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## Cullenbenbong Road, Kanimbla Valley Concrete Causeway 16/10/2021

Firstly, *Gracey's Earthmoving and Excavations Pty Ltd* would like to thank the Lithgow City Council for the opportunity to submit this **estimate** for the replacement of a concrete causeway on Cullenbenbong Road, Kanimbla Valley.

### Proposed Scope of Works:

1. Site establishment including provisions for all site safety documents and Engineers designs for the concrete causeway.
2. Design and implement traffic management plan including detour road as shown on attached drawing.
3. Removal of existing concrete causeway.
4. Construction of a 6 meter wide, 27 meter long concrete culvert causeway (including concrete approaches) as per attached specifications subject to engineer's design.
5. Build up approaches to the concrete causeway using DGB-20 road base.

**Total Cost: \$290,000 + GST**

Quote excludes –

Any work relating to the gate, fence and stock grid on the northern end of the concrete causeway (this may need to be raised to keep this section of the road out of flood waters)

Kind regards,

Kevin Gracey  
Director

This document is an estimate for budgeting purposes only





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### **Concrete causeway specifications:** (Subject to engineer's design)

Dewatering – Water will be diverted through Vindex pipes to allow for excavation below water level for the base slab.

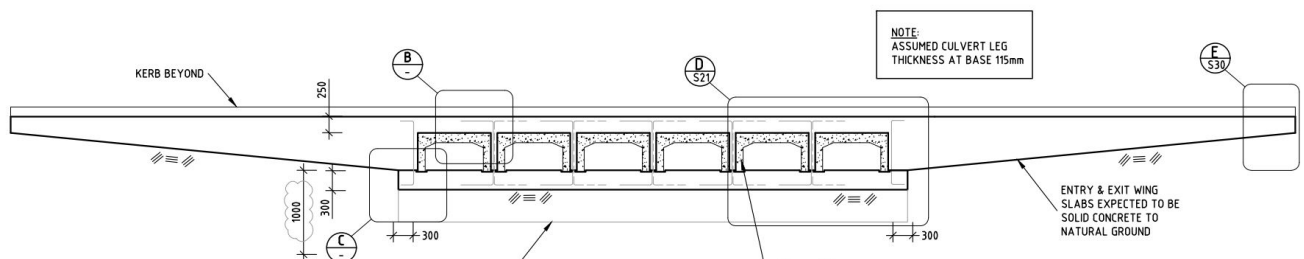
Base slab – A base slab will be poured below the current water level to support 4 rows of concrete culverts. The base slab will be 6 meters wide by 7 meters in length. Using 50 mpa concrete and 2 layers of N16mm Reo bars laid each way at 250mm spacings. Due to the unlikelihood of finding bedrock to anchor the base slab to, up to 10 x 3-meter-long screw piles will be driven into the creek bed to anchor the base slab down.

Concrete culverts – 4 rows of 1200mm wide x 450mm high concrete culverts will then be installed on the base slab, each row will have 100mm space between the next to allow for doweling and concrete to tie the base slab to the top slab and lock the culverts in place.

Top slab and concrete approaches – A 300 mm top slab will then be formed up and poured using 50 mpa concrete and 2 layers of N16mm Reo bars laid each way at 250mm spacings. This slab will include a 6-meter wide by 7 meter in length slab above the culverts as well as two 6 meter by 10 meter concrete approaches. Each approach slab will also include a screw pile anchoring system.

Kerb – 200mm x 200mm kerb will also be formed and poured along each edge of the causeway with notches in the kerb above the culverts to allow flood water to pass through.

Drawing below shows a similar concrete causeway constructed by Gracey's Earthmoving and Excavations.



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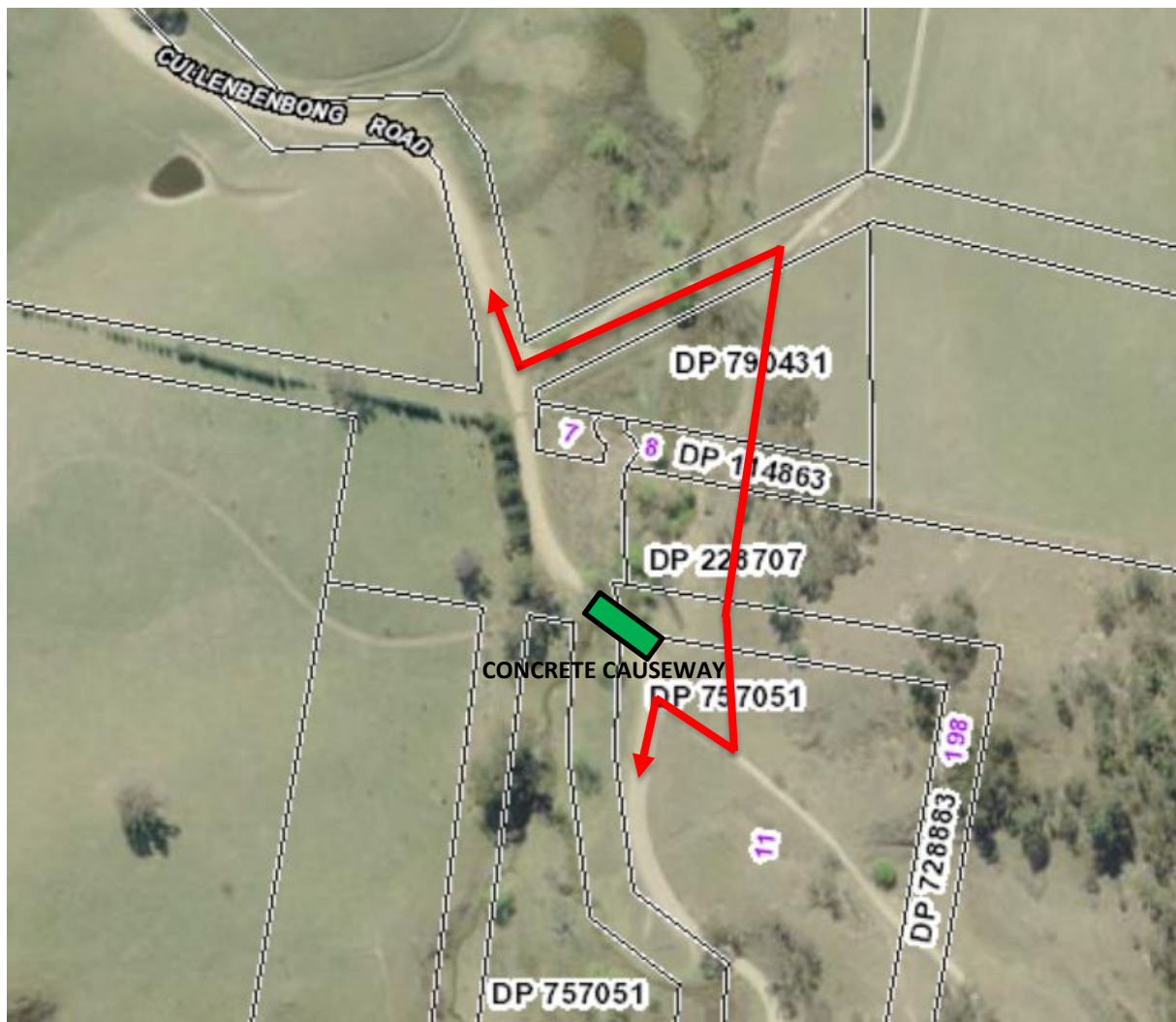
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Proposed temporary access as part of our traffic management plan shown in red



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