# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **5** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 1,2 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the worst case current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the site would be equivalent to worst case Class M* (moderately reactive/filled) conditions. It must be noted that part of the block would be equivalent to Class S* (slightly reactive/filled) conditions due to the shallow rock in the northern half of the block. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class M* site classification indicated above. Therefore the classification must be reassessed should the soil profile change either by adding fill or removing soil from the block and/or if the presence of service trenches or retaining walls are within the zone of influence of the block. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated across parts of the site. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

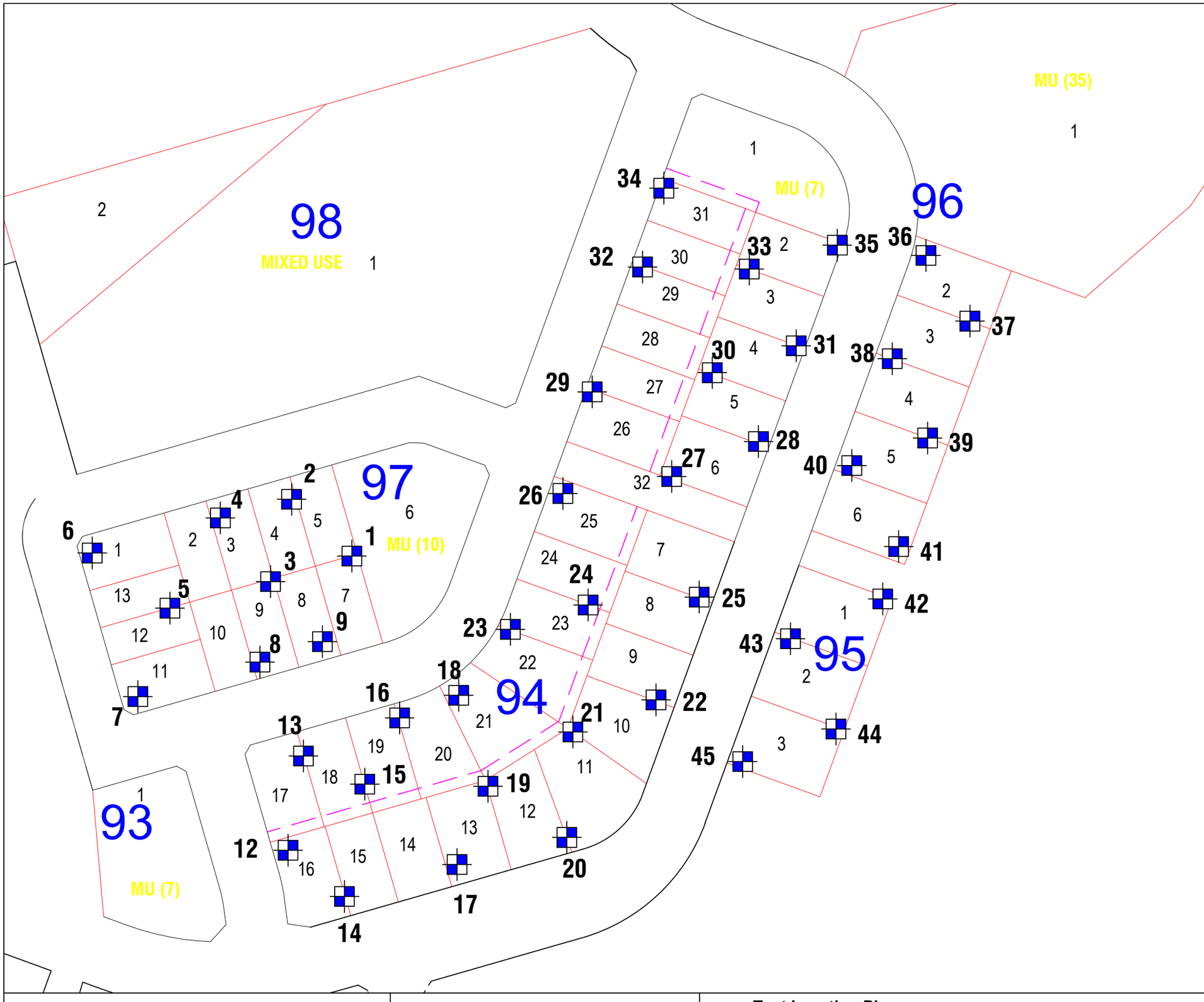
AS 2870:2011, Residential Slabs and Footings, Standards Australia.

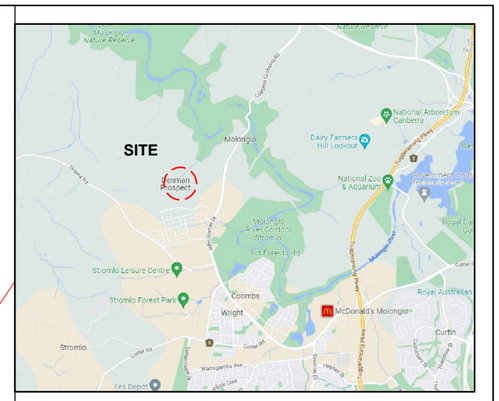
AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 1,2
Drawing 1

Douglas Partners
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 569.0 AHD
**EASTING:** 201279
**NORTHING:** 602490

**PIT No:** 1
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 569 | | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | 0.2 | FILL/Sandy CLAY (CL): low plasticity, brown, orange brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, hard, FILL | | D | 0.5 | | pp >400 | | |
| 568 | 1 | | | | | | | | 1 |
| | 1.1 | Silty CLAY (CI-CH): medium to high plasticity, red brown, with fine to coarse grained sand, trace fine gravel, dry to moist, w<PL, hard, residual | | D | 1.3 | | pp >400 | | |
| | 1.5 | Pit discontinued at 1.5m<br>-Limit of investigation | | | | | | | |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** GM

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 568.0 AHD
**EASTING:** 201252
**NORTHING:** 602481

**PIT No:** 2
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 568 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | Sandy CLAY (CL), low plasticity, brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, hard, possibly FILL | | D | 0.2 | | pp >400 | | |
| | 0.3 | DACITIC IGNIMBRITE: fine to coarse grained, yellow brown, orange brown, dry to moit, low to medium strength, highly to moderately weathered, highly fractured | | | | | | | |
| | 0.5 | Pit discontinued at 0.5m<br>-Bucket slow progress | | | | | | | |
| 567 | 1 | | | | | | | | 1 |

5 10 15 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** GM

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **7** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 1,9 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the worst case current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the site would be equivalent to worst case Class M* (moderately reactive/filled) conditions. It must be noted that part of the block would be equivalent to Class S* (slightly reactive/filled) conditions due to the shallow rock in the southern half of the block. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class M* site classification indicated above. Therefore the classification must be reassessed should the soil profile change either by adding fill or removing soil from the block and/or if the presence of service trenches or retaining walls are within the zone of influence of the block. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

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All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated across parts of the site. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

AS 2870:2011, Residential Slabs and Footings, Standards Australia.

AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 1,9
Drawing 1

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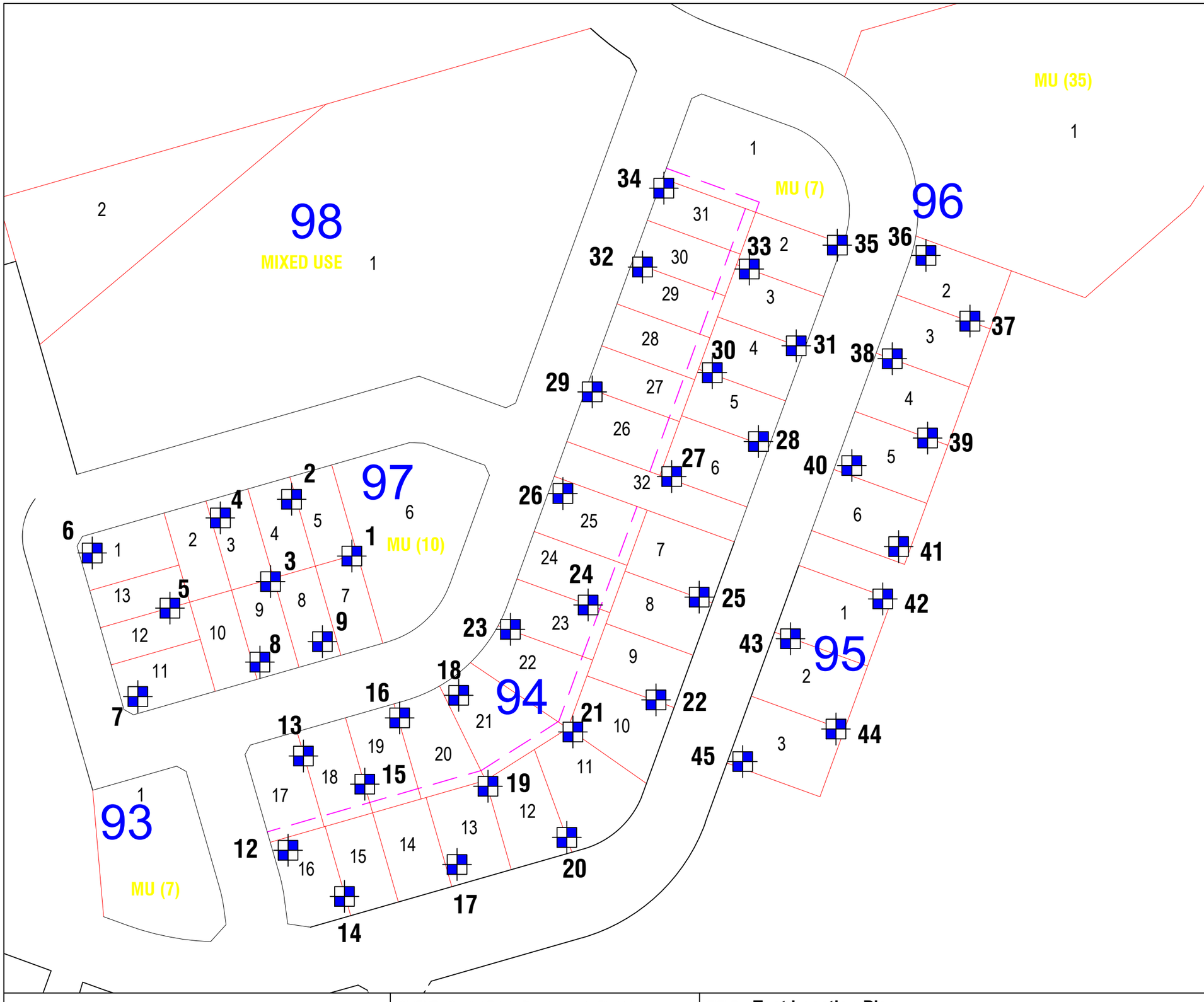
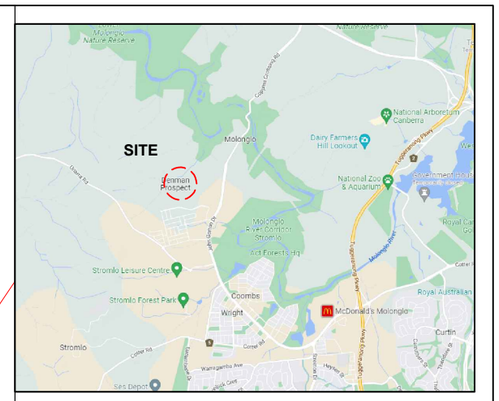
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 569.0 AHD
**EASTING:** 201279
**NORTHING:** 602490

**PIT No:** 1
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 569 | | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | 0.2 | FILL/Sandy CLAY (CL): low plasticity, brown, orange brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, hard, FILL | | D | 0.5 | | pp >400 | | |
| 568 | 1 | | | | | | | | 1 |
| | 1.1 | Silty CLAY (CI-CH): medium to high plasticity, red brown, with fine to coarse grained sand, trace fine gravel, dry to moist, w<PL, hard, residual | | D | 1.3 | | pp >400 | | |
| | 1.5 | Pit discontinued at 1.5m<br>-Limit of investigation | | | | | | | |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** GM

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 569.0 AHD
**EASTING:** 201240
**NORTHING:** 602422

**PIT No:** 9
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 569 | 0.2 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | 0.4 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled black, dry to moist, medium strength, moderately weathered, fractured | | | | | | | |
| 568 | 1 | Pit discontinued at 0.4m<br>-Bucket refusal | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **8** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 3,9 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

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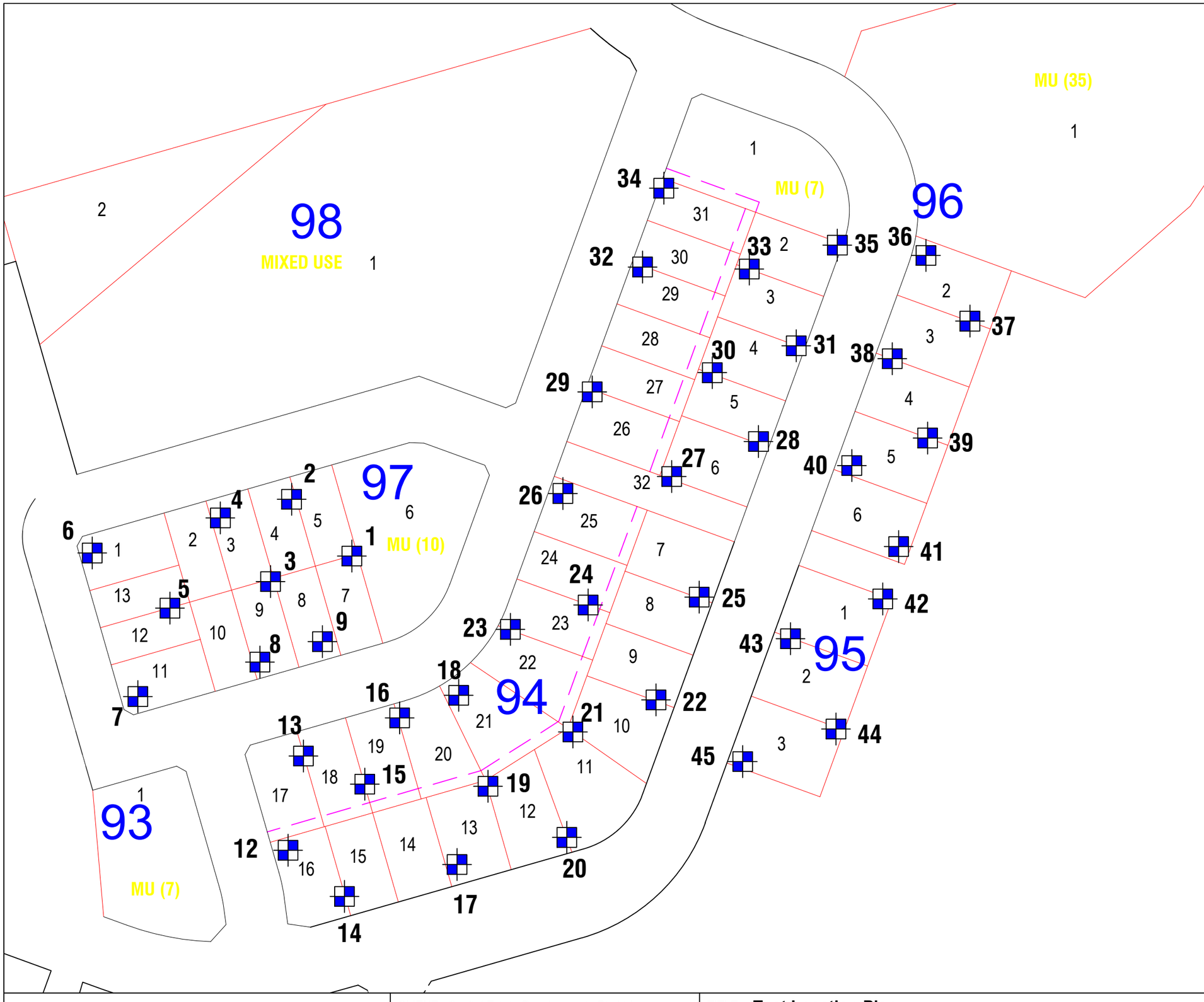
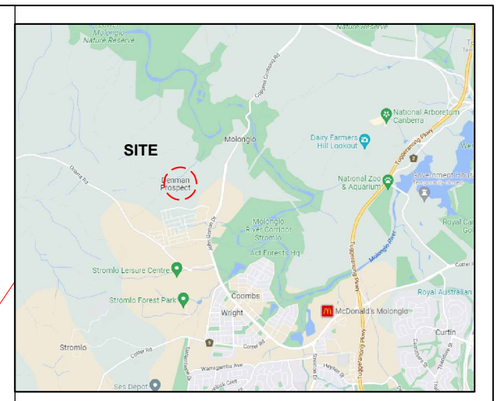
AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 3,9
Drawing 1

Douglas Partners
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 570.0 AHD
**EASTING:** 201225
**NORTHING:** 602474

**PIT No:** 3
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 570 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | FILL/Clayey SAND (SC): fine to coarse grained sand, brown, with fine to coarse gravel, dry to moist, inferred dense, FILL | | D | 0.3 | | | | |
| | 0.7 | Silty CLAY (CL-CI): low to medium plasticity, red brown, with fine to coarse grained sand, dry to moist, w<PL, hard, residual | | | | | | | |
| 569 | 1 | | | D | 1.0 | | | | 1 |
| | 1.1 | DACITIC IGNIMBRITE: fine to coarse grained, red brown, low strength, highly weathered, highly fractured to fractured | | | | | | | |
| | 1.3 | Pit discontinued at 1.3m<br>-Limit of investigation | | | | | | | |

5 10 15 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

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☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 569.0 AHD
**EASTING:** 201240
**NORTHING:** 602422

**PIT No:** 9
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 569 | 0.2 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | 0.4 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled black, dry to moist, medium strength, moderately weathered, fractured | | | | | | | |
| 568 | 1 | Pit discontinued at 0.4m<br>-Bucket refusal | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **9** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 3,8 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the worst case current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the site would be equivalent to worst case Class M* (moderately reactive/filled) conditions. It must be noted that part of the block would be equivalent to Class S* (slightly reactive/filled) conditions due to the shallow rock in the southern half of the block. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class M* site classification indicated above. Therefore the classification must be reassessed should the soil profile change either by adding fill or removing soil from the block and/or if the presence of service trenches or retaining walls are within the zone of influence of the block. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated across parts of the site. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

AS 2870:2011, Residential Slabs and Footings, Standards Australia.

AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 3,8
Drawing 1

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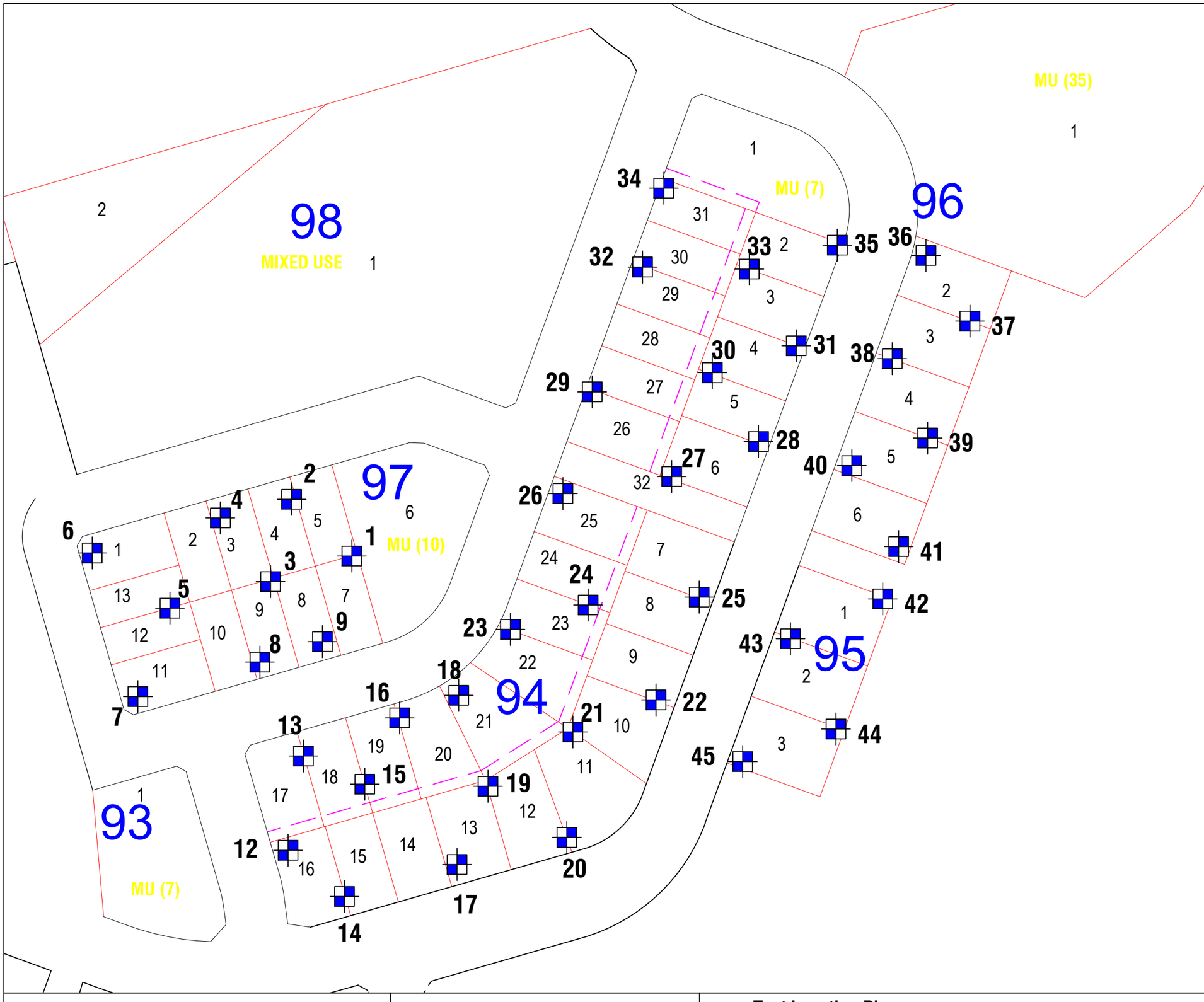
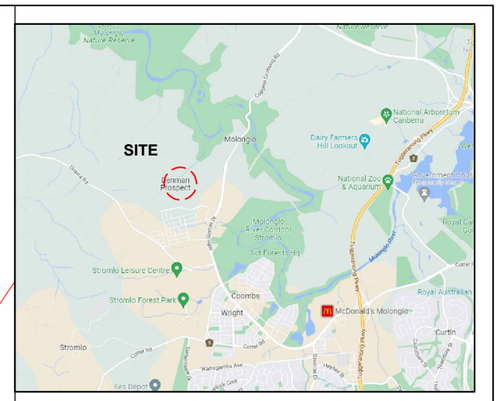
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 570.0 AHD
**EASTING:** 201225
**NORTHING:** 602474

**PIT No:** 3
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 570 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | FILL/Clayey SAND (SC): fine to coarse grained sand, brown, with fine to coarse gravel, dry to moist, inferred dense, FILL | | D | 0.3 | | | | |
| | 0.7 | Silty CLAY (CL-CI): low to medium plasticity, red brown, with fine to coarse grained sand, dry to moist, w<PL, hard, residual | | | | | | | |
| 569 | 1 | | | D | 1.0 | | | | 1 |
| | 1.1 | DACITIC IGNIMBRITE: fine to coarse grained, red brown, low strength, highly weathered, highly fractured to fractured | | | | | | | |
| | 1.3 | Pit discontinued at 1.3m<br>-Limit of investigation | | | | | | | |

5 10 15 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 568.0 AHD
**EASTING:** 201211
**NORTHING:** 602430

**PIT No:** 8
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 568 | 0.1 | FILL/Sandy Silty CLAY (CL): low plasticity, brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, inferred very stiff, FILL | | | | | | | |
| | 0.2 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled orange black brown, with significantly weathered seams, low to medium strength, moderately weathered, fractured | | | | | | | |
| | | Pit discontinued at 0.2m<br>-Refusal on weathered rock | | | | | | | |
| 567 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **10** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 5,8 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the soil profile would be equivalent to Class S* (slightly reactive/filled) conditions. If the building pad, following site excavations exposes entirely weathered rock, a Class A (non-reactive) classification may be appropriate. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class S* site classification indicated above. Therefore the site classification must be reassessed should the subsurface profile change by either cutting or filling and/or if the presence of service trenches, retaining walls or submerged structures are within the zone of influence of the proposed footings. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

AS 2870:2011, Residential Slabs and Footings, Standards Australia.

AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 5,8
Drawing 1

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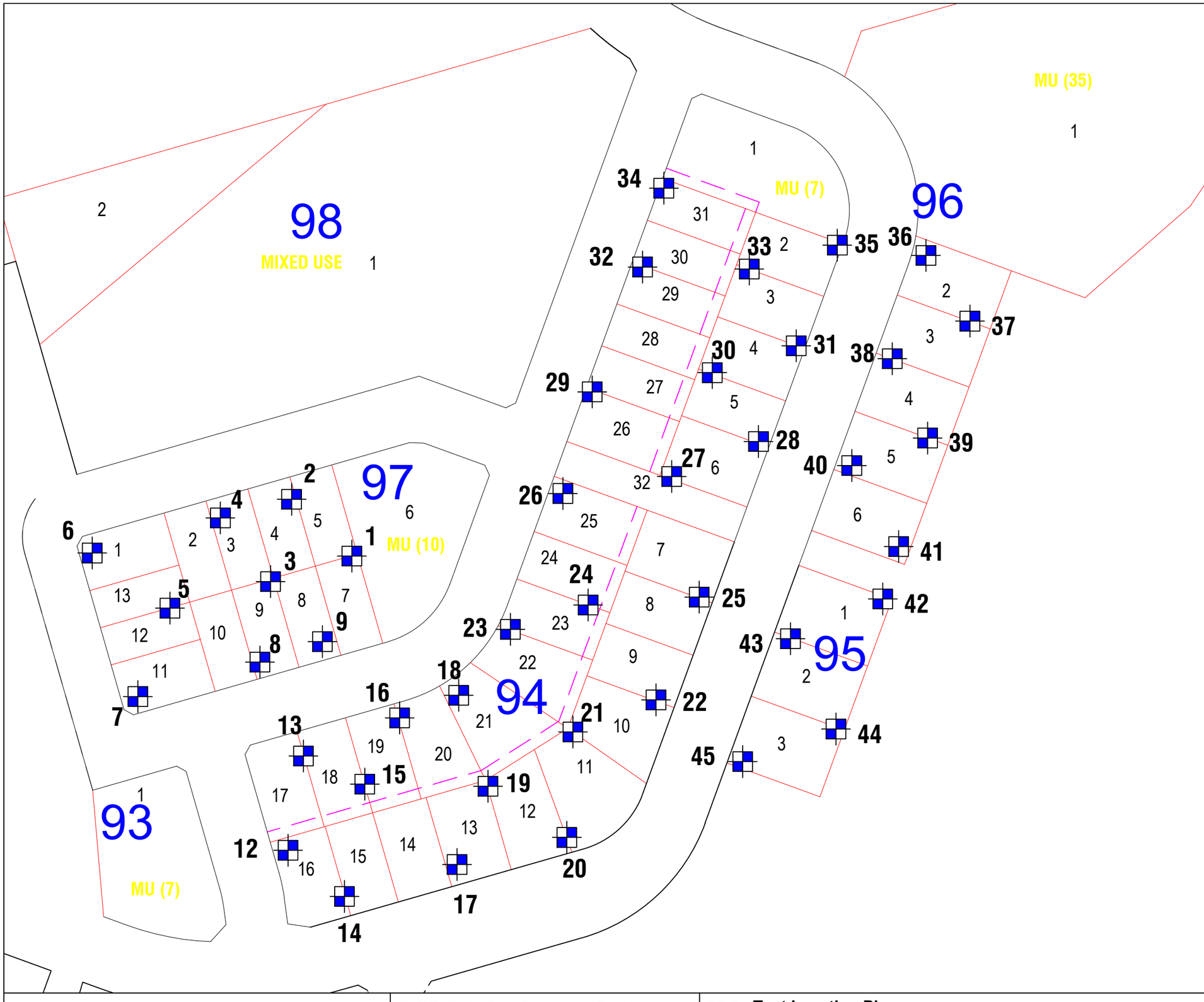
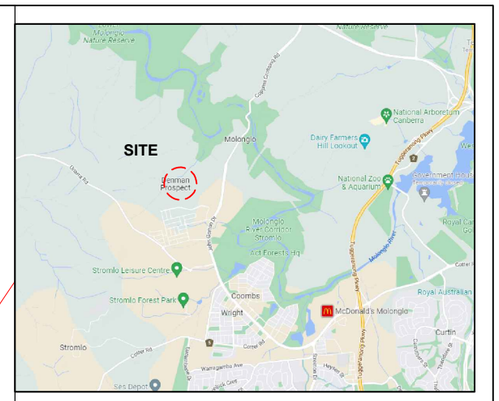
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 571.0 AHD
**EASTING:** 201226
**NORTHING:** 602447

**PIT No:** 5
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 571 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | Silty CLAY (CL): low plasticity, red orange brown, with fine to coarse sand, dry to moist, w<PL, hard, residual | | D | 0.2 | | | | |
| | 0.25 | DACITIC IGNIMBRITE: fine to coarse grained, grey brown mottled orange brown, low to medium strength, highly to moderately weathered, highly fractured to fractured | | | | | | | |
| | 0.4 | Pit discontinued at 0.4m<br>-Bucket slow progress | | D | 0.4 | | | | |
| 570 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 568.0 AHD
**EASTING:** 201211
**NORTHING:** 602430

**PIT No:** 8
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 568 | 0.1 | FILL/Sandy Silty CLAY (CL): low plasticity, brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, inferred very stiff, FILL | | | | | | | |
| | 0.2 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled orange black brown, with significantly weathered seams, low to medium strength, moderately weathered, fractured | | | | | | | |
| | | Pit discontinued at 0.2m<br>-Refusal on weathered rock | | | | | | | |
| 567 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **11** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 5,7 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the soil profile would be equivalent to Class S* (slightly reactive/filled) conditions. If the building pad, following site excavations exposes entirely weathered rock, a Class A (non-reactive) classification may be appropriate. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class S* site classification indicated above. Therefore the site classification must be reassessed should the subsurface profile change by either cutting or filling and/or if the presence of service trenches, retaining walls or submerged structures are within the zone of influence of the proposed footings. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

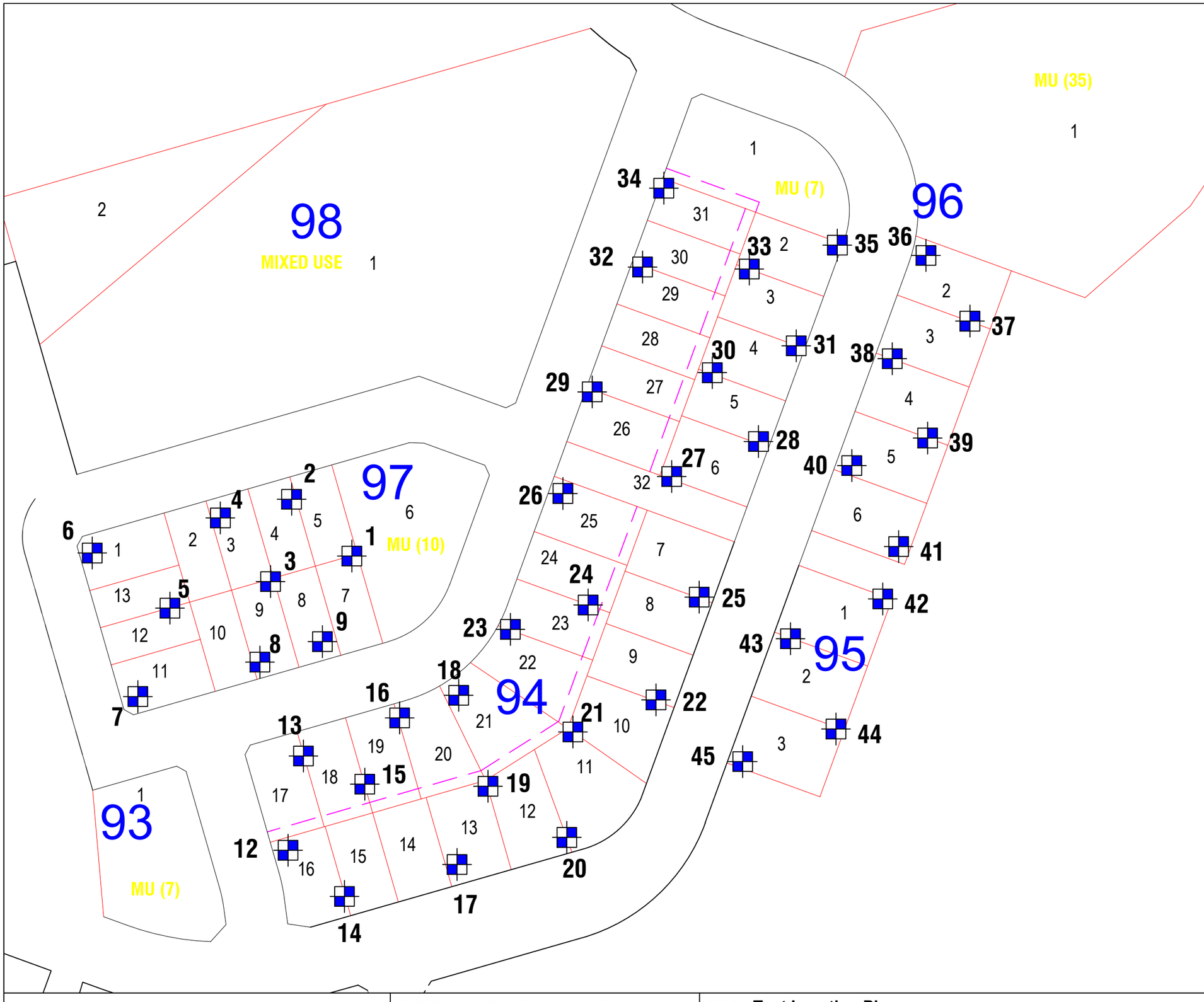
AS 2870:2011, Residential Slabs and Footings, Standards Australia.

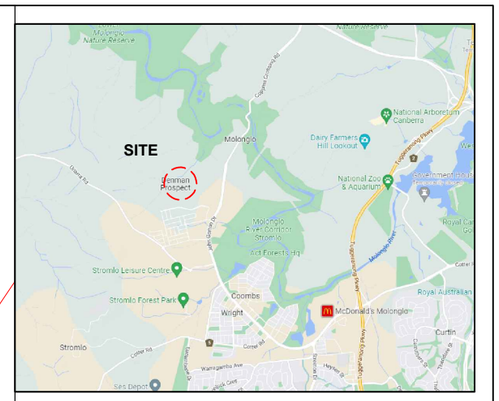
AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 5,7
Drawing 1

Douglas Partners
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 571.0 AHD
**EASTING:** 201226
**NORTHING:** 602447

**PIT No:** 5
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 571 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | Silty CLAY (CL): low plasticity, red orange brown, with fine to coarse sand, dry to moist, w<PL, hard, residual | | D | 0.2 | | | | |
| | 0.25 | DACITIC IGNIMBRITE: fine to coarse grained, grey brown mottled orange brown, low to medium strength, highly to moderately weathered, highly fractured to fractured | | | | | | | |
| | 0.4 | Pit discontinued at 0.4m<br>-Bucket slow progress | | D | 0.4 | | | | |
| 570 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 568.0 AHD
**EASTING:** 201274
**NORTHING:** 602457

**PIT No:** 7
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 568 | | FILL/Sandy Silty CLAY (CL): low plasticity, brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, inferred very stiff, FILL | | | | | | | |
| | 0.2 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled orange black brown, with significantly weathered seams, low to medium strength, moderately weathered, fractured | | D | 0.5 | | | | |
| | 0.7 | Pit discontinued at 0.7m<br>-Limit of investigation | | | | | | | |
| 567 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **12** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 5,7 and Drawing 1.

**Bulk Earthworks:** Controlled fill within the block was placed under Level 1 control as defined in AS 3798:2007.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the soil profile would be equivalent to Class S* (slightly reactive/filled) conditions. If the building pad, following site excavations exposes entirely weathered rock, a Class A (non-reactive) classification may be appropriate. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class S* site classification indicated above. Therefore the site classification must be reassessed should the subsurface profile change by either cutting or filling and/or if the presence of service trenches, retaining walls or submerged structures are within the zone of influence of the proposed footings. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

It is recommended that footing excavations be inspected by a geotechnical engineer.

This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:**

AS 2870:2011, Residential Slabs and Footings, Standards Australia.

AS 3798:2007, Guidelines on Earthworks for Commercial and Residential Developments, Standards Australia.

**Attachments:**

Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 5,7
Drawing 1

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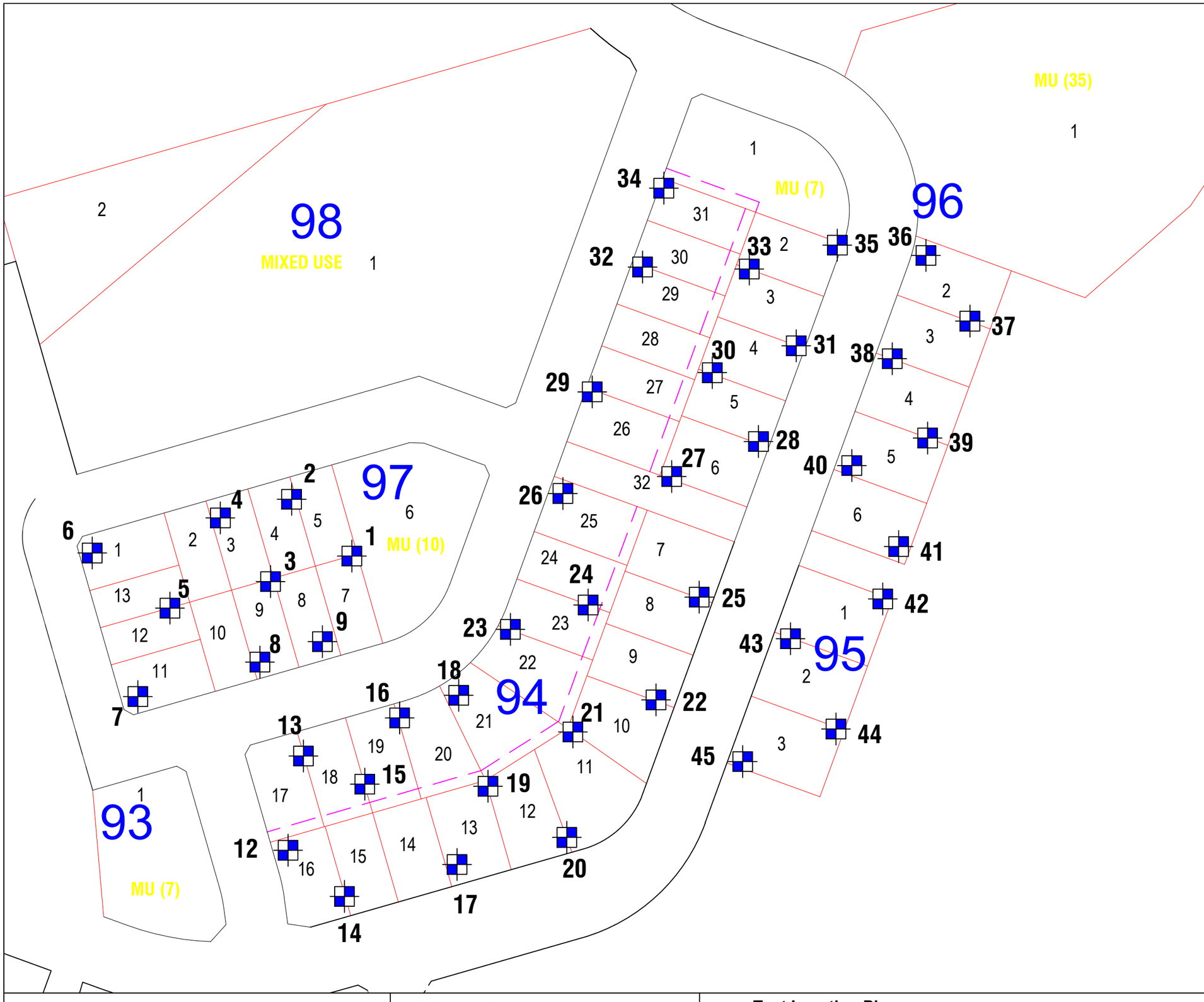
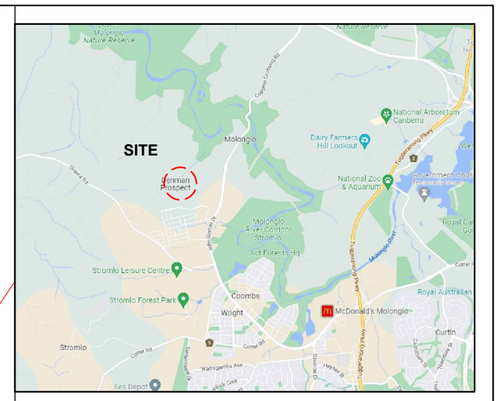
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 571.0 AHD
**EASTING:** 201226
**NORTHING:** 602447

**PIT No:** 5
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 571 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | Silty CLAY (CL): low plasticity, red orange brown, with fine to coarse sand, dry to moist, w<PL, hard, residual | | D | 0.2 | | | | |
| | 0.25 | DACITIC IGNIMBRITE: fine to coarse grained, grey brown mottled orange brown, low to medium strength, highly to moderately weathered, highly fractured to fractured | | | | | | | |
| | 0.4 | Pit discontinued at 0.4m<br>-Bucket slow progress | | D | 0.4 | | | | |
| 570 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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Geotechnics / Environment / Groundwater

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 568.0 AHD
**EASTING:** 201274
**NORTHING:** 602457

**PIT No:** 7
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 568 | | FILL/Sandy Silty CLAY (CL): low plasticity, brown, fine to coarse grained sand, with fine to coarse gravel, trace cobbles, dry to moist, w<PL, inferred very stiff, FILL | | | | | | | |
| | 0.2 | DACITIC IGNIMBRITE: fine to coarse grained, brown mottled orange black brown, with significantly weathered seams, low to medium strength, moderately weathered, fractured | | D | 0.5 | | | | |
| | 0.7 | Pit discontinued at 0.7m<br>-Limit of investigation | | | | | | | |
| 567 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

Douglas Partners
Geotechnics / Environment / Groundwater

# SITE CLASSIFICATION REPORT SUMMARY

| | | | | | |
|---|---|---|---|---|---|
| **BLOCK:** | **13** | **SECTION:** | **97** | **SUBURB:** | **Denman Prospect** |
| **JOB No:** | **88231.50** | | | **DATE:** | **August 2023** |
| **CLIENT:** | **Capital Estate Developments Pty Ltd** | | | | **REV: 0** |

## Classification Procedures:

**Existing Subsurface Conditions:** Refer attached test pit log(s) – Pit(s) 5,6 and Drawing 1.

**Laboratory Results:** Previous laboratory testing results indicated liquid limit ranging from 25-80%, plasticity index ranging from 12-57%, and linear shrinkage ranging from 6-20%.

**Site Classification:** Site classification in accordance with AS2870:2011 provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Based on the current soil profile / state, on limited subsurface information, soil reactivity and allowing for variation in the subsoil profile, the natural soil profile would be equivalent to Class S (slightly reactive) conditions. If the building pad, following site excavations exposes entirely weathered rock, a Class A (non-reactive) classification may be appropriate. Should groundwater be encountered during any site cut, Class P conditions would be warranted. Appropriate drainage measures would then be required to control the groundwater seepages to possibly enable the conventional Class S site classification indicated above. Therefore the site classification must be reassessed should the subsurface profile change by either cutting or filling and/or if the presence of service trenches, retaining walls or submerged structures are within the zone of influence of the proposed footings. Reference must be made to the comments provided below.

**Footing Systems:** Reference must be made to AS2870:2011 which indicates footing systems that are appropriate for each site classification. All footings must found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Dwelling design must ensure suitable drainage and uniform moisture conditions are maintained in the vicinity of footings. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

**Maintenance Guidelines:** Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils and in particular in respect to maintaining good surface drainage. It notes that minor cracking in most structures is inevitable, and it describes site maintenance practices aimed at minimising foundation movements that can lead to cracking damage.

**Comments/ Limitations:**

The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.

Development specific geotechnical investigations must be undertaken.

Additional topsoils / fill may have been spread subsequent to the investigation.

Site preparation prior to the construction should include removal of all vegetation, topsoil and any uncontrolled fill.

All new fill must be placed under controlled conditions (AS 3798:2007), otherwise Class P conditions would be warranted in those fill areas.

Some variability in subsurface conditions must be anticipated.

Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction. Groundwater seepages are highly likely after heavy or prolonged rain.

Hard rock excavation must be anticipated. It is recommended that excavation depths be minimal to reduce potential site costs.

The above site classification is provided on the basis that all building materials/waste and stockpiles are removed from site and have not been spread across the site.

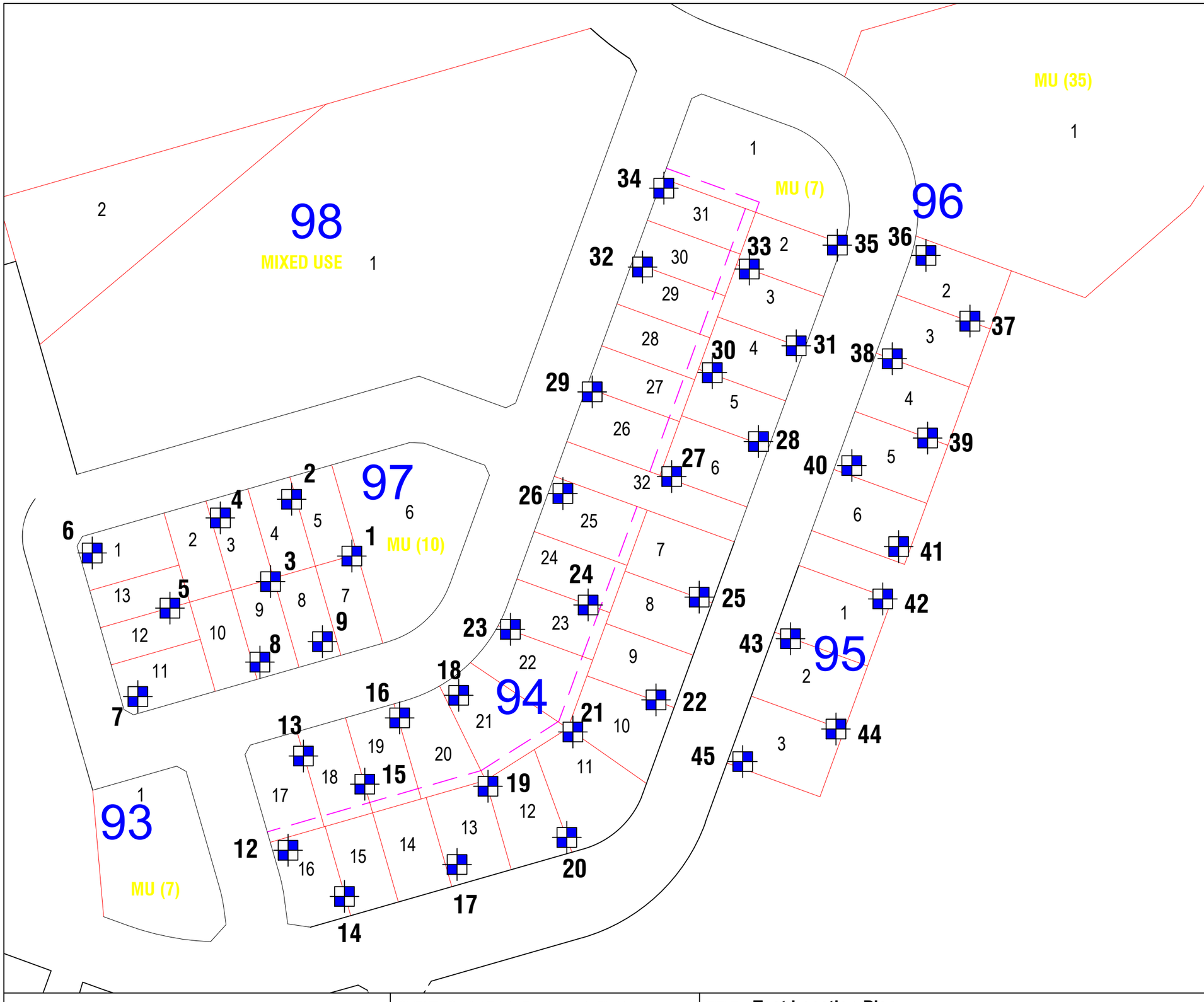
It is recommended that footing excavations be inspected by a geotechnical engineer.

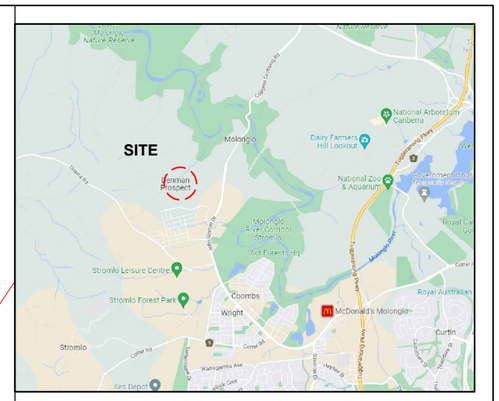
This report must be read in conjunction with the attached "Limitations" and notes "About this Report".

**References:** AS 2870:2011, Residential Slabs and Footings, Standards Australia.

**Attachments:**
Limitations & About this Report
Explanatory Notes
Test Pit Log(s) Pit(s) 5,6
Drawing 1

Douglas Partners
Geotechnics / Environment / Groundwater



Locality Plan

## LEGEND

- Approximate Test Pit Location
- XY Block Number
- XY Section Number

NOTE: Base drawing from Woden Contractors

| | | | |
|---|---|---|---|
| Douglas Partners<br>Geotechnics / Environment / Groundwater | CLIENT: Capital Estate Developments Pty Ltd | TITLE: **Test Location Plan**<br>**Proposed Residential Subdivision**<br>**Stage 2, Denman North Estate, Denman Prospect** | PROJECT No: 88231.50 |
| | OFFICE: Canberra DRAWN BY: GM | | DRAWING No: 1 |
| | SCALE: As Shown DATE: 31.07.2023 | | REVISION: 0 |

# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 571.0 AHD
**EASTING:** 201226
**NORTHING:** 602447

**PIT No:** 5
**PROJECT No:** 88231.50
**DATE:** 3/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 571 | 0.1 | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | | Silty CLAY (CL): low plasticity, red orange brown, with fine to coarse sand, dry to moist, w<PL, hard, residual | | D | 0.2 | | | | |
| | 0.25 | DACITIC IGNIMBRITE: fine to coarse grained, grey brown mottled orange brown, low to medium strength, highly to moderately weathered, highly fractured to fractured | | | | | | | |
| | 0.4 | Pit discontinued at 0.4m<br>-Bucket slow progress | | D | 0.4 | | | | |
| 570 | 1 | | | | | | | | 1 |

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** ADFH/SK

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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# TEST PIT LOG

**CLIENT:** Capital Estate Developments Pty Ltd
**PROJECT:** Proposed Residential Subdivision
**LOCATION:** Stage 2 Denman North Estate, Denman Prospect

**SURFACE LEVEL:** 570.0 AHD
**EASTING:** 201246
**NORTHING:** 602450

**PIT No:** 6
**PROJECT No:** 88231.50
**DATE:** 2/8/2023
**SHEET** 1 OF 1

| RL | Depth (m) | Description of Strata | Graphic Log | Sampling & In Situ Testing: Type | Depth | Sample | Results & Comments | Water | Dynamic Penetrometer Test (blows per mm) |
|---|---|---|---|---|---|---|---|---|---|
| 570 | | TOPSOIL FILL/Sandy SILT (ML): low plasticity, brown, fine to coarse grained sand, trace fine to coarse gravel, dry to moist, w<PL, TOPSOIL FILL | | | | | | | |
| | 0.2 | Sandy Silty CLAY (CL-CI): low to medium plasticity, orange red brown, fine to coarse grained sand, with gravel, moist, w<PL, hard, possibly FILL | | D | 0.3 | | pp >400 | | |
| | 0.4 | TUFF: fine to coarse grained, grey brown, with clay seams sand high strength seams, low to medium strength, highly to moderately weathered, highly fractured to fractured | | D | 0.7 | | | | |
| | 0.8 | Pit discontinued at 0.8m<br>-Bucket slow progress | | | | | | | |
| 569 | 1 | | | | | | | | 1 |

**RIG:** CAT 304C CR mini excavator fitted with a 300mm wide bucket

**LOGGED:** GM

**SURVEY DATUM:** ACT Stromlo

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:** Surface levels and coordinates are approximate only and must not be relied upon.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

**SAMPLING & IN SITU TESTING LEGEND**

| | | | | | |
|---|---|---|---|---|---|
| A | Auger sample | G | Gas sample | PID | Photo ionisation detector (ppm) |
| B | Bulk sample | P | Piston sample | PL(A) | Point load axial test Is(50) (MPa) |
| BLK | Block sample | $U_x$ | Tube sample (x mm dia.) | PL(D) | Point load diametral test Is(50) (MPa) |
| C | Core drilling | W | Water sample | pp | Pocket penetrometer (kPa) |
| D | Disturbed sample | ▷ | Water seep | S | Standard penetration test |
| E | Environmental sample | ▼ | Water level | V | Shear vane (kPa) |

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