new pavement design and the extent of the pavement works that will be reinstated.
  - Structural plans and details of the stock underpass components if the proponent is not using the department's standard drawings.
  - Where the contractor is using proprietary precast box culvert units from a specialised precast supplier, a qualified engineer shall certify that the box culverts comply with the requirements shown on the department's standard drawings. Reinforcement details of the box culvert units shall be shown on the drawings.
  - Where the contractor is using a Mass Block wingwall system or an equivalent that is approved by State Growth, the wingwall shall be designed and certified by a qualified Engineer.

### 3. Submission of documentation to the Department of State Growth for acceptance

- Submit all the design documentation to the department for acceptance. The Department of State Growth will review and provide comments as required. The proponent shall revise their documentation before resubmitting.
- Submit a construction program and traffic management plan for the construction.
- Submit the application for permit to undertake works in the State Road Reservation.  
<http://www.transport.tas.gov.au/road/permits/general-works>
- Liaise with Property Assets (the Department of State Growth) to enter into a Licence Agreement in accordance with the *Crown Lands Act 1976* for the ongoing use of the stock underpass. To organise the license preparation prior to the construction of the underpass, please contact [property.assets@stategrowth.tas.gov.au](mailto:property.assets@stategrowth.tas.gov.au).

- The Licence Agreement will outline the responsibilities of the licensee for maintenance and renewing the stock underpass. There will be a yearly licence fee and the costs associated with the preparation of the licence (licence drafting and valuation) which will be borne by the licensee.
4. Once the department is satisfied with the submission, a permit to undertake works in the State Road Reservation will be issued. A license agreement shall be in effect before the stock underpass can be operational.

## Construction stage

The proponent can now proceed to engage a prequalified contractor registered in Tasmania to commence construction if a contractor hasn't already been engaged. The prequalified contractor shall be at least registered in the B1 category under the National Prequalification System (road and bridges). It should be noted that the proponent and the contractor are fully liable for all activities on site. The proponent will be the 'principal' under the contract and may engage a 'superintendent' to administer, perform surveillance and audit on the contract to ensure quality outcomes.

The proponent or prequalified contractor shall engage a suitably qualified engineer in the geotechnical field (refer to Section 2) to inspect all foundations and confirm that they meet the minimum requirements noted on the Department of State Growth's standard drawings or alternate design, and in the documentation provided by the wingwall designer. The geotechnical engineer shall inspect and approve the foundation material prior to the contractor placing bedding sand or blinding concrete.

## Project completion stage

During construction the contractor is to maintain suitable quality records and As-constructed drawings as described below. All quality and As-constructed records are to be provided to the department within four weeks upon finalisation of construction.

The contractor shall maintain the following records as a minimum:

- All relevant survey information.
- Premixed concrete delivery docket with information in accordance with the Department of State Growth specification 610.13 (e), and evidence of concrete control, sampling and testing in accordance with the Department of State Growth's specification 610.16.
- Records of the inspection and approval of the foundation and structure by the relevant qualified engineer.
- Design change records.
- As-constructed drawings.

# Post-project completion

The proponent will be responsible for the following actions post completion of the stock underpass:

- Ensure the license is valid for the operation of the stock underpass.
- Rectification of any defects identified by the Department of State Growth during the routine inspections within six months or the timeframe stipulated by the department.
- Regular maintenance of the stock underpass and approaches.
- Renewal or disposal of the stock underpass at the end of its useful life. Where the stock underpass is disposed, reinstatement of the road to the requirements of the Department of State Growth.



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