

# Underpass Policy

South Taranaki District Council



**South Taranaki**  
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## **Executive Summary**

The South Taranaki District Council Underpass Policy outlines the specific requirements for the development and installation of underpasses. The policy provides information on how the Council will assess applications and what applicants are required to do, to utilise the road in a safe manner. This policy should be read in conjunction with the current South Taranaki District Council Livestock Control Bylaw.

## **Council's Role and Responsibility**

The Council owns and manages roads throughout the South Taranaki District. All persons wishing to use the road, including the area underneath, for the installation of an underpass, need to adhere to particular conditions to ensure health and safety for all road users.

## **Purpose of the Policy**

The purpose of the policy is to supplement the requirements contained within the South Taranaki District Council's Livestock Control Bylaw 2019, and to provide further details on the development, installation and maintenance of underpasses within the South Taranaki District.

## **Objectives**

- Fair and consistent approach to the installation and maintenance of underpasses;
- Protection of Council assets; and
- Public safety.

## **Requirements of the Act**

Under section 22AB of the Land Transport Act 1998, road controlling authorities (the Council) may make certain bylaws for one or more of the following purposes:

- (s) prohibiting, either absolutely or conditionally, the crossing of any bridge or culvert by horses, cattle, sheep, pigs, or other animals, or vehicles and regulating the times at which or the manner in which any horses, cattle, sheep, pigs, or other animals, or vehicles, may cross or be taken over any bridge or culvert:
- (t) prescribing the routes by which and the times at which horses, cattle, sheep, pigs, or other animals, or specified classes of vehicles, may pass over any road:
- (u) prohibiting the driving of loose horses, cattle, sheep, pigs, or other animals along any road, otherwise than at the times and by the routes so prescribed, except with the permission of the Minister or of the relevant road controlling authority, as the case may be, and on the conditions that the Minister or the relevant road controlling authority, as the case may be, thinks fit:
- (v) prohibiting, either absolutely or conditionally, the driving of horses, cattle, sheep, pigs, or other animals along any road, and requiring that no horses, cattle, sheep, pigs, or other animals may be taken upon or enter any road unless they are confined within a motor vehicle.

## **Policy**

### **1.0 When an underpass is required**

- 1.1 The Council may deem that an underpass is required, where the applicable conditions exceed those in the chart provided in Appendix I of this Policy.
- 1.2 Factors which may determine that a livestock underpass is required are:
  - a) Interference with the public's right to use the road;
  - b) Safety provisions of the road; and/or
  - c) Effects on adjoining properties.

### **2.0 Applications for an underpass**

- 2.1 An applicant shall apply to the Council's Rooding Network Consultants, using the prescribed form, together with all required plans and specification detailing the proposal. The application shall be accompanied by the fee, as set out in the Council's current Fees and Charges Schedule.
  - 2.2 Applicants are required to contact the Council to make an appointment for inspection of the likely site for their proposed underpass.
  - 2.3 The Council shall assist an applicant with the installation of the underpass in the following manner:
    - a) Reinstatement, to road level, of the last 300 millimetres of the road above the underpass at no cost to the applicant.
    - b) Advertisement of the road closure and informing the local carriers, Fonterra and utility services.
    - c) Providing and erecting safety rails around the underpass on completion of the work.
- Note:** the assistance provided by the Council in 2.3 is a total value of approximately \$5,000.
- 2.4 A construction and maintenance encumbrance shall be entered into between the landowner and the Council. This encumbrance will be registered as a first charge against the land on the landowner's land title. All costs incurred will be the responsibility of the landowner.
  - 2.5 The Council will meet up to 50% of the costs, up to a maximum of \$5,000.00 (GST inclusive) per water main relocation. This applies for mains 100 millimetres internal diameter and over. The remaining cost will be at the expense of the applicant.
  - 2.6 The applicant shall provide a minimum of six weeks' notice of intent to carry out work for any underpass installation.

**Note:** The Council requires co-operation from the applicant, contractors and other agencies involved in the underpass installation. To provide adequate time to advertise road closures and contractors to reinstate the road, a minimum of six weeks' notice is required.



- 2.7 If services such as water mains, telephone, power or gas are involved at the underpass site, a longer timeframe from the one mentioned in clause 2.6 of this Policy may be required. The longer timeframe will be communicated to the applicant.
- 2.8 The Council reserves the right to time any water shutdown, associated with the installation of an underpass, to suit seasonal needs of other customers.

### **3.0 Design**

**Note:** All underpasses shall be constructed and maintained to comply with Taranaki Regional Council requirements, including but not limited to effluent management.

- 3.1 A detailed plan set, which includes a site plan, elevation, cross section and details, shall accompany the application of an underpass; together with a specification and design certificate of the work to be carried out including any provision for diverting traffic whilst the underpass is being installed.
- 3.2 The proposed underpass must be designed to withstand highway loadings for a period of 50 years (that is to the same standard as a box culvert of the same dimensions in the same location).
- 3.3 The structural length of any underpass shall be determined at each individual site, but shall be no less than 12 metres.
- 3.4 The underpass structure will remain in the road reserve and shall be removed or relocated at the applicant's expense, if required by the Council.
- 3.5 At the design stage, all services shall be accurately located and represented on the plans, showing clearance to the structure and any non-complying cover.

### **4.0 Utilities**

- 4.1 All services shall be marked on site before construction commences. Refer to the *Beforeyoudig* website: [www.beforeyoudig.co.nz](http://www.beforeyoudig.co.nz)
- 4.2 The applicant shall make arrangements with any network utility owner concerned for the relocation of utility services, if required. Any and all costs involved with the relocation or repair of utility services, will be at the applicant's expense. This includes flexible Council water mains less than 100 millimetres in diameter.

### **5.0 Council utilities**

- 5.1 In the first instance, where practicable, underpasses shall be sited to be clear of large diameter water mains, with a minimum physical clearance of 150 millimetres.
- 5.2 Should any Council services require relocation due to an underpass, a benchmark is required to be established at the site by the contractor and the



service located with reference to this benchmark to allow the design and fabrication of any pipework necessary to realign the service.

5.3 Where the Council's water mains (are of 100-millimetre internal diameter or greater) are to be relocated, detailed engineering plans are required. These will be prepared by the Council and will show:

- a) Size, fabrication and alignment of deviation pipework;
- b) Pipe restraints and anchoring details; and
- c) Details of connection to the existing pipeline including all fitting sizes, including provisions for air release and scouring.

5.4 The design life of the pipework shall be 100 years.

5.5 Where a benchmark has been established and pipework prefabricated, any change to the alignment and/or depth of the structure that requires the refabrication of the pipework will be at the applicant's expense.

5.6 Approval from the Council to divert water mains must be sought by the applicant. Consideration by the Council, as part of approval process, may require additional information such as:

- a) Methodology;
- b) Plans of lateral drainage detail;
- c) Indicative construction programme;
- d) Co-ordination of parties;
- e) Shutdown requirements;
- f) Other considerations;

This can take the form of a pre-construction meeting with all parties.

5.7 The applicant's contractor shall be responsible for co-ordination with the Council and their contractors for water shutdowns.

**Note:**A design for an underpass water main diversion is provided in Appendix II of this Policy.

## 6.0 Installation

6.1 An underpass shall only be installed and supervised by contractors approved by the Council.

6.2 The applicant's attention is drawn to their requirements under the Health & Safety at Work Act 2015 as a PCBU in respect of health and safety duties relating to the management of risks.

6.3 All works within the road reserve require a Corridor Access Request to be lodged with the Council and both a Risk Management Plan and Traffic Management Plan to be in place.

6.4 Excavation shall be carried out in a safe, workman-like manner.

6.5 Worksafe NZ are to be notified by the contractor of any hazardous work, 24 hours before work commences.



- 6.6 All phases of the construction sequence of the underpass shall be carried out in the dry.
- 6.7 The site shall be adequately dewatered and any flowing water shall be kept clear of the work, if necessary, by the use of diversions, pipes, pumps or flumes.
- 6.8 Excavated material suitable for backfill, as determined by the Council's roading network consultant, shall be stockpiled in a safe manner, clear of the carriageway.
- 6.9 Should permits be required under the Construction Contracts Act 2002 or any other enactment, the permits shall be obtained by the applicant.

## **7.0 Bedding**

- 7.1 The final level at the base of the excavation shall be determined by the Authorised Officer after inspection of the exposed foundation material.
- 7.2 The contractor shall compact this material or alternatively undercut the excavation, remove the unsuitable material and backfill to the underside of the levelling course, compacting with suitable equipment in lifts not exceeding 150 millimetres.
- 7.3 The underpass shall be laid on a suitable levelling course comprising of bedding material 75 millimetres thick and extending 300 millimetres past the base outline. This may be sand, or crushed rock of 25 millimetres maximum particle size, or a suitable combination. Site conditions will dictate the final decision, which shall be made by the Authorised Officer.
- 7.4 The bedding shall be established by the use of a screed bar and screed boards set up at the correct levels.
- 7.5 The bedding material shall be compacted to a dense level finish such that there are no high spots greater than 25 millimetres which could cause unacceptably high stress levels in the underpass structure.

## **8.0 Construction**

- 8.1 The Contractor shall make every effort to place adjacent units as close together as possible and the gap between abutting faces of adjacent units shall not exceed 12 millimetres.
- 8.2 All joints shall be sealed to ensure water tightness by using either grout, membrane or epoxy compounds.

## **9.0 Drainage**

- 9.1 Drainage with sufficient fall to drain the underpass is to be installed at the site. This shall also take into account the likely scouring of fill batters and shall provide protective work to prevent or minimise the effects of the scouring.



- 9.2 Any Resource Consent from the Taranaki Regional Council, which may be required to dispose of stormwater, shall be made by the applicant at their expense.

## **10.0 Backfilling**

- 10.1 Backfilling of soil around the underpass shall be carried out in even layers not greater than 200 millimetres, simultaneously on each side of the underpass, compacting with power tampers as the lifts progress.
- 10.2 Alternatively, for narrow clearances between the structure and the solid unexcavated bank, the use of a good quality concrete aggregate sluiced in with water will be accepted.
- 10.3 The Council will supply the backfilling material and shall place the final 300 millimetres backfilling above the structure to road level.

**Note:** Materials for backfilling shall be suitably graded aggregate or earth, free from deleterious substances such as topsoil and timber.

## **11.0 Clean-up of the site**

- 11.1 The site is to be left in a clean and tidy condition after the works are completed with all surplus spoil removed, spread and re-grassed.

## **12.0 Councils Responsibilities**

- 12.1 The Council will be responsible for maintaining the road and rails over the underpass structure. The Council will inspect the structural integrity of the underpass on a regular basis. Any structure defects shall be remedied at the applicant's expense.
- 12.2 An initial contract maintenance period of three months is required. Prior to expiry of this period, the Council will undertake a site inspection and advise any remedial works required at the applicant's expense prior to final acceptance by the Council. This excludes the top layer of the road as installed and maintained by the Council.
- 12.3 The Council will reinstate the seal layer of the road above the underpass, including the supply of materials, rails (provision will need to be made to allow direct post attachments to the structure where structural type and depth of road fill demand), fencing to the boundary, and advertisement of the road closure at no cost to the applicant (approximate value of \$5,000.00).

## **13.0 Applicant's Responsibilities**

- 13.1 The applicant shall be responsible for the structural integrity of the underpass and any damage which it may cause to public utilities or the road pavement.
- 13.2 Any costs incurred by the Council to repair damage to the road pavement as a result of settlement of, or erosion around, the underpass structure, will be the applicant's responsibility for the period up to 12 months following the date of installation.



13.3 The Council will arrange for a structural inspection of each underpass at two year intervals, following which a copy of the inspection report will be provided to the applicant.

#### **14.0 Remedial work**

14.1 Any remedial work identified during the structural inspection must be completed by the applicant within 12 months of the notification.

14.2 If urgent remedial work is identified during the structural inspection, clause 14.1 above is excluded, and urgent remedial action must be undertaken by the applicant within 1 month of notification.

#### **15.0 Breaches of Bylaw**

15.1 Nothing in this policy shall limit the Council's ability to prosecute a person for breaching the current South Taranaki District Council Livestock Control Bylaw.

#### **16.0 Definitions**

**Applicant** means the person or entity who has applied to the Council for a permit or to undertake an activity.

**Asset** means an item of property owned by a person or company.

**Authorised Officer** means any person appointed by the Chief Executive of the Council for purposes of acting as an Authorised Officer under this policy.

**Benchmark** means a survey mark or point of commonality.

**Carriageway** means that portion of the formed road devoted particularly to the use of travelling vehicles, including shoulders.

**Council** means the South Taranaki District Council.

**Contractor** means a person or company employed to undertake physical works at the request of the asset owner.

**Droving** means to drive or move livestock in mobs or herds along or across a road and includes leading livestock either singly or in small groups.

**Emergency services** mean the New Zealand Fire Service, the New Zealand Police and the St John Ambulance Service of New Zealand.

**Livestock** means any farmed animal. This includes but is not limited to any cattle, sheep, goat, donkey, mule, horse, pig, lama, alpaca or deer of any kind.

**Livestock Course** means a pathway located within a berm used by livestock when that route must leave the livestock owner's property.





**Livestock Crossing** means the point where livestock are moved from one side of the road to another directly opposite.

**Network Utility Owner** means a person who—

- a) undertakes or proposes to undertake the distribution or transmission by pipeline of natural or manufactured gas, petroleum, biofuel, or geothermal energy; or
- b) operates or proposes to operate a network for the purpose of—
  - i) telecommunication as defined in section 5 of the Telecommunications Act 2001; or
  - ii) radiocommunication as defined in section 2(1) of the Radiocommunications Act 1989; or
- c) is an electricity operator or electricity distributor as defined in section 2 of the Electricity Act 1992 for the purpose of line function services as defined in that section; or
- d) undertakes or proposes to undertake the distribution of water for supply (including irrigation); or
- e) undertakes or proposes to undertake a drainage or sewerage system; or
- f) constructs, operates, or proposes to construct or operate, a road or railway line; or
- g) is an airport authority as defined by the Airport Authorities Act 1966 for the purposes of operating an airport as defined by that Act; or
- h) is a provider of any approach control service within the meaning of the Civil Aviation Act 1990; or
- i) undertakes or proposes to undertake a project or work prescribed as a network utility operation for the purposes of this definition.

**Owner/operator** person who owns livestock, or land where livestock reside. Or person who is currently operating the farming business associated with the livestock or land.

**Permit** means a written consent issued by Council for the movement of livestock in accordance with this Policy or the South Taranaki District Council Livestock Control Bylaw 2019.

**Person Conducting a Business or Undertaking (PCBU)** means a person conducting a business or undertaking -

- i) whether the person conducts a business or undertaking alone or with others; and
- ii) whether or not the business or undertaking is conducted for profit or gain, as defined under the Health and Safety at Work Act 2012.

**Road/Road Reserve** means a road under the control of the South Taranaki District Council as defined in the Land Transport Act 1998, including “paper” roads, but excludes state highways; being all that area of land including the carriageway and berm.

**Roading Network Consultant** means a company contacted by the Council to provide professional services for the road network.

**Safe and workmanlike manner** is considered to mean the quality of work that would be done by a worker of average skill and intelligence.

**Traffic Management Plan** means a plan meeting the requirements of the Code of Practice for Temporary Traffic Management (CoPTTM).



**Underpass** means a tunnel which allows livestock to move underneath the road, from one side to another. An underpass must be designed and constructed in compliance with this Bylaw, any Council Policy (such as the *Livestock Control Policy*) and with approval of Council.

**Utility** means an organisation that maintains the infrastructure for a public service. This may be a public or private organisation.

## 17.0 Contacts

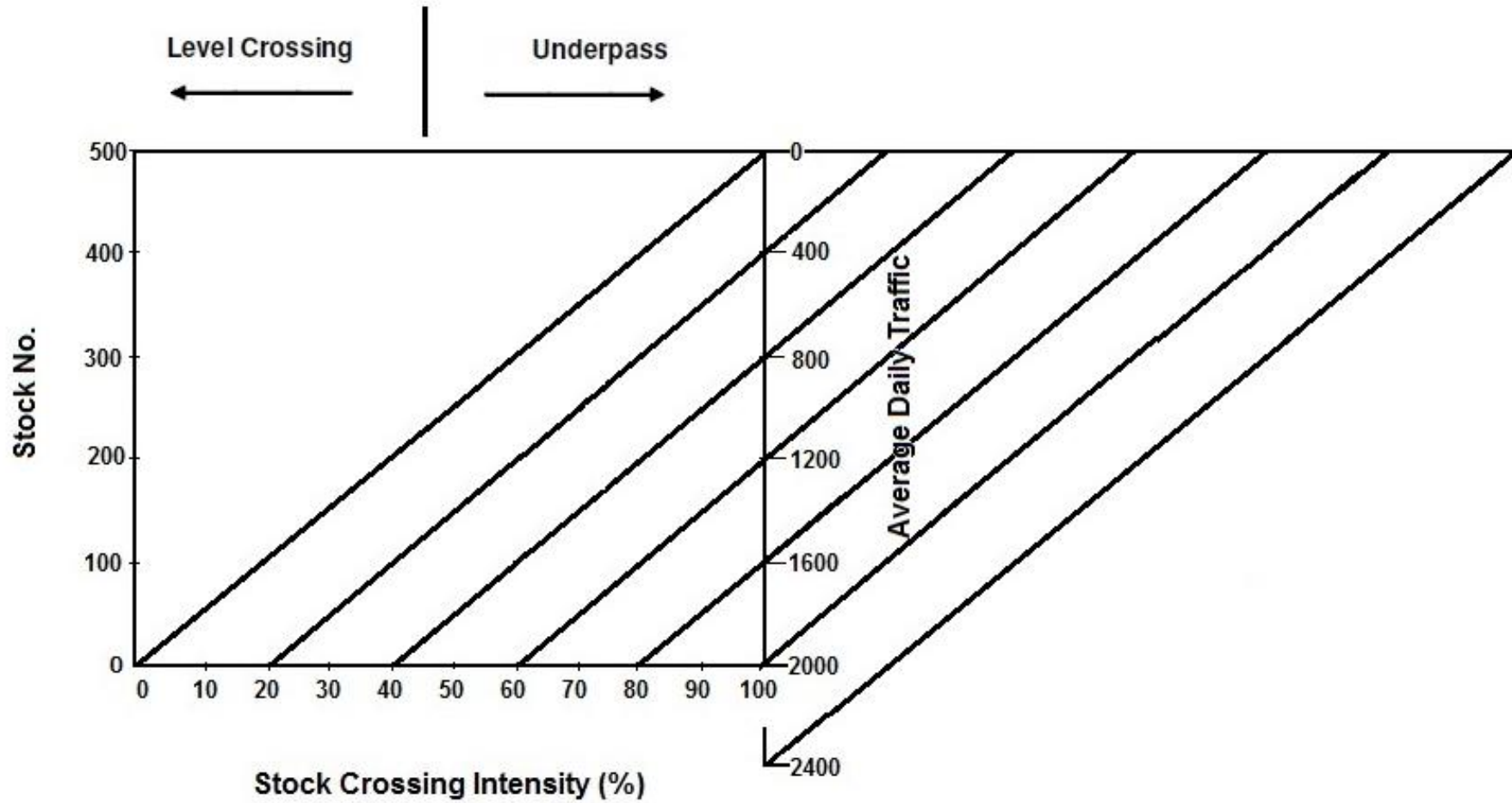
Roading Team Leader  
South Taranaki District Council 06 278 0555 or 0800 111 323

## 18.0 Review of Policy

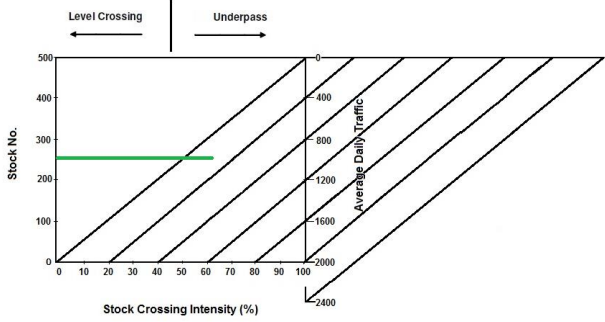
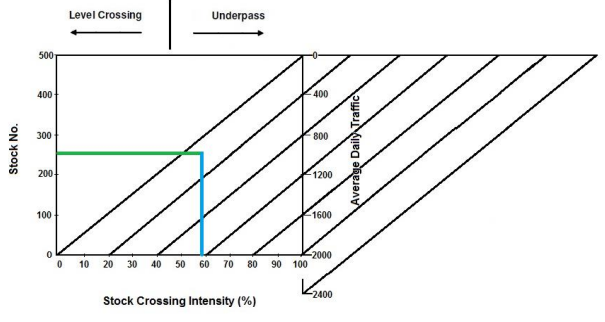
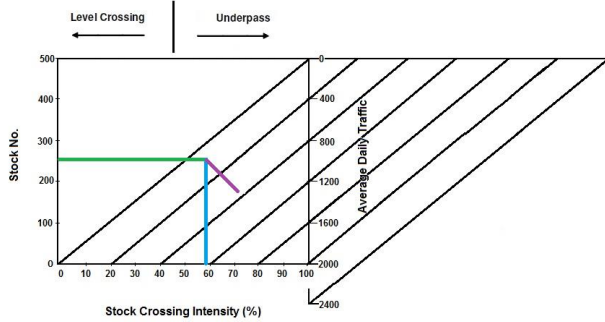
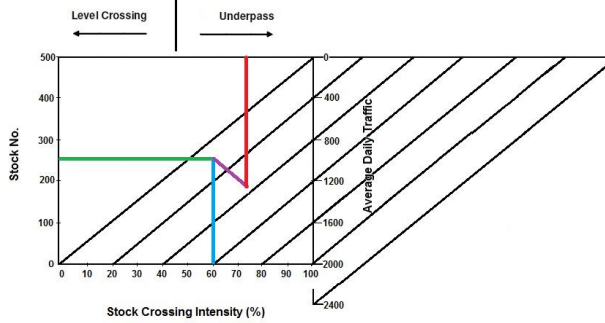
- 18.1 This Policy shall be reviewed every five (5) years to ensure the policy is effective and efficient at achieving the objectives.
- 18.2 The Council may from time to time by resolution publicly notified, alter any Schedules attached.

**APPENDIX I – UNDERPASS MATRIX**

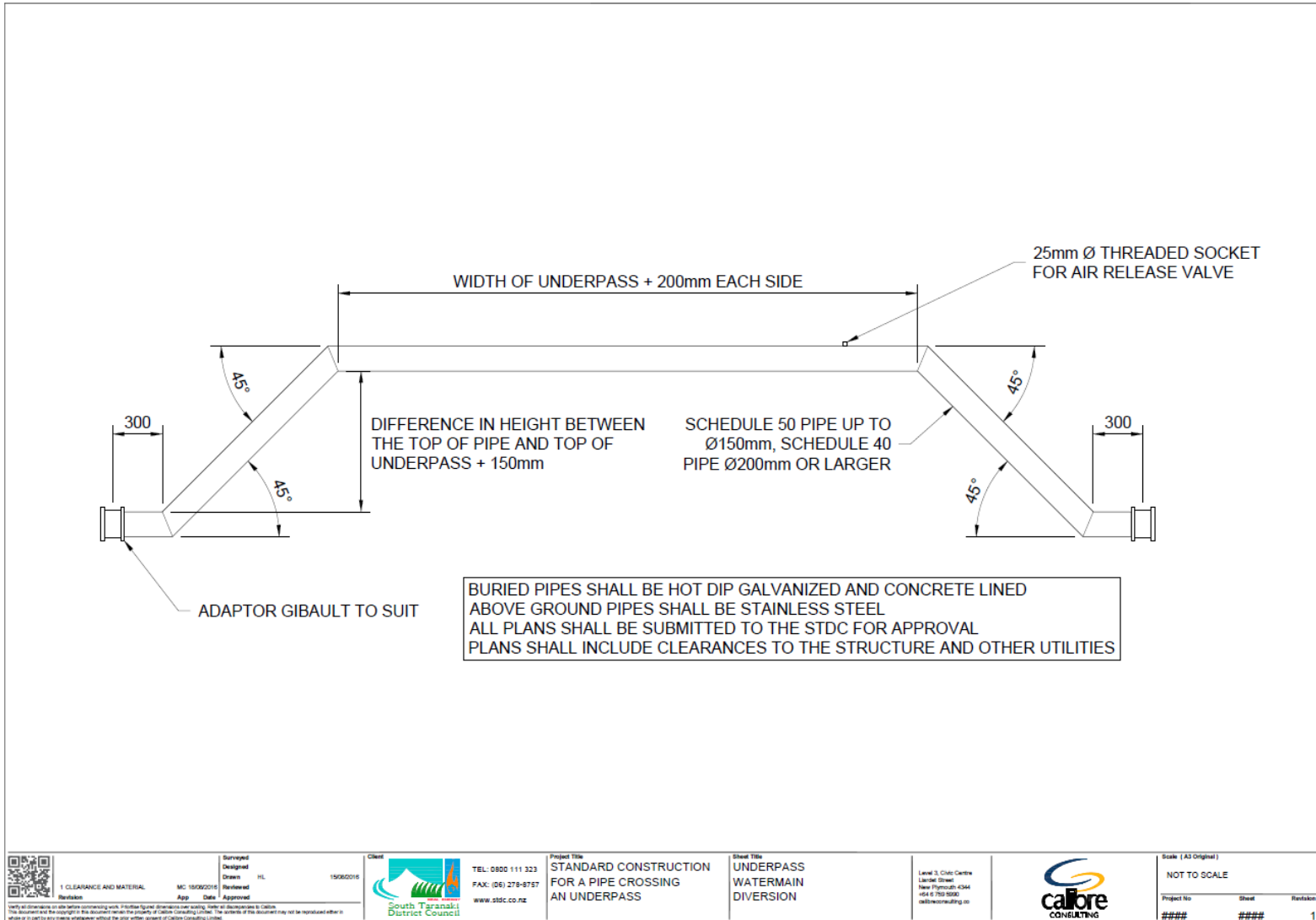
**1.1 Livestock Movement – graph to determine crossing status**



**1.2 Worked example and instructions on how to calculate using underpass matrix**

Livestock Movement Graph to determine crossing status	Worked Example
<p><b>Step 1</b></p> <p>Draw a line on the graph for the number of livestock that would use the crossing at any given time</p> <p><b>EXAMPLE</b> Livestock No = 250</p>	 <p><b>STOCK MOVEMENT - GRAPH TO DETERMINE CROSSING STATUS</b></p>
<p><b>Step 2</b></p> <p>Draw a line on the graph for the livestock crossing intensity. This is calculated as the number of days during the dairy season that the crossing would be in use. The dairy season is considered to be 300 days.</p> <p><b>EXAMPLE</b> Crossing estimated usage 4 days a week. Multiply days per week by 42 to get days in use <math>4 \times 42 = 172</math> Divide days in use by days in season to get livestock crossing intensity <math>172 \div 300 = 57\%</math></p>	 <p><b>STOCK MOVEMENT - GRAPH TO DETERMINE CROSSING STATUS</b></p>
<p><b>Step 3</b></p> <p>Draw a line from the intersection of step 1 and 2 above to connect with the Average Daily Traffic (AADT), shown as the 45° lines. Line must connect at a right angle.</p> <p>Average daily traffic data per road section is available from the Council website under Roothing or by enquiry to Council</p> <p><b>EXAMPLE</b> AADT is 750</p>	 <p><b>STOCK MOVEMENT - GRAPH TO DETERMINE CROSSING STATUS</b></p>
<p><b>Step 4</b></p> <p>Draw a line directly up to the boarder of the graph from the AADT line</p> <p>This line determines if a level crossing or underpass is required</p>	 <p><b>STOCK MOVEMENT - GRAPH TO DETERMINE CROSSING STATUS</b></p>

**APPENDIX II – UNDERPASS DESIGN**



<b>Action</b>	<b>Description</b>	<b>Version number</b>	<b>Decision Date</b>	<b>Decision number</b>	<b>Commencement</b>
<b>New</b>	Adoption of new Underpass Policy	v 1.0	22 July 2019	89/19	15 August 2019