



REPORT No. : RM0997-98

CLIENT : Frank Dimopoulos
3 Penny Lane
McCRAE 3938

PROJECT : 3 Penny Lane McCRAE

PROPOSAL : It is proposed to construct single and/or double storey timber extensions to the existing dwelling on strip footings and stumps at this site.

1. **COMMISSION:**

Investigation for site classification (Australian Standard 2870-1996 Residential Slabs and Footings), recommend a founding depth and/or foundation treatment where appropriate.

2. **SITE GEOLOGY:**

Geological maps of the area suggest that the site is in an area of Devonian Granodiorite and Granite - CLAYS. The site investigation confirmed this.

3. **SITE TOPOGRAPHY:**

The site has a steep to moderate slope down to the north. The ground cover comprises of native trees and concrete paving.



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4. INVESTIGATION:

Four bores were drilled by mechanical and hand auger at the approximate locations shown on the attached plan.

Soil strengths of the cohesive soils were tested (if considered appropriate) by using a shear vane apparatus and observed densities of non-cohesive soils were noted.

The logs of each bore are attached showing the soil descriptions and depths along with any cohesive strengths measured and observed densities on non-cohesive soils.

5. FINDINGS:

The bore holes revealed that the existing soil profile consists of various layers of SAND FILL overlying a naturally occurring dark brown silty SAND and dark grey-grey coarse silty SAND. This is followed by various layers of coarse silty SAND.

6. SITE CLASSIFICATION:

After considering the area geology, the soil profile encountered in the bores and the proposed superstructure, this site has been classified as CLASS P with respect to foundation construction (Australian Standard 2870-1996 Residential Slabs and Footings). It is anticipated that the seasonal surface movement at this site will not exceed 20mm.

7. RECOMMENDED FOUNDATION FOR STUMPS AND OR STRIP FOOTINGS:

Although classified as CLASS P the use of CLASS S (AS 2870-1996) proportioned strip footings and stumps founded at minimum depths of 500mm and 400mm respectively, below the finished surface level surrounding the structure is recommended. However, the founding depth must be at least 100mm into any of the naturally occurring SANDS as described in the logs of boring, which from the site investigation can be assumed to have an allowable bearing capacity of 150kPa at this depth.

As a guide to the founding depths with regard to the above and information obtained from the bores, the founding depth at this site will be approximately up to 950mm for strip footings and up to 950mm for stumps in relationship to the existing surface where this surface is to be the finished surface level surrounding the structure.

It is recommended that where any footings are to be constructed next to the existing underground services (sewers etc.), then these footings should be founded at a depth above the invert of the service at an angle of repose of 45° for CLAYS and 30° for SANDS, unless special consideration has been given to the founding material.

7.1 Retaining Wall Parameters:

All proposed retaining walls must be engineer designed incorporating the following parameters:

- i) Bulk density of existing sand 2.0 ton/m³
- ii) Internal friction angle of 25°
- iii) Ka, active earth pressure, value of 0.406

Due to the nature and composition of the soil profile found in the site, construction during or after wet weather may be difficult. Therefore, it is recommended that an open cut drain be constructed around the proposed site to a depth of not less than 300mm below the site foundation material, or CLAY, whichever occurs first to intercept any ground water. There is no need to maintain this drain after construction to ground level has been reached. At this stage the drain should be backfilled, failure to do so may have detrimental effects.

8. CONDITIONS OF THE RECOMMENDATION:

- 8.1 The recommendations made in this report may need to be reviewed should any site works disturb any soil 300mm below the founding depth of the structure.
- 8.2 Since the soil horizons and layers can vary in depth and thickness over the site, the depths and bearing capacities given above are given as a guide only. If the footings are founded at the minimum depth, as stated and are in the soil as described in the logs of boring for this site, then the requirements of this report have been met.
- 8.3 Where any filling is to be placed the footing founding depths recommended in this report will need to be increased accordingly by the depth of that fill.

Unless one of the following occurs:-

- 8.3.1. The base of the footing is founded in the founding soil recommended in 7.1.
- 8.3.2. The fill has been placed under controlled conditions and compacted to a minimum of 95% of AS 1289, 5.1.1 (Standard Compaction) throughout. In this case the footings may be placed in this fill ie findings of further site investigations and the revision of the report made in this report.

- 8.4 The descriptions of the soils found in the bore holes closely follow those outlined in AS 1726-1993 (Geotechnical Site Investigations). Colour descriptions can vary with soil moisture content. It should be noted therefore, colour and shade descriptions mentioned in this report are made when the soil is in a moist condition.
- 8.5 This report has been compiled and recommendations made based on the information supplied in the brief to Civiltest Pty Ltd and from the field investigations and observations made including the extent of if any site filling. Every care has been taken within the terms of the brief to ensure that the field investigation is representative of the site. Therefore, if it is found that for any reason information received by Civiltest Pty Ltd is incorrect or conditions on site vary considerably during construction to those described in this report then the comments and recommendations made in this report may need to be amended.
- 8.6 To ensure acceptable performance of the footing systems recommended in this report, care should be taken that the fundamental building, landscaping and long term maintenance procedures are adhered to as set out in the CSIRO Information Sheet No 10-91, "Guide to Home Owners on Foundation Maintenance and Footing Performance" attached.
- 8.7 Finally, no responsibility will be taken for this report if it is altered in any way or not reproduced in full.

This report consists of 8 pages and one site plan.

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REF: NB/jc

15 June, 1998

CIV. DOC. 004-008 Reissued 30-09-96



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LOCATION OF TEST SITES

3 PENNY LANE McCRAE

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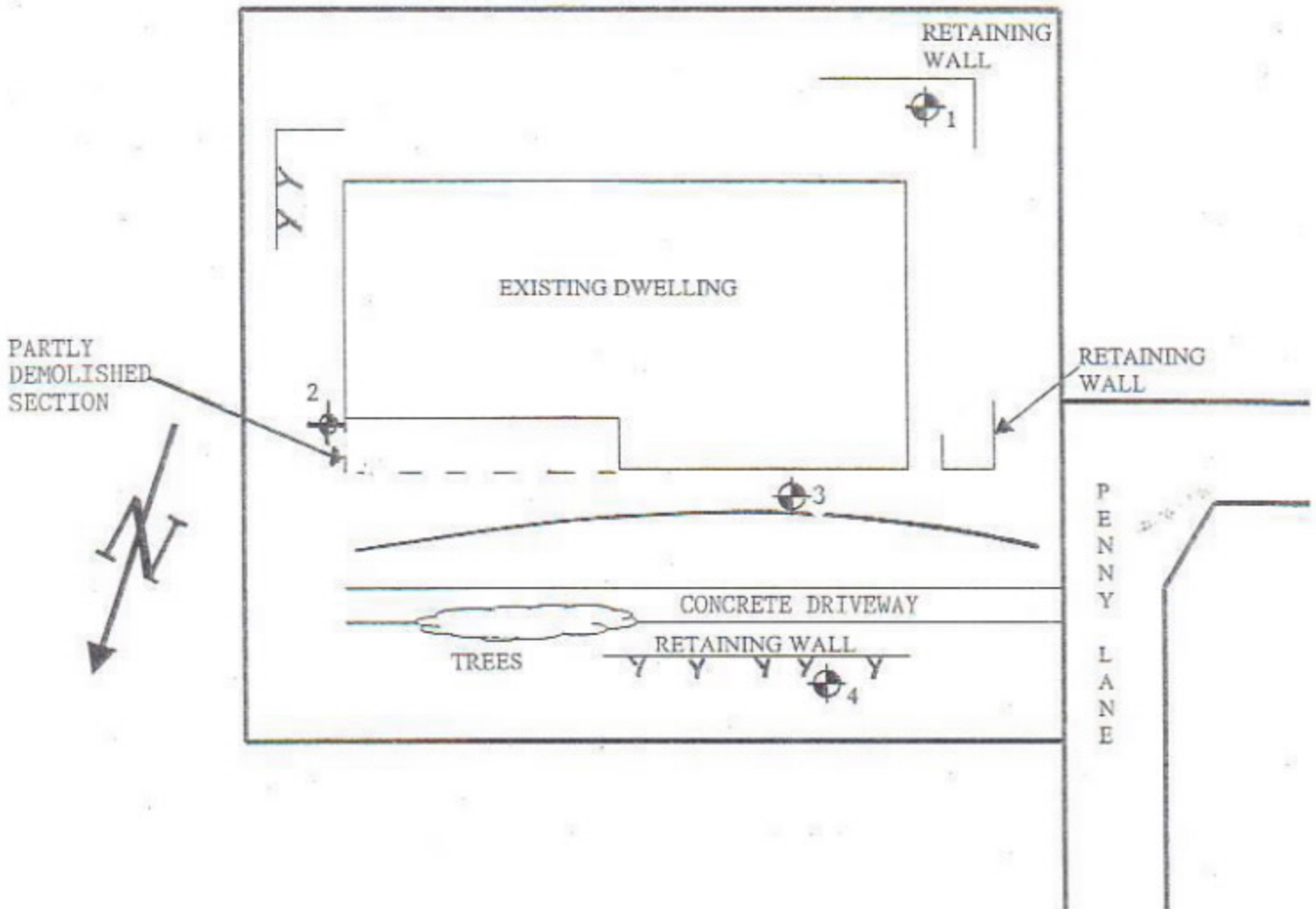
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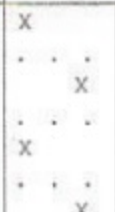
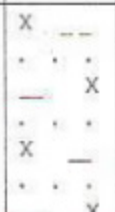
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 Denotes Test Holes

NOT TO SCALE

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| Test Hole No 1 | Classifi- cation | Shear Vane Strength kPa | Engineering Log | |
|-------------------|---|-------------------------------|---|------|
| 0.060 |  | | CONCRETE PAVING | FILL |
| 0.650 |  | | Brown and pale brown Clayey Silty SAND FILL Moist Loose to Medium dense | FILL |
| 0.850 |  | | Brown Silty SAND FILL Moist Loose to Medium dense | FILL |
| 1.000 |  | | Dark brown Silty SAND Moist Medium dense | |
| 1.350 |  | | Brown Coarse Clayey Silty SAND Damp Medium dense | |
| | | | END OF BORE (10-6-98) | |



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| Test Hole No 2 Depth (m) | Classifi- cation | Shear Vane Strength kPa | Engineering Log | |
|-----------------------------------|--------------------------------------|-------------------------------|--|----------------|
| 0.300 | X . . X . X | | Brown/grey Silty SAND FILL Moist Loose to Medium dense | ↑ FILL ↓ |
| 0.450 | X . . X . X | | Dark grey-grey coarse Silty SAND Moist Medium dense | |
| 0.950 | X . . X . X . X | | Brown coarse Silty SAND Moist Medium dense Very moist Between 700mm and 850mm | |
| 1.400 | — . . — . — . | | Brown minor orange Clayey coarse SAND Moist Medium dense | |
| | | | END OF BORE (10-6-98) | |



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| Test Hole No 3 Depth (m) | Classifi- cation | Shear Vane Strength kPa | Engineering Log | |
|---------------------------------------|---|-------------------------------|--|------|
| 0.600 | X . . X . . X | | Brown Coarse Silty SAND FILL Damp Loose to Medium dense | FILL |
| 1.350 | X . . — X . . — X . . | | Grey-brown Clayey Silty SAND Damp to moist Medium dense Becoming brown With depth | |
| END OF BORE (10-6-98) | | | | |

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| Test Hole No 4 Depth (m) | Classifi- cation | Shear Vane Strength kPa | Engineering Log | |
|---------------------------------------|--|-------------------------------|--|-----------------------|
| 0.550 | X X . . X X . . X X | | Mixture of CRUSHED ROCK Silty Sandy and Sandy Silty CLAY FILL Damp Loose to Medium dense | ↑ FILL ↓ |
| 0.750 | X X . . X X . . | | Grey/brown Clayey Silty SAND Damp to moist Medium dense | |
| 1.400 | X X . . X | | Brown Clayey Coarse Silty SAND Moist Medium dense | |
| | | | END OF BORE (10-6-98) | |



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