

CATTLE AND STOCK CROSSING ROADS CODE OF PRACTICE (STOCK UNDERPASSES)



Adopted by Council – 26 April 2001



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Stock Underpass Installation Policy/Guidelines

1. General

These notes are for the guidance of the Applicant intending to install a stock underpass that crosses under a Council road.

In the first instance Applicants are advised to contact the Operations Manager, Ashburton District Council, P O Box 94, Ashburton, telephone (03) 308 5139. By making an appointment to inspect the likely site, an early indication of Council's requirements would be established and this will assist in the official application for the installation of a stock underpass. A standard application form has been developed for this purpose (refer to the attachment for detail).

There are no cost implications to the Applicant with regard to the initial site inspection and processing of the application form and approval of construction drawings.

2. General Conditions

A building consent is not normally required. However, each application will be treated on its own merit and should a building consent be required, the Applicant will be informed of such a requirement at the start of the process.

A formal application on the attached form, together with plans and specifications detailing the proposal shall be submitted to the Operations Manager, Ashburton District Council, P O Box 94, Ashburton, for approval.

A one-month approval period shall be allowed for within the Applicant's programme. The Applicant shall be responsible for making contact with **all** service authorities and obtaining location plans for telephone, electricity and other under/above ground services and overhead plant to ensure all conflicts with the work are identified.

During the course of all works within the road reserve the Applicant is responsible for all damage and all costs of subsequent reinstatement of services.

3. General Construction Requirements

The underpass shall be designed so that minimum cover retained over the top of the structure below the road surface is not less than 400 mm.

The minimum length of an underpass shall be 12 metres, with at least a 3 metre clearance to be maintained between the edge of seal and the end of the underpass. The minimum length is set at 6 metres either side of the road centreline. Therefore if an underpass does not run perpendicular to the road centreline the minimum length shall be increased to gain the full 6 metre clearance.

However, where the centreline of a formed road does not correspond with the centreline of the road reserve, it will be treated on its own merits and the final length of the structure shall be as approved by the Operations Manager.

Each application will be dealt with on its own merits, with the final total length of a stock underpass being determined by the following factors:-

- Roading hierarchy
- Sealed or unsealed road
- Seal width
- In-situ soil conditions
- Construction of wingwalls
- Roadside drainage requirements
- Traffic safety / risk assessment
- Any other factors Council deems necessary for consideration in order to ensure the structural integrity of the road.

In the case of a sealed road the trafficked road shall comprise the width of the seal. Where the road is unsealed a carriageway of 6 metres shall be allowed for.

A full design specification for the underpass shall be submitted with accompanying confirmation that the design is adequate to withstand applied traffic loads and other normal applied loads. The stock underpass structure shall at minimum be capable of carrying maximum Class I traffic loadings.

Supply and installation shall be carried out as per manufacture's specifications, plans and producer statement for the structures used to form the underpass.

Tests (at the Applicant's expense) shall be carried out by a Registered Engineer on the subgrade prior to the placement of the units or pipes to ensure that the bearing capacity complies with the design requirements.

The ground water level shall be below the invert level of the structure at all times during construction.

The excavation and installation of the underpass shall be carried out by a competent Contractor familiar with Transit New Zealand specifications, safety procedures and the Health and Safety Act which shall all be adhered to.

The site shall be signed and barricaded as per the Transit New Zealand Manual “Working on the Road” i.e. Road Works, Temporary 30 km/hr, Metal Surface Signs, etc, until all works on the road have been completed.

Drainage with sufficient capacity to drain the underpass shall be installed at the site. The structures installed shall take into account the likely scouring of fill batters, and shall provide protective work (e.g. wingwalls) to prevent or minimise the effects of the scouring and subsequent damage to the road.

The installation Contractor shall provide a producer statement confirming on completion of all works that installation complies with all conditions laid down in the plan and specifications.

Council will consider temporary road closure for one day if warranted. All costs associated with temporary road closure including detour signing to Council’s approval and the payment of newspaper advertising will be the Applicant's responsibility. The Contractor/Applicant shall submit a Traffic Management Plan to the Operations Manager for approval, 5 days prior to work commencing.

The Applicant shall obtain all resource consents required for the installation of the underpass e.g. disposal of stormwater etc. at their own expense. No construction will be allowed to proceed until all such consents have been obtained.

Before any work commences within the road reserve a completed and signed Memorandum of Encumbrance (refer attachment) shall be submitted, inclusive of any further conditions the Council may apply appended, and approval for proceeding with construction will be given in writing.

Upon satisfactory completion of construction the Applicant agrees to take over the maintenance of the structure, drainage, fencing, cleaning and maintenance of the underpass invert. The Applicant shall maintain the reinstated carriageway for a period of 12 months from the date of final reinstatement, whereafter normal maintenance revert to Council.

Backfilling

Backfill shall be imported material comprising well graded aggregate free of organic material and generally with a maximum particle size of 65 mm. In no case shall excavated material be used as backfill except with express written permission of the Operations Manager.

Backfill shall be placed in level layers no greater than 300 mm of uncompacted thickness. Compaction shall be applied evenly to each layer before progress to the next layer. Excavation of the road shall be wide enough to ensure compaction plant can access and compact the material surrounding the underpass satisfactorily.

Backfill shall only be placed by the Applicant to a level and compacted, 400 mm below the adjacent sealed surface. The road construction above this level shall be done by a

Council Approved Contractor and shall at minimum be identical in design to the surrounding road. The proposed road design has to be submitted to the Operations Manager for approval.

Road Sealing

Reinstatement of the road surfacing to a standard comparable to that of the site prior to excavation shall be done by a Council approved Contractor. All joints to be sawcut to ensure smooth transitions.

Roadside Barrier Rails

The Applicant shall, at the time of construction, install barrier rails sufficient to warn approaching traffic of the hazard, identify the position of the underpass and reduce the possibility of vehicles leaving the road and dropping into the openings adjacent to the road. The ends of the barriers shall also be marked with bridge end hazard markers approved by the Council.

3.4 Fencing, Roadside Stock Control and Barriers

Adequate fencing and gates shall be supplied by the Applicant to control stock movements when entering and leaving the underpass and prevent the escape of stock onto the roadside. All costs associated with the maintenance of this fencing within the road reserve shall lie with the Applicant and work shall be done to ensure stock control is maintained to the satisfaction of the Council at all times. This work will also include the provision of all required sighthails and armco barriers as determined by the Operations Manager.

3.5 Clean up on Completion of Works

The site is to be left in a clean and tidy condition after the works are completed, with all surplus spoil removed and excavated road shoulder areas regrassed. No stockpiles of material are to be left within the road reserve.

An initial contract maintenance period of 12 months is required. Prior to expiration of this period the Council will undertake a site inspection and advise any remedial works required at the Applicant's expense, before final acceptance is granted by the Council.

Once acceptance by Council is granted, the structure will be included in Council's Asset Register, but the Applicant shall still be responsible for repairs and reinstatement of structural defects detected by the Council in periodic inspections of the underpass.

4. FUNDING

Financial assistance will be based on Transfund New Zealand's Programme & Funding Manual and in order to qualify for such consideration, Transfund requires the form of structure to not exceed the cost of an equivalent 3.0 m x 2.2 m box structure (unless specifically approved by the Transfund Board).

Funding will be based on the Transfund formula e.g. Controlling Authority Share = $0.05 \times t$, where t is the Annual Average Daily Traffic (AADT) volume of the road in question (refer to the attached graphical representation from the Transfund Programme & Funding Manual). The AADT of 500 and above would attract the maximum subsidy of 25%. Any lesser volumes will be calculated by way of the formula. This Controlling Authority Share is subsidised through Transfund as part of Council's District Roading Programme as a Minor Safety Work project. Council, through its resolution of 15 March 2001 has made it a requirement that the Council's share be reimbursed by the Applicant as well.

Each application will be treated on its own merits and granting of such subsidies will depend on the amount of funding available within Council's current Minor Safety Works budget and may from time to time require Council approval. The funding process is as follows:-

1. Controlling Authority Share (ADC)

ADC share (CAS) for roads having less than 500 AADT = $0.05 \times \text{AADT} = "x" \%$ of total cost

ADC share (CAS) for roads having greater than or equal to 500 AADT = 25% of total cost

2. Transfund New Zealand

Transfund contribution = ADC contribution as in 1 above x Transfund subsidy (For 2000/2001 TFD subsidy = 50%)

3. Applicant

Applicant Contribution = Total cost - Transfund contribution

Thus, the Applicant's contribution includes ADC's Transfund subsidised contribution, with a nil cost implication to Council.

4. Example

The following worked example for information:

AADT = 200 vehicles per day
Construction cost = \$50,000

TFD subsidy	= 50%	
ADC nonsub share	= 0.05 x 200	= 10%
ADC nonsub cost	= \$50,000 x 10%	= \$5,000
ADC sub share	= \$5,000 x 50%	= \$2,500
TFD share	= \$5,000 x 50%	= \$2,500
Applicant's share	= \$50,000 x 90%	= \$45,000
ADC subsidised share		= <u>\$ 2,500</u>
TOTAL Applicant's share		= <u>\$47,500</u>

5. MEMORANDUM OF ENCUMBRANCE

It is a requirement that a Memorandum of Encumbrance (as per the attachment) be registered on the titles of the affected properties. The Memorandum of Encumbrance is to include the following information:-

- Legal description of the properties
- Type of stock underpass (pipe, precast box etc.)
- Construction material (concrete, steel etc.)
- Dimensions of structure
- Depth of cover over the structure
- Design loading data
- Location (ward, road, rapid no.)

All costs relating to the registration of the Memorandum of Encumbrance is the responsibility of the Applicant.

6. REFERENCES3

South Taranaki District Council: "Guide for Stock Underpass Installation"
March 1994

Ashburton District Council: "Guide for Installation of Stock Underpasses"
Services & Operations Committee July 1994.

Transfund New Zealand: "Transfund News"
April/May 1998

Transfund New Zealand: "Programme & Funding Manual"
July 1998

Auckland City Council: "Private Underpasses under Roads"
December 1998

Southland District Council: "Standard Technical Specifications for the Construction of a Stock Underpass" - September 1999.

Matamata Piako District Council: "General Conditions for Construction of Stock Underpasses" - November 1999.

APPENDIX 1 - APPLICATION FORM

APPENDIX 2 - SAMPLE MEMORANDUM OF ENCUMBRANCE

November 1997