

## Examination of a proposed subdivision at Orana Place, North Riverside

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Two test pits have been dug on a new lot at a proposed subdivision at 18 Orana Place, North Riverside. The approximate positions of these pits are shown on Figure 1 with logs given in Appendix 1.

The test pits intersected mainly fragmentary brown clay in the bottom part with dominantly sandy material at the surface. The top of the clay layer in pit 2 is a more plastic clay.

The land surface is a little hummocky with one larger hummock where pit 1 was dug. The uneven slope may be due to old landslip movements but this is by no means certain. Apart from the thin layer of plastic clay in pit 2, the material in the pits is expected to have comparatively high strength when compared to some of the low strength clay around the Tamar Valley. This, together with the only moderate overall slope angle, suggests that it should be possible to develop the lot (with single-storey units) with reasonable safety. With unwise development procedures it is probable that unstable conditions could be initiated, and measures to guard against this should be implemented. Excellent drainage should be maintained on the lot. Excavations deeper than about one metre should be retained with a drained structure strong enough to replace the support removed by the excavation. Any building on the hummock on which pit 1 was dug should be placed back from the steep slope or some extra support should be given to this slope.

The clay will probably have expansive properties, particularly the plastic clay, and this should be taken into consideration when designing foundations.

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### APPENDIX 1 Logs of test pits, Orana Place

#### ***Pit 1***

- 0 – 0.6 m Quartz gravel with minor silt layers — fill.
- 0.6 – 0.7 m Brown plastic clay.
- 0.7 – 1.5 m Grey clayey sand and silt passing into moist fine-grained sand to silt.
- 1.5 – 3.0 m Brown and reddish brown mottled clay, fragmental, fairly stiff and moist. Pisolitic iron-oxide rich layer for up to 0.3 m at top.

#### ***Pit 2***

- 0 – 0.2 m Light grey-brown silty clay soil, grass roots.
- 0.2 – 0.9 m Light grey-brown sand and silt with a little clay, iron oxide pisoliths for final 0.2 m.
- 0.9 – 2.85 m Brown and grey mottled clay, mainly fragmentary but more plastic at top, some more sandy zones, moist but stiff, slip surfaces fairly common. A very minor seepage on west wall. Tree roots extend to 2.7 m.

# TEST PITS 18 ORANA PLACE, NORTH RIVERSIDE

*Note! All measurements subject to survey.  
See over for location sketch.*

