



Concrete Stock Underpasses and Box Culverts



ACL are specialists in manufacturing and installing concrete stock underpasses which will reduce animal stress and road crossing maintenance whilst increasing safety for staff, stock and the road user.

Our underpass units are not restricted to farm use and can be utilized as box culverts for stream crossings, pedestrian tunnels or with sealing modifications as siphons for civil engineering projects.

Applications:

- Stock Underpass for on farm sites, rural road and state highway crossings.
- Box culverts for streams or stormwater
- Pedestrian access tunnels
- Specialist civil engineering applications

The ACL box culvert system is modular and our standard underpass installation width of twelve metres comprising six underpass units, can be extended to accommodate any width of road or crossing required by the customer. Kerb beams and wingwalls are bolted on to complete the underpass entry points and provide a solid foundation for road reinstatement after installation is complete. The wing walls sloping section can be reversed to suit local ground conditions, the wingwall can be lowered to sit flush with the top of the underpass or we can cast extra drainage holes, service ducts and block-outs for water pipes into the wingwalls.

Our joint sealing system ensures that your underpass is highly resistant to rain or groundwater penetration through the roof and novacoil drains and boulder sumps are installed to keep base groundwater ingress to an absolute minimum.

Design

Our units have been designed by an independent structural engineer in accordance with the Transit New Zealand Bridge manual HN:HO-72 and as such Opus Consultants Christchurch considers that they will meet all the requirements for use under roads and state highways.

When used under roads and highways the units must be installed with the appropriate covering materials to permit construction of a fully formed roadway that meets all the Transit and local body requirements for that particular class of road. ACL units can be used without any overlay and have been specifically designed to carry traffic with a range of fill depths from 0mm up to a maximum of 600mm, however we recommend a minimum 100mm of running course or 50mm of asphalt.

Installation

Our units have been installed successfully in various districts throughout the central South Island including Waitaki, Hurunui, Selwyn & Timaru Districts. We can install locally or recommend contractors who have installed our underpass system in your area.



If you wish to install an underpass beneath a road that is part of Transit NZ state highway network you will be eligible for Transit funding up to 25% of the total cost of the underpass units and installation. Local District councils also offer a subsidy for underpass construction on their road network but this will vary between each individual council.

Quality Assurance

ACL can provide a QA record and a construction producer statement (PS3) to assist with the District Council code of compliance issuing process.

ACL performs its own in-house quality assurance checks during unit construction and maintains a comprehensive construction and materials database for all units, wingwalls and beams produced.

Your local District Council building consent may require an independent engineers inspection of the construction and completed works including provision of a Producer Statement 4, Construction Review. We will supply our Structural Engineers specification, layout, assembly and fabrication drawings, designers PS1 and guard rail drawings if required, to assist with the building consent process.

Manufacture

ACL utilises 40MPa concrete from our own Readymix Association certified concrete plant in the construction of the units along with Grade 500 HT steel supplied by Fletcher Reinforcing.

We can also supply units, wingwalls and beams for specialist requirements as long as the overall dimensions remain the same.



Tying the HT500 steel cage and placing the Readymix certified 40MPa concrete into the underpass form



Placing underpass unit to cure before setting upright



Specialist Applications

ACL supplied 20 specialised underpass units for Works Infrastructure on the Black Point Irrigation scheme off the Waitaki River in 2005-2006 to construct a 40m long siphon between two canals.

These units required;

- holes cast longitudinally through all the walls for the insertion and tightening of post tensioning tendons.
- Trapezoid channels on all the joining surfaces for the insertion of Sika waterstop and sealing compounds.
- Corner chamfers on all mating surfaces

Other clients have required extra holes or service ducts cast into wingwalls, blockouts in the top of walls for large diameter water pipes and penetrations through the wingwall for higher level drains.

Call us to discuss your specific requirements and we will advise you on the options that are available.

Examples of cast in blockouts and water pipe penetrations through wingwalls



Dimensions

Internal: each unit is 2.00m high x 3.72m wide x 2.00m deep

External: each unit is 2.48m high x 4.20m wide x 2.00m deep

The weight of the underpass items are as follows*;

- Unit – 15800kg each
- Wingwall – 5956kg each
- Beam – 1564kg each

*Based on average concrete density of 2440kg/m³

Unique Benefits:

- Heavy duty construction means no need for costly and fiddly joint keys.
- A standard 12m underpass can be installed in just a few days.
- New Denso roof joint sealing system keeps moisture ingress to an absolute minimum.
- Designed in accordance with the Transit New Zealand Bridge manual HN:HO-72
- Can be utilized with a fill cover depth ranging from 0 to 600mm.

- Wingwalls can be reversed, lowered or fitted with service ducts or water race pipework blockouts to suit almost any situation.
- Can be provided with or without wingwalls or kerb beams.

ACL Stock Underpasses are a proven method of stock movement under rural roads and state highways and will result in a reduction in animal stress and simplify stock movement for farm staff.

Installation is fast, simple and 100% effective in eliminating dangerous road fouling and traffic control issues whilst moving stock. Call us for your free ACL underpass information pack.

ACL Dairy Farm Track Overlay

ACL has introduced a new product for farm tracks that minimizes the soggy conditions that can occur in most dairy farm tracks. ACL “Track Overlay” is compacted and shaped for optimum drainage to produce a top quality track.

Lame cows cost the New Zealand’s dairy industry up to \$57 million a year, according to figures supplied by the Ministry of Agriculture and Forestry. The former chairman of Dairy Farmers of NZ said, “redesigning and resurfacing farm tracks was one of the best investments a dairy farmer could make.”

To find out more about the new ACL “Track Overlay” product, please contact the friendly team at Ashburton Contracting Ltd



ASHBURTON CONTRACTING LIMITED

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ASHBURTON

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Contacts:

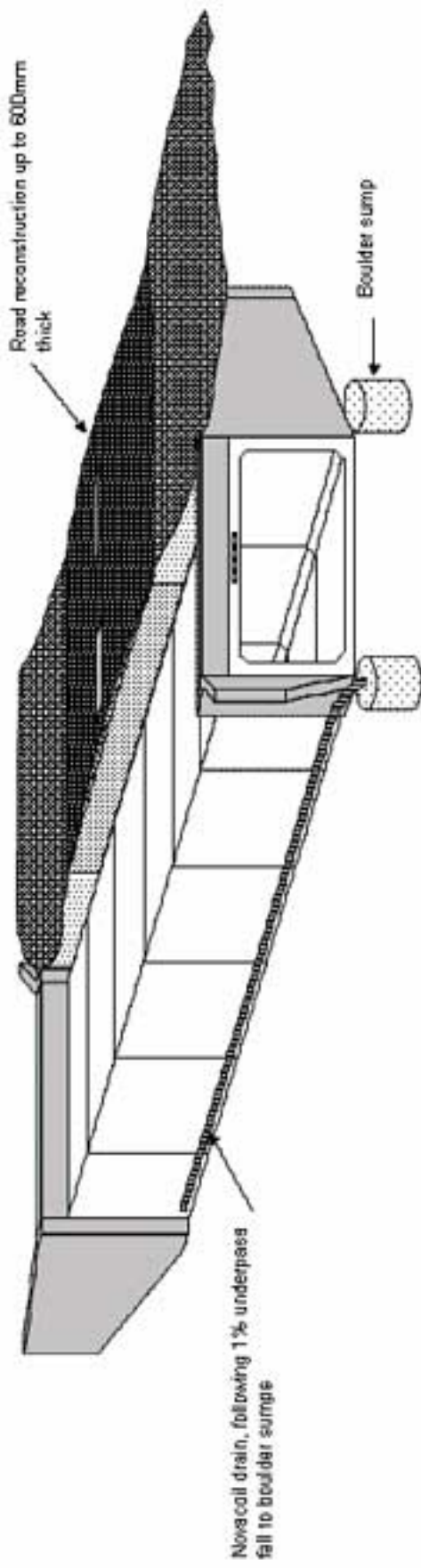
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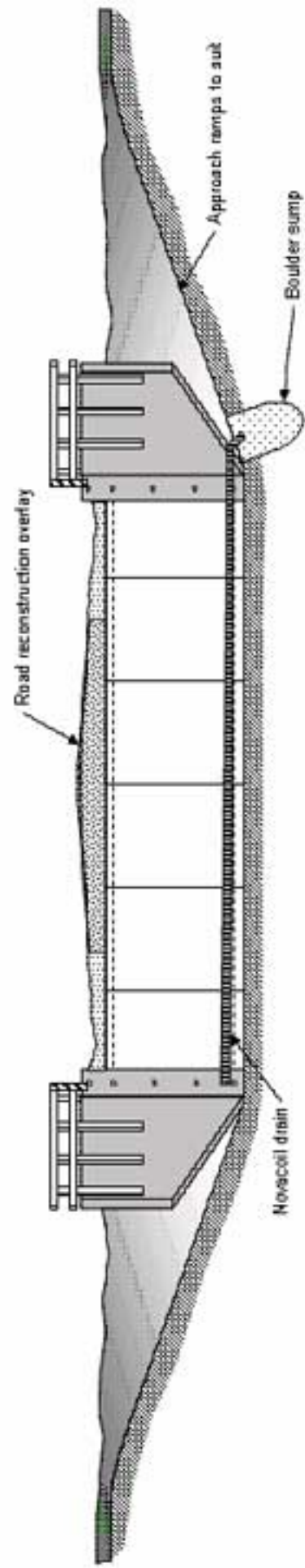
ACL will provide advice and information so that the purchaser can make an informed decision as to the product suitability, installation options and underpass length required but Prospective purchasers and end users of ACL underpasses must make their own final assessment of the suitability of the ACL products for their particular use and location.



Assembled 12 metre Concrete Underpass Views



Isometric view of assembled 12 metre Underpass



Long section of assembled 12 metre Underpass