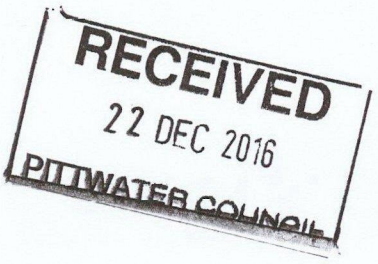
AcroCert

19 December 2016
2013-1914-A

The General Manager
Pittwater Council
PO Box 882
Mona Vale NSW 1660




**Re: Office & Shop & 25 x Townhouses (Units 1 - 25)**
**Lot 11 DP 5464**
**Macpherson Street WARRIEWOOD**
**Development Application No.: N0085/11/S96/3A**

Please find attached certified documents for archiving by Council. Would you please forward a receipt to AcroCert Pty Ltd.

The applicant for this lodgement is as follows:-

**AcroCert Pty Ltd**
**PO Box 216**
**MAITLAND NSW 2320**

Should you require any further information or assistance, please contact the undersigned on 02 4933 5626 during normal working hours.

Yours sincerely

HHodges

**Hayley Hodges**
**Administration Assistant**

| **OFFICE USE ONLY** | |
|---|---|
| Posted/Delivered to Council: | 19 Dec 2016 |
| Cheque Number: | 6516 |
| Certificate Lodged: | Occupation Certificate |

$36 REC: 405872 22/12/16

AcroCert

# INTERIM OCCUPATION CERTIFICATE

Environmental Planning & Assessment Act 1979, as amended

# APPROVED

| | | | |
|---|---|---|---|
| **Construction Certificate No.:** | 2013-1914-A | **Issued On:** | 15 Jul 2015 |
| **Development Approval No.:** | N0085/11/S96/3A | **Issued On:** | 07 Jul 2011 |

**APPLICANT NAME:** Warriewood Properties Pty Ltd
c/- Paul Allinson

**POSTAL ADDRESS:** Level 1, 4 Ponderosa Parade
WARRIEWOOD NSW 2102

**LAND:** Lot 11 DP5464
Macpherson Street WARRIEWOOD

**DEVELOPMENT:** Office, Shop and 25 x Town Houses (Excludes Shop Fit Outs)

**CERTIFYING AUTHORITY:** AcroCert Pty Ltd

**BCA CLASS:** 1a

**TYPE OF CERTIFICATE:** Interim

**PORTION OF BUILDING:** Units 18 - 25

The Principal Certifying Authority certifies that:-

- The health and safety of the occupants of the building have been taken into consideration where an Interim Occupation Certificate is issued.
- A current Development Consent or Complying Development Certificate is in force for the building.
- If any building work has been carried out, a current Construction Certificate has been issued with respect to the plans and specifications for the building.
- The building is suitable for occupation or use in accordance with its classification under the Building Codes of Australia.
- Where applicable, a Fire Safety Certificate has been issued for the building and a report from the Fire Commissioner has been considered.

| **Stephen Murray - BPB0282**<br>**Accredited Certifier on behalf of the PCA AcroCert Pty Ltd - ABC 5** | **Certificate Issued On:** |
|---|---|
| | 16 December 2016 |

# Application for an Occupation Certificate

AcroCert

**Information for the applicant**

- This form may be used to apply for:
  - A Final Occupation Certificate to authorise occupation or use of a new building or structure
  - An Interim Occupation Certificate to authorise the occupation or use of a partially completed building or structure
- To minimise delay in receiving the Occupation Certificate please fill in all sections and ensure all relevant information and documents are provided. If clarification and/or advice is required when completing this form please contact our office for assistance.
- Once completed this application must be delivered by hand, by post or transmitted electronically to AcroCert. Applications may not be sent by fax.

| **Section A** | **Type of Occupation Certificate applied for (tick one)** | |
|---|---|---|
| ☒ Interim Occupation Certificate | | ☐ Final Occupation Certificate |

| **Section B** | **Details of the applicant*** |
|---|---|
| * An application for an Occupation Certificate may only be made by a person who is eligible to appoint a PCA for the development. An applicant may not be the person who carried out the building work, unless that person owns the land on which the work was carried out. | |
| Name(s): | WARRIEWOOD PROPERTIES PTY LTD |
| Correspondence to be c/- | c/- PETER HAKEA |
| Postal Address: | LEVEL 1, 4 PONDEROSA PDE WARRIEWOOD NSW 2102 |
| Phone(s): | 99996494 0411700233 |
| Email: | phakea11@auspacific.com |

| **Section C** | **Details of the land where the building work was carried out** |
|---|---|
| Street Address: | 9 - 16 HAKEA DRIVE |
| Suburb & Postcode: | WARRIEWOOD NSW 2102 |
| Title Particulars (Lot & DP/SP): | PROPOSED LOT NOS ATTACHED * |

| **Section D** | **Description of the building or part of building to which this application relates** |
|---|---|
| If the application relates to a new use of the building or part of the building, also describe the new use: | NEW TOWN HOUSES (UNITS 18 - 21). |

| **Section E** | **Building classification under the Building Code of Australia (BCA)** |
|---|---|
| Existing Classification: | |
| New Classification (if changed): | |

| **Section F** | **List of documents** |
|---|---|
| ✓ | Applicants must provide the documents listed below. Confirm by placing a tick in the appropriate box(s) |
| | FULL PACKAGE OF INFORMATION SUPPLIED TO STEPHEN MURRAY BY PAUL ALLINSON & STRONT BUILD |
| | |
| | |
| | |
| | |
| | |

| Section G Applicants' signature | | | |
|---|---|---|---|
| | Owner 1 | Owner 2 | Owner 3 |
| Name of all owners: | WARRIGAL BOP PROPERTIES PTY LTD | | |
| Signature of all owners: | | | |
| Date: | 8 DEC 16 | | |

| Office Use Only | | | |
|---|---|---|---|
| To be completed by the certifying authority immediately after receiving this Application | | | |
| Application No.: | | Date Received: | |

| AcroCert Contact Details | |
|---|---|
| **Maitland Office** | **Forster Office** |
| 308 High Street (PO Box 216) Maitland NSW 2320<br>E: maitland@acrocert.com.au T: 02 4933 5626 | Shop 1 The Marina, Cnr Little & Wallis Street<br>(PO Box 440) Forster NSW 2428<br>E: forster@acrocert.com.au T: 02 6554 7648 |

The Grove Estate - Warriewood

Eight Townhouses

An Interim OC is only required at this stage of eight townhouses, as we are still consolidating some other Council requirements. This is still part of the CC for the previous 17 townhouses and small retail building, for which AcroCert have issued an interim OC.

Eight townhouses have been built on Lot 8 DP 270822. The address for the eight townhouses are --- Nos 9 – 16 Hakea Drive Warriewood. This internal road within the estate was created as part of the civil works undertaken as part of the DA consent for the entire estate. The first stage of 17 townhouses and the retail building are now settled and occupied.

A summary of the proposed lot numbers that we expect will be applied on title registration, and their respective house numbers, for this 8 lot development on Hakea Drive are as follows:

| Proposed Lot No | House No – Hakea Drive Warriewood |
|---|---|
| 26/270882 | 9 Hakea Drive |
| 27/270882 | 10 Hakea Drive |
| 28/270882 | 11 Hakea Drive |
| 29/270882 | 12 Hakea Drive |
| 30/270882 | 13 Hakea Drive |
| 31/270882 | 14 Hakea Drive |
| 32/270882 | 15 Hakea Drive |
| 33/270882 | 16 Hakea Drive |

Flick Anticimex Pty Ltd
ABN 85 000 059 665
Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

**Site Address:** STAGE 2 14 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1266037

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000

**See Attached Drawing/s**

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard Flick guard

ENVIROPEST
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Flick
Anticimex

| | | | | | |
|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

Enviropest (QLD) Pty Ltd - QBCC 1104229
Enviropest (Sunshine Coast) Pty Ltd - QBCC 1191905

Head Office: 9/39 Stanley Street, Bankstown NSW 2200 Tel: (02) 8713 8070

www.enviropest.com.au

# INSTALLATION OF TERMITE PROTECTION

Builder: STRONGBUILD Date: 5.5.96 065

Site Address: 14 / 23B GARDEN ST
WARRIEWOOD Job Sheet No.: 109957

Installer: MATT Lic No.:

SIGNED: M Ref No.: 126037

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m .....
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS

### Legend

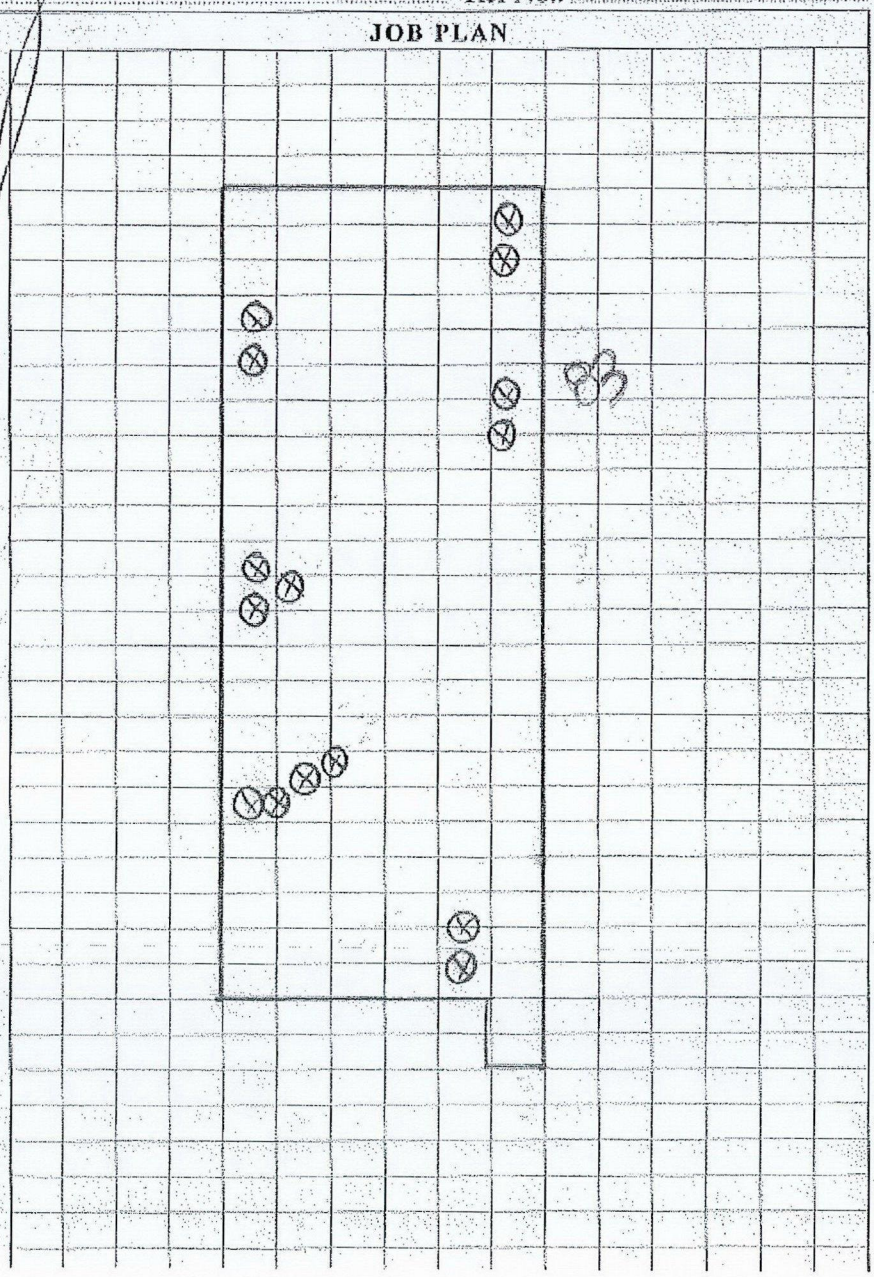
Reticulation Legend
Path trap ⊠ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

Physical Barrier Legend
Penetration ⊗ Start / Finish ×
Granigard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



Flick Anticimex Pty Ltd
ABN 85 000 059 665
Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

**Site Address:** STAGE 2 15 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263498

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000

**See Attached Drawing/s**

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ———
End Cap: ⊃
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: □

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard Flick guard

ENVIROPEST
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Flick
Anticimex

| | | | | | |
|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

Enviropest (QLD) Pty Ltd - QBCC 1104226
Enviropest (Sunshine Coast) Pty Ltd - QBCC 1181906

Head Office: 9/39 Stanley Street, Bankstown NSW 2200 Tel: (02) 8713 8070

www.enviropest.com.au

# INSTALLATION OF TERMITE PROTECTION

603883

Builder: STRONGBUILT Date: 5.5.16

Site Address: 15 / 23B GARDEN ST
WARRIEWOOD

Job Sheet No.: 109954

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263498

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m .....
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier

Type COLLARS

### Legend

Reticulation Legend

Path trap ⊠ Drilled pipe ———
Undrilled pipe - - - - - End cap ———|

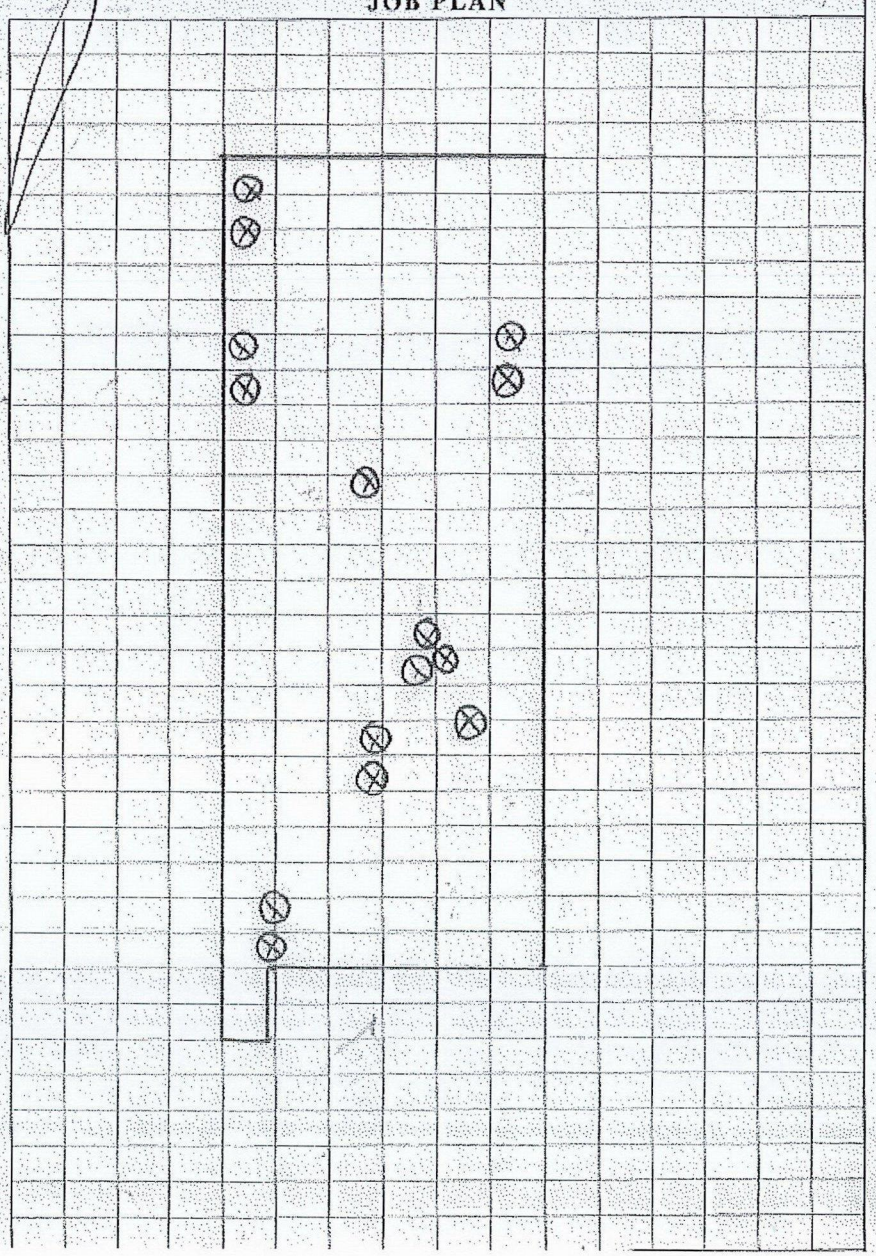
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Protected /

## JOB PLAN



Flick Anticimex Pty Ltd
ABN 85 000 059 665
Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 20/05/2016

**Site Address:** STAGE 2 15 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SV1263930

**CERTIFICATION** This document certifies that Flick Anticimex has performed a Special Visit in accordance with Australian Standards AS 3660.1 - 2000

**See Attached Drawing/s**

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ▯
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: SHANE SEERS
Product(s): FLICKGUARD

**Active Constituent:** DELTAMETHRIN
Volume: 0.0 ltr
**Total of Emulsion:** 0.0 ltr
Length: 40.0 lmt
Area: 0.0 sqm
Units: 0.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard NON TOXIC TERMITE BARRIER Flickguard

ENVIROPEST
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☒ SYDNEY - (02) 8713 8070
☐ MELBOURNE - (03) 9312 5378
☐ CANBERRA - (02) 6239 2457
☐ WOLLONGONG - (02) 4203 3987
☐ ULLADULLA - (02) 4454 1005
☐ WYONG - (02) 4351 6944
☐ NEWCASTLE/HUNTER - (02) 4964 4567
☐ PORT STEPHENS - (02) 4919 0311
☐ PORT MACQUARIE - (02) 6581 3220
☐ COFFS HARBOUR - (02) 6651 5533
☐ BALLINA - (02) 6686 3644
☐ LISMORE - (02) 6624 1519
☐ MOLENDINAR - (07) 5564 5441
☐ BRISBANE - (07) 3638 4130
☐ KUNDA PARK - (07) 5409 0600
☐ TOWNSVILLE - (07) 4766 2303
Enviropest (QLD) - QBCC 1104229
Enviropest (Sunshine Coast) - QBCC 1191505

Flick Anticimex

Head Office: Unit 9, 145 Arthur St, Homebush West, NSW 2140 Tel: (02) 8713 8070

60283

# INSTALLATION OF TERMITE PROTECTION

Builder: Strongbuild Commercial Date: 20-5-16

Site Address: U23/B McPherson Street Warriewood

Job Sheet No.: 119553

Installer: Shane Lic No.:

SIGNED: Ref No.: 263930

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☒ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 40
Subfloor M2 ..... Penetrations Qty .....
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☒ Physical Barrier ☐ Chemical Barrier
Type flick-guard

### Legend

Reticulation Legend

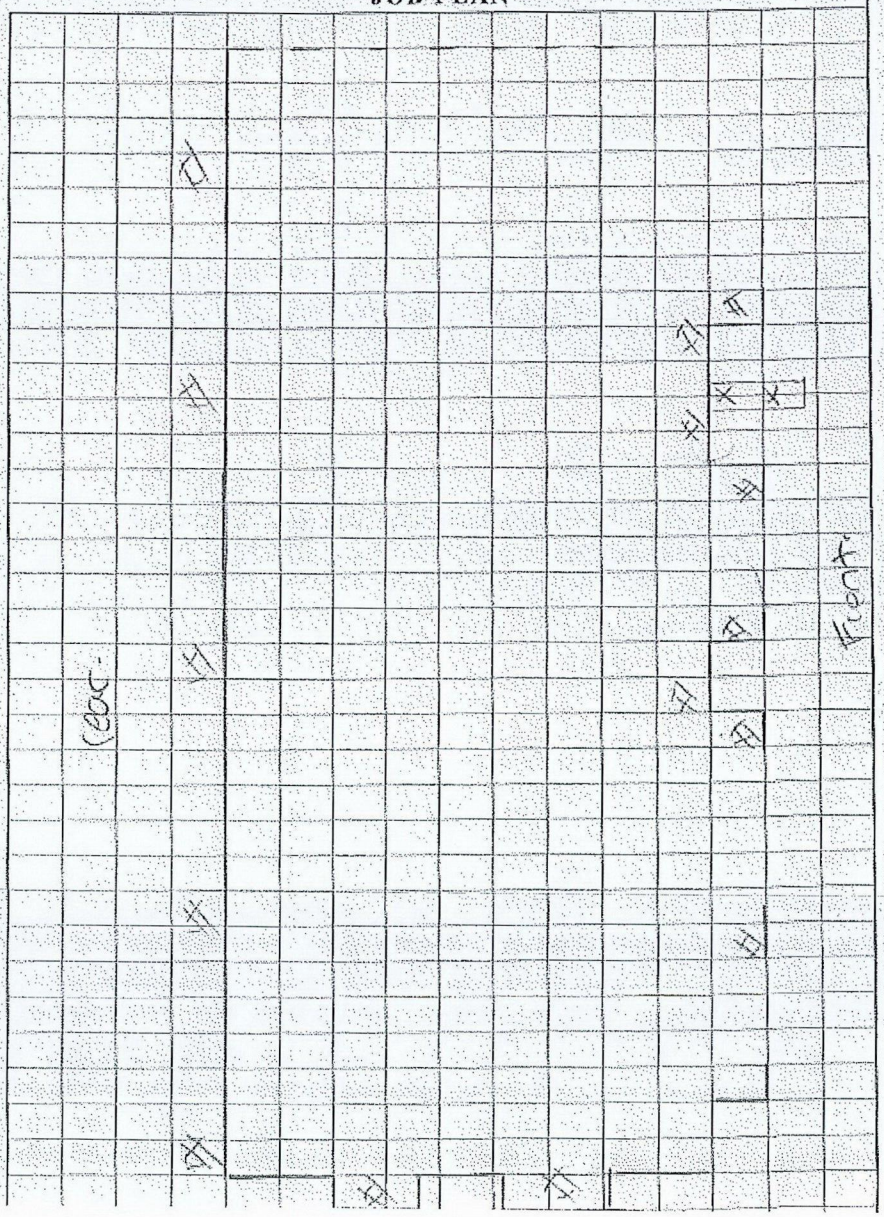
Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap —|

Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

## JOB PLAN



Flick Anticimex Pty Ltd
ABN 85 000 059 665
Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

**Site Address:** STAGE 2 UNIT 12 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263317

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000

See Attached Drawing/s

**Legend**

**Reticulation System**

Injection Boxes: [X]

Drilled Pipe: ———

End Cap: ⊓

Penetrations: ⊗

**Physical Barrier**

Start / Finish: X

Area Protected: ////

Undrilled Pipe: - - - - -

Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD

Product(s): TERMI-COLLAR

**Active Constituent:**

Volume: 0.0 ltr

**Total of Emulsion:**

Length:

Area:

Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard · Granitgard · Flick guard

ENVIROPEST
Your trusted name in pest control
Flick
Anticimex

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9603 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

Head Office: 9/39 Stanley Street, Bankstown NSW 2200 Tel: (02) 8713 8070

Enviropest (QLD) Pty Ltd - QBCC 1104229
Enviropest (Sunshine Coast) Pty Ltd - QBCC 1191906
www.enviropest.com.au

# INSTALLATION OF TERMITE PROTECTION

60218

Builder: STRONGBUILD Date: 5.5.16

Site Address: 12 / 23B GARDEN ST
WARRIEWOOD Job Sheet No.: 109956

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263317

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 38
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m 20
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ⊠ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

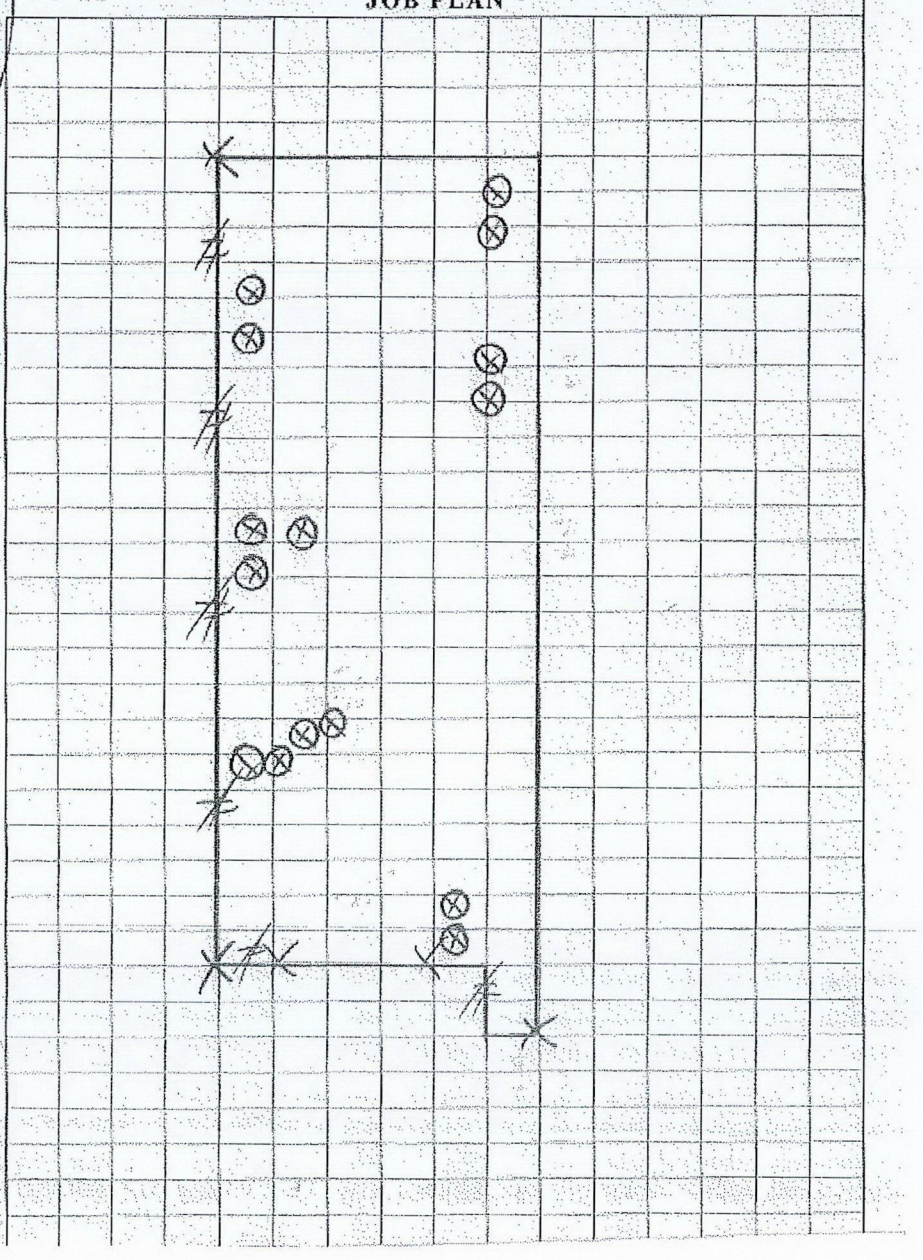
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



Flick Anticimex Pty Ltd
ABN 85 000 059 665
Unit 9, 145 Arthur Street
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☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

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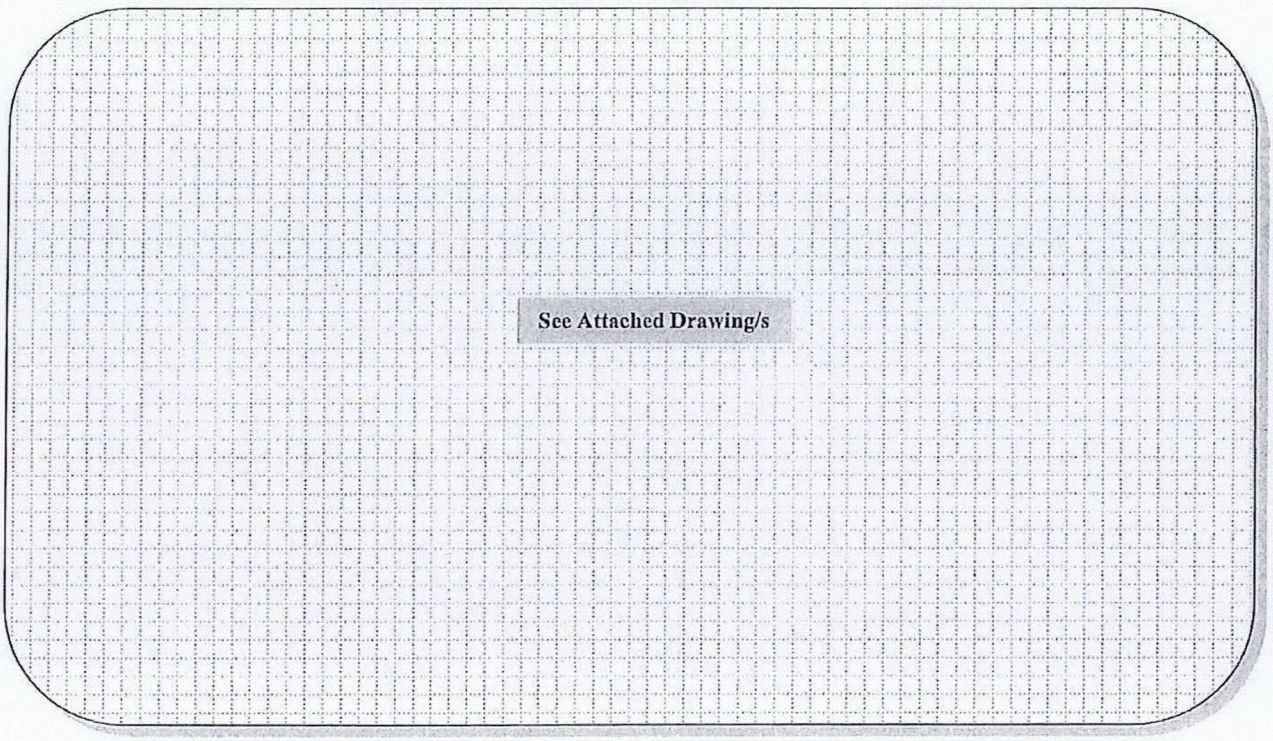
**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263317

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard FlickGuard

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| | | | | | |
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| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 6385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

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# INSTALLATION OF TERMITE PROTECTION

60218

Builder: STRONGBUILD Date: 5.5.16

Site Address: 12 / 23B GARDEN ST WARRIEWOOD Job Sheet No.: 109956

Installer: MATT Lic No..

SIGNED: Ref No.: 1263317

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 83
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m 20
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

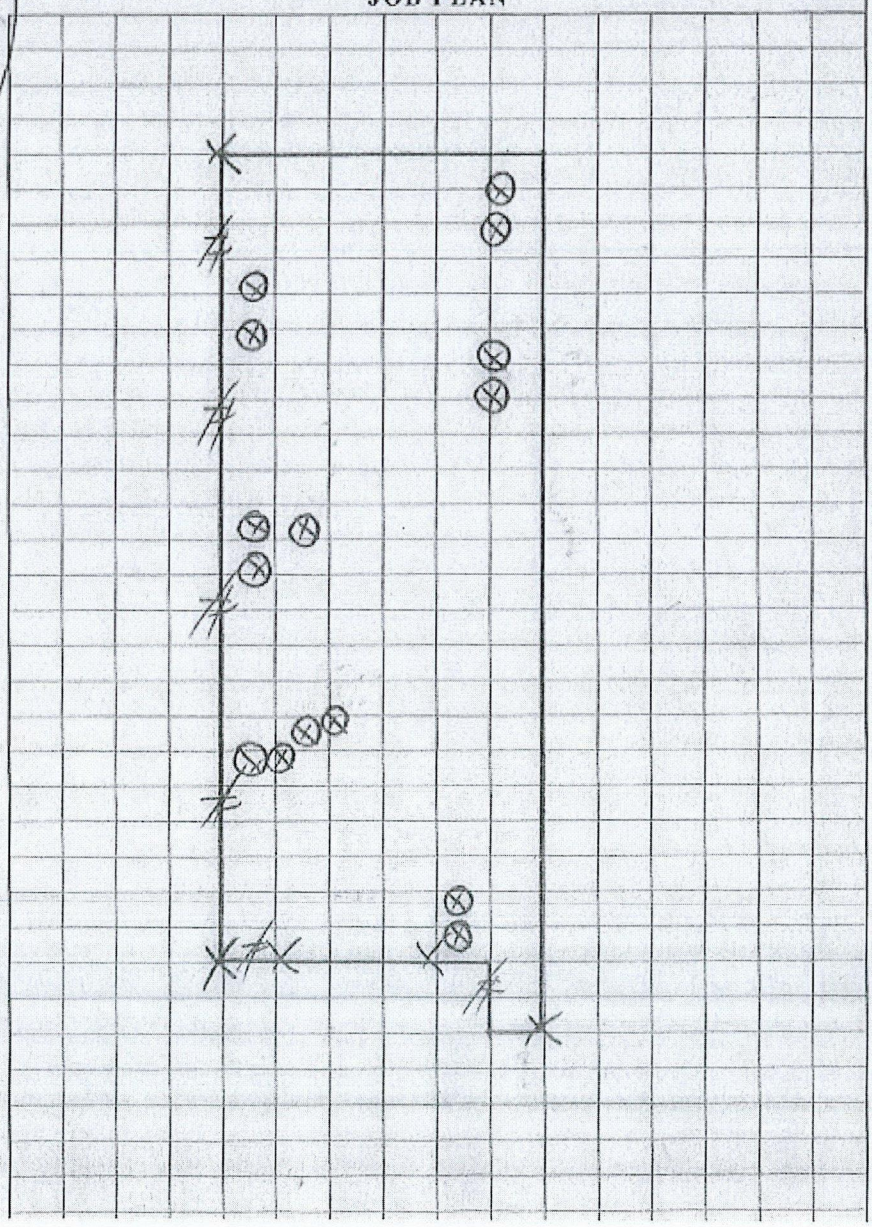
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Protected /

## JOB PLAN



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ABN 85 000 059 665
Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

**Site Address:** STAGE 2 13 / 47/54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1274187

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000

See Attached Drawing/s

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊃
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s):

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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☐ KARIONG - (02) 4340 1270
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☐ NEWCASTLE/HUNTER - (02) 4964 4567
☐ PORT STEPHENS - (02) 4919 0311
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☐ COFFS HARBOUR - (02) 6651 5533
☐ BALLINA - (02) 6686 3644
☐ LISMORE - (02) 6624 1519
☐ MOLENDINAR - (07) 5564 5441
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Head Office: 9/39 Stanley Street, Bankstown NSW 2200 Tel: (02) 8713 8070
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# INSTALLATION OF TERMITE PROTECTION

60215

Builder: STRONABUILD Date: 5.5.16

Site Address: 13 / 23B GARDEN ST
WARRIEWOOD Job Sheet No.: 109953

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263498

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m .....
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS

### Legend

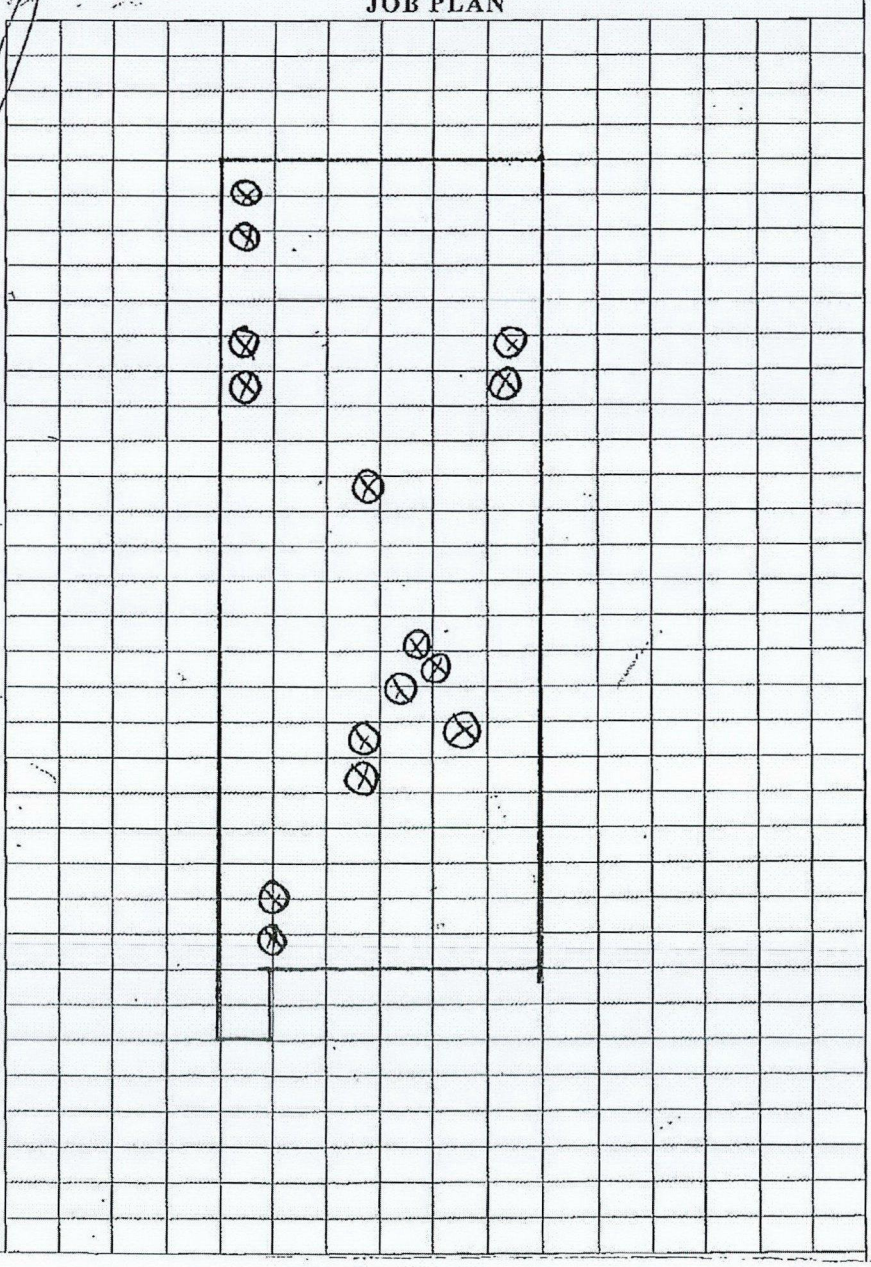
Reticulation Legend
Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

Physical Barrier Legend
Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

**Site Address:** STAGE 2 16 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1266039

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000

**See Attached Drawing/s**

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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| | | | | | | | |
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| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
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# INSTALLATION OF TERMITE PROTECTION

Builder: STRONGBUILD Date: 5.5.16

Site Address: 16 / 23B GARDEN ST

WARRIEWOOD Job Sheet No.: 109958

Installer: MATT Lic No.: 61066

SIGNED: Ref No.: 1266039

## Environmental Information

**External**

Chemical Name .....

Vol of Concentration .....

Vol of Emulsion .....

Equipment:
Hand held spray ☐
Truck mounted spray ☐

Other .....

**Cavity**

Chemical Name .....

Vol of Concentration .....

Vol of Emulsion .....

Equipment:
Hand held spray ☐
Truck mounted spray ☐

Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground

☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m .....

Subfloor M2 ..... Penetrations Qty 15

Cure M2 ..... C/Joint L/m .....

Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier

Type COLLARS

### Legend

Reticulation Legend

Path trap ☒ Drilled pipe ———

Undrilled pipe - - - - End cap ———|

Physical Barrier Legend

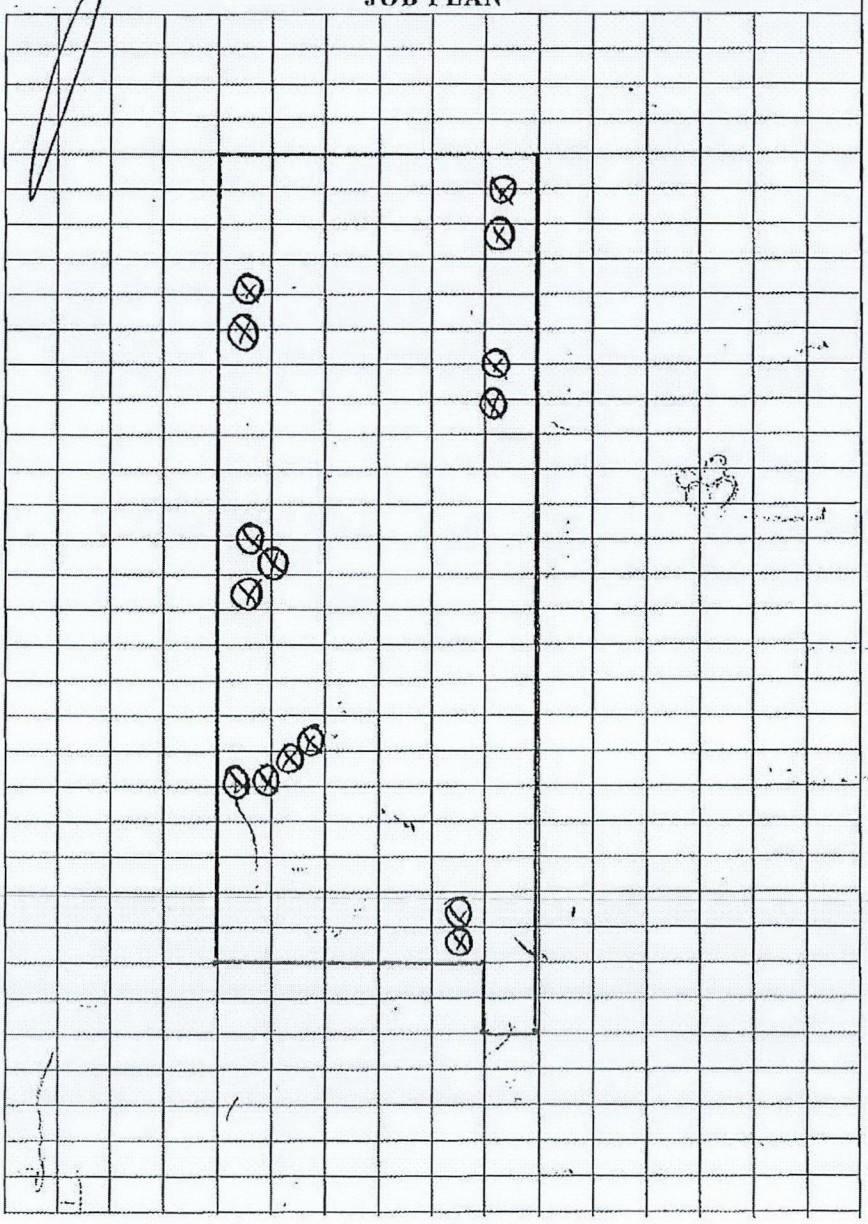
Penetration ⊗ Start / Finish X

Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Protected /

## JOB PLAN



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Homebush West, NSW 2140
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# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

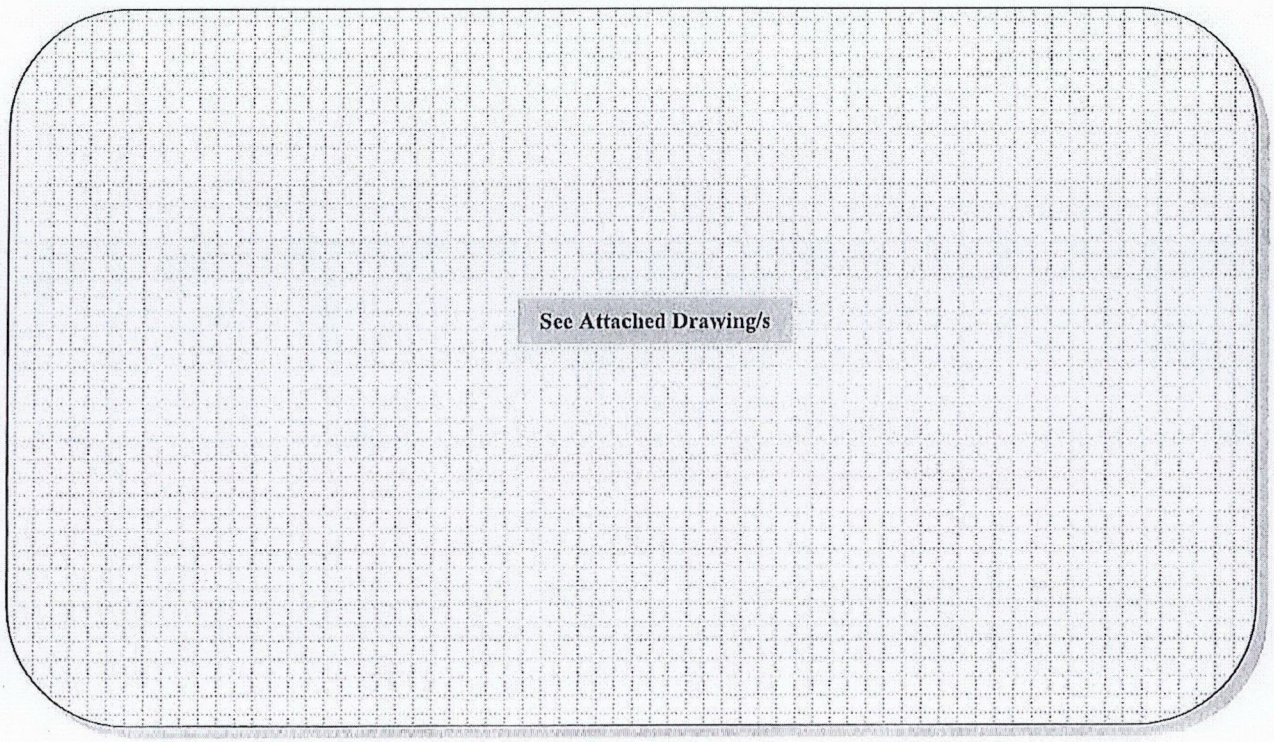
**Site Address:** STAGE 2 16 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1266039

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]

Drilled Pipe: ———

End Cap: ⊓

Penetrations: ⊗

**Physical Barrier**

Start / Finish: X

Area Protected: ////

Undrilled Pipe: - - - - -

Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD

Product(s): TERMI-COLLAR

**Active Constituent:**

Volume: 0.0 ltr

**Total of Emulsion:**

Length:

Area:

Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
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| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
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# INSTALLATION OF TERMITE PROTECTION

Builder: STRONGBUILD Date: 5.5.16

Site Address: 16 / 23B GARDEN ST
WARRIEWOOD Job Sheet No.: 109958

Installer: MATT Lic No.: 61066

SIGNED: Ref No.: 12660397

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m .....
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS

### Legend

Reticulation Legend

Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

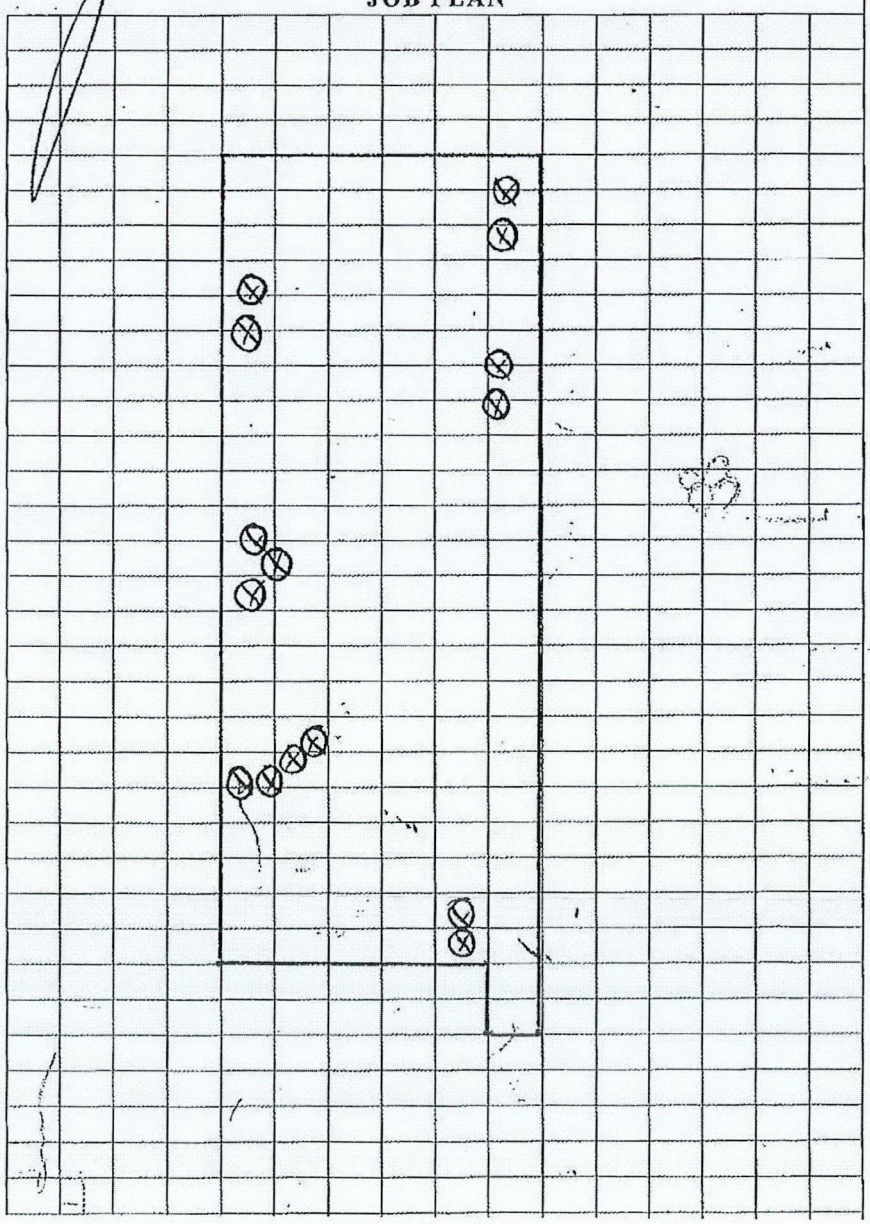
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Protected /

## JOB PLAN



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Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 09/05/2016

**Site Address:** STAGE 2 UNIT 11 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SV1263321

**CERTIFICATION** This document certifies that Flick Anticimex has performed a Special Visit in accordance with Australian Standards AS 3660.1 - 2000

See Attached Drawing/s

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): FLICKGUARD

Active Constituent: DELTAMETHRIN
Volume: 0.0 ltr
Total of Emulsion: 0.0 ltr
Length: 8.0 lmt
Area: 0.0 sqm
Units: 0.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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# INSTALLATION OF TERMITE PROTECTION

60217

Builder: STRONGBUILD Date: 5.5.16

Site Address: 11 / 238 GARDEN ST
WARRIEWOOD Job Sheet No.: 109952

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263315

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/I Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 85
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type... COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ⊠ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

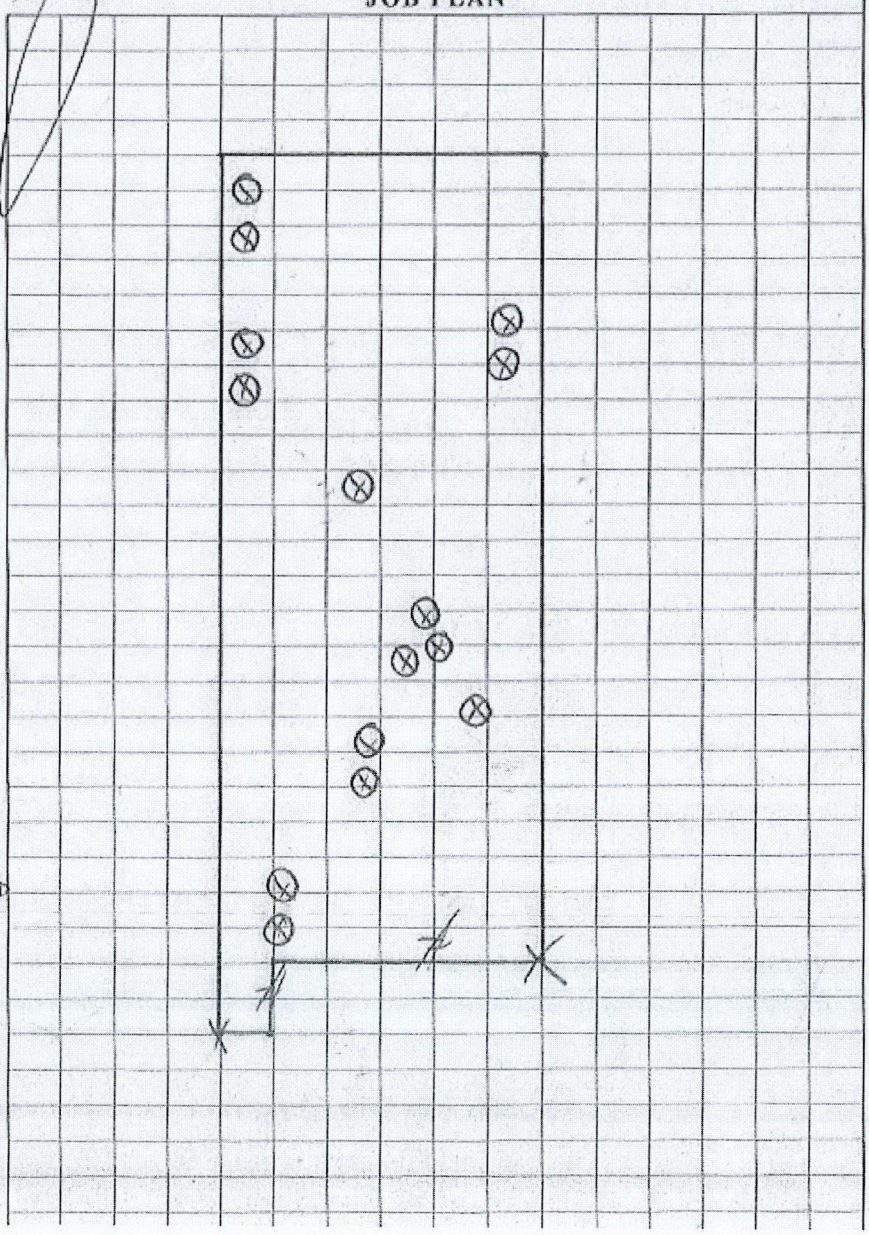
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 09/05/2016

**Site Address:** STAGE 2 UNIT 12 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SV1263322

**CERTIFICATION** This document certifies that Flick Anticimex has performed a Special Visit in accordance with Australian Standards AS 3660.1 - 2000

See Attached Drawing/s

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ———
End Cap: ▯
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD

Product(s): FLICKGUARD
20LM CONSTRUCTION JOINT

Active Constituent: DELTAMETHRIN

Volume: 0.0 ltr
Total of Emulsion: 0.0 ltr
Length: 8.0 lmt
Area: 0.0 sqm
Units: 0.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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☐ ULLADULLA - (02) 4454 1005
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☐ KARIONG - (02) 4340 1270
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☐ PORT STEPHENS - (02) 4919 0311
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☐ BALLINA - (02) 6686 3644
☐ LISMORE - (02) 6624 1519
☐ MOLENDINAR - (07) 5561 5111
☐ BRISBANE - (07) 3290 1011
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# INSTALLATION OF TERMITE PROTECTION

60218

Builder: STRONGBUILD Date: 5.5.16

Site Address: 12 / 23B GARDEN ST WARRIEWOOD

Job Sheet No.: 109956

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263317

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 85
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m 20
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier

Type COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

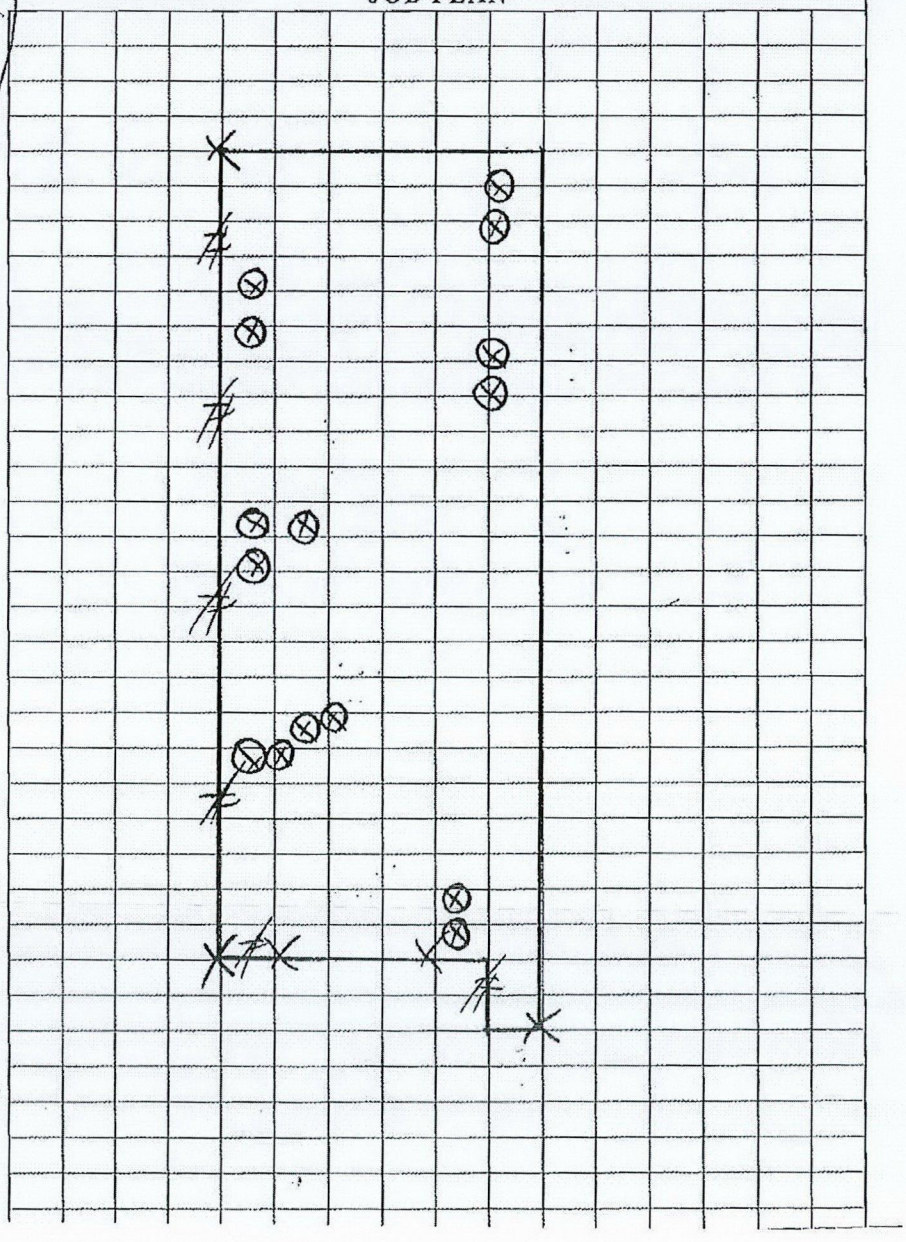
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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Unit 9, 145 Arthur Street
Homebush West, NSW 2140
☎ 13 14 40

# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

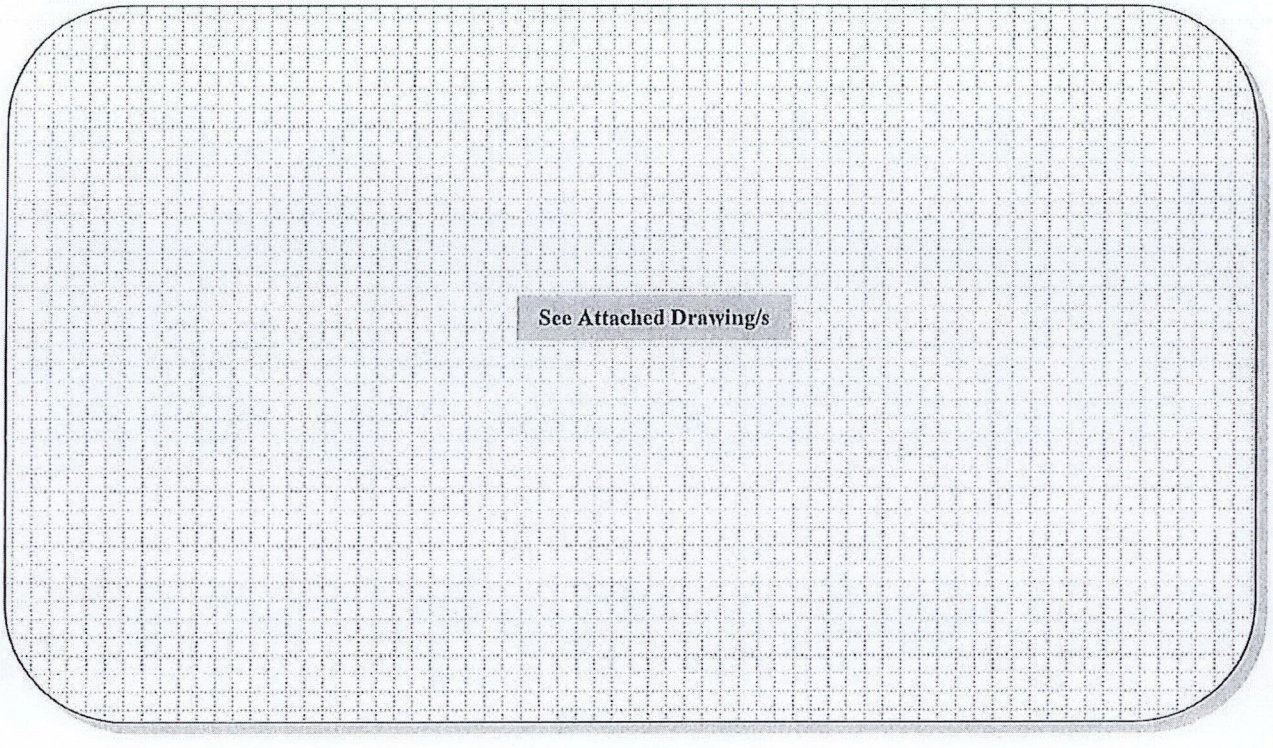
**Site Address:** STAGE 2 UNIT 9 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263312

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ———
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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| | | | | | |
|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

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# INSTALLATION OF TERMITE PROTECTION

60214

Builder: STRONGBUILD Date: 5.5.16

Site Address: 9/23B GARDEN ST WARRIEWOOD Job Sheet No.: 109951

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263312

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 15
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m 16
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS / FLICKGUARD

### Legend

TERMIBLOCK

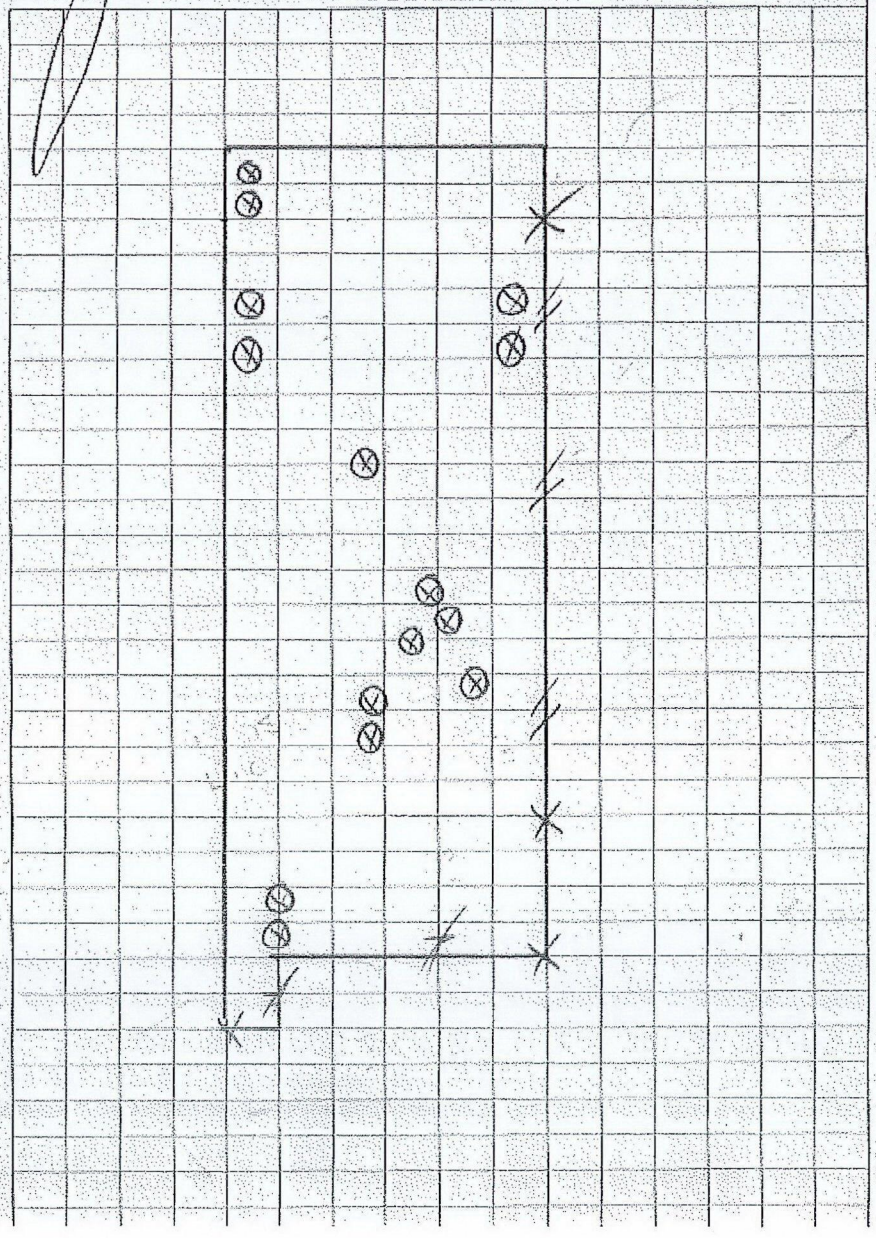
Reticulation Legend
Path trap ☒ Drilled pipe ———
Undrilled pipe - - - - End cap ———|

Physical Barrier Legend
Penetration ⊗ Start / Finish ×
Graitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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# CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 09/05/2016

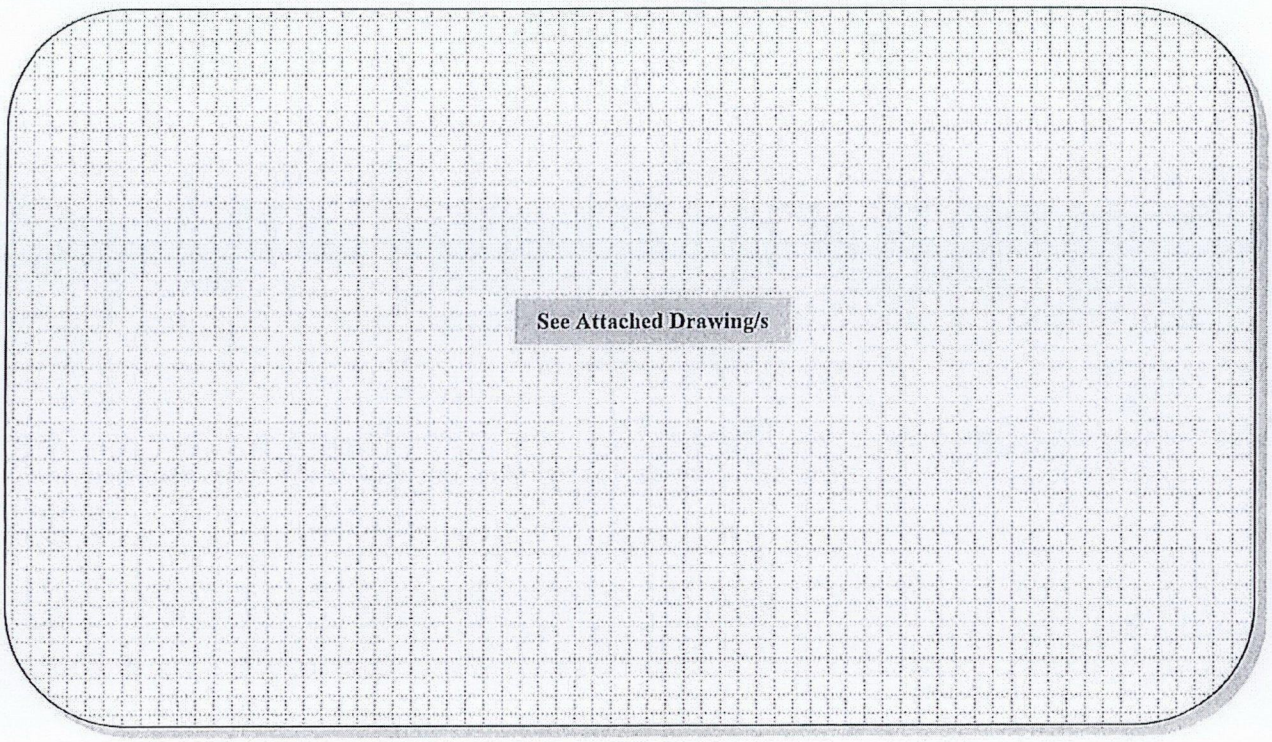
**Site Address:** STAGE 2 UNIT 10 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SV1263320

**CERTIFICATION** This document certifies that Flick Anticimex has performed a Special Visit in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ———
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): FLICKGUARD

**Active Constituent:** DELTAMETHRIN
Volume: 0.0 ltr
**Total of Emulsion:** 0.0 ltr
Length: 8.0 lmt
Area: 0.0 sqm
Units: 0.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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| | | | | | |
|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 6385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

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60215

# INSTALLATION OF TERMITE PROTECTION

Builder: STRONGBUILD Date: 5-5-16

Site Address: 10 / 23 B GARDEN ST
WARRILWOOD Job Sheet No.: 109955

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263314

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ H/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 8
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS + FLICKGUARD

### Legend

**Reticulation Legend**

Path trap ⊠ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

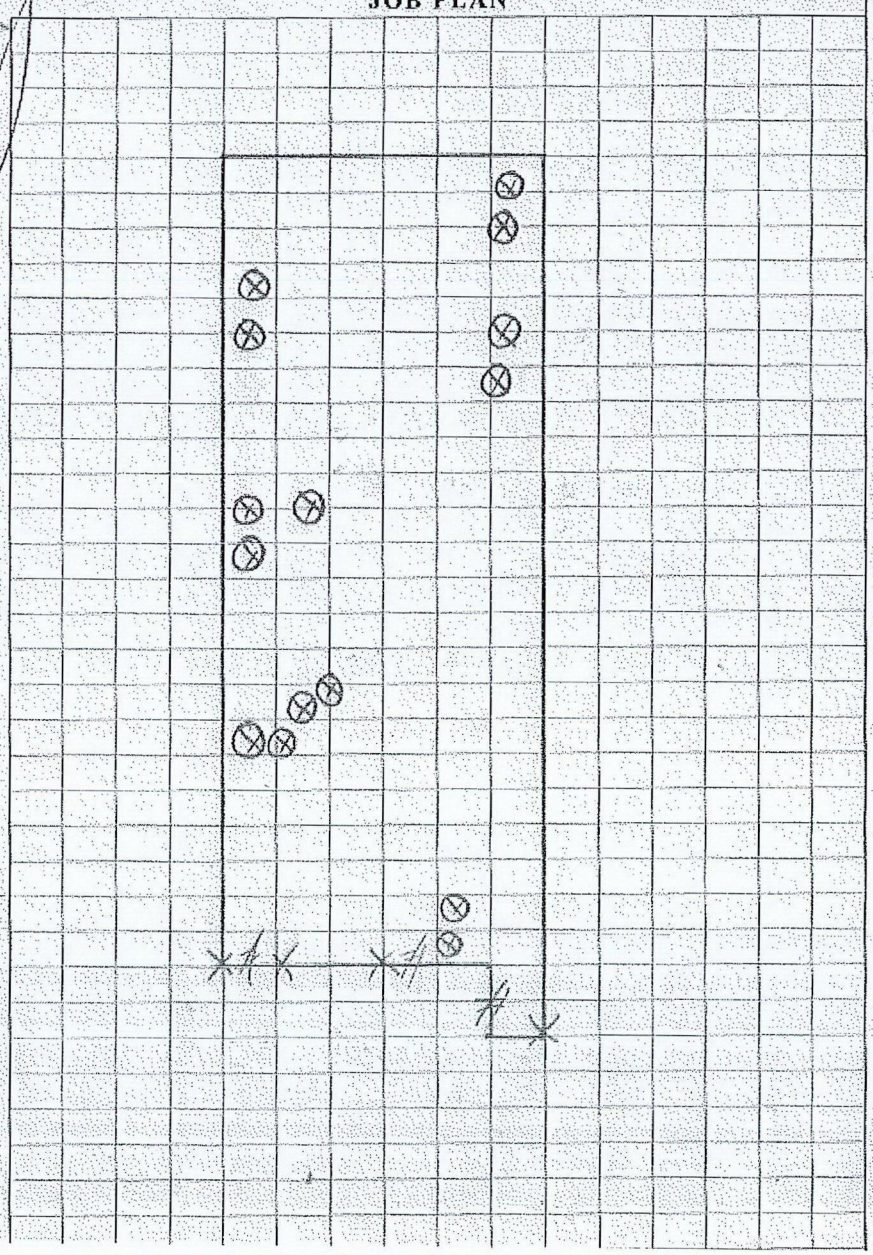
**Physical Barrier Legend**

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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# CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 09/05/2016

**Site Address:** STAGE 2 UNIT 9 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SV1263319

**CERTIFICATION** This document certifies that Flick Anticimex has performed a Special Visit in accordance with Australian Standards AS 3660.1 - 2000

See Attached Drawing/s

**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊐
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): FLICKGUARD
16LM BLOCKAID TO CONSTRUCTION JOINT
Active Constituent: DELTAMETHRIN
Volume: 0.0 ltr
Total of Emulsion: 0.0 ltr
Length: 8.0 lmt
Area: 0.0 sqm
Units: 0.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
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# INSTALLATION OF TERMITE PROTECTION

60214

Builder: STRONGBUILD Date: 5.5.16

Site Address: 9/23B GARDEN ST WARRIEWOOD Job Sheet No.: 109951

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263312

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....
Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m ..... 85
Subfloor M2 ..... Penetrations Qty ..... 15
Cure M2 ..... C/Joint L/m ..... 16
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier
Type COLLARS / FLICKGUARD TERMIBLOCK

### Legend

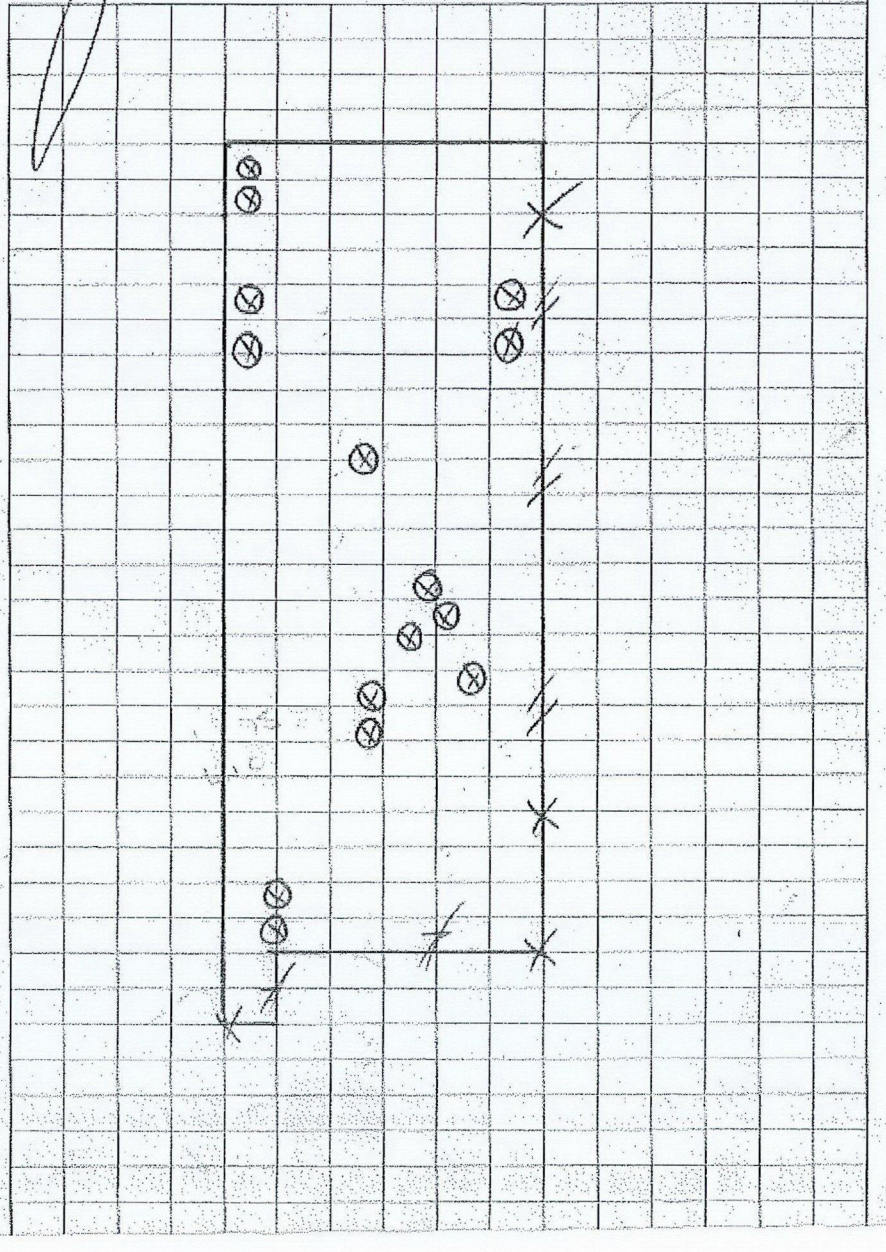
Reticulation Legend
Path trap ☒ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

Physical Barrier Legend
Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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Homebush West, NSW 2140
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# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

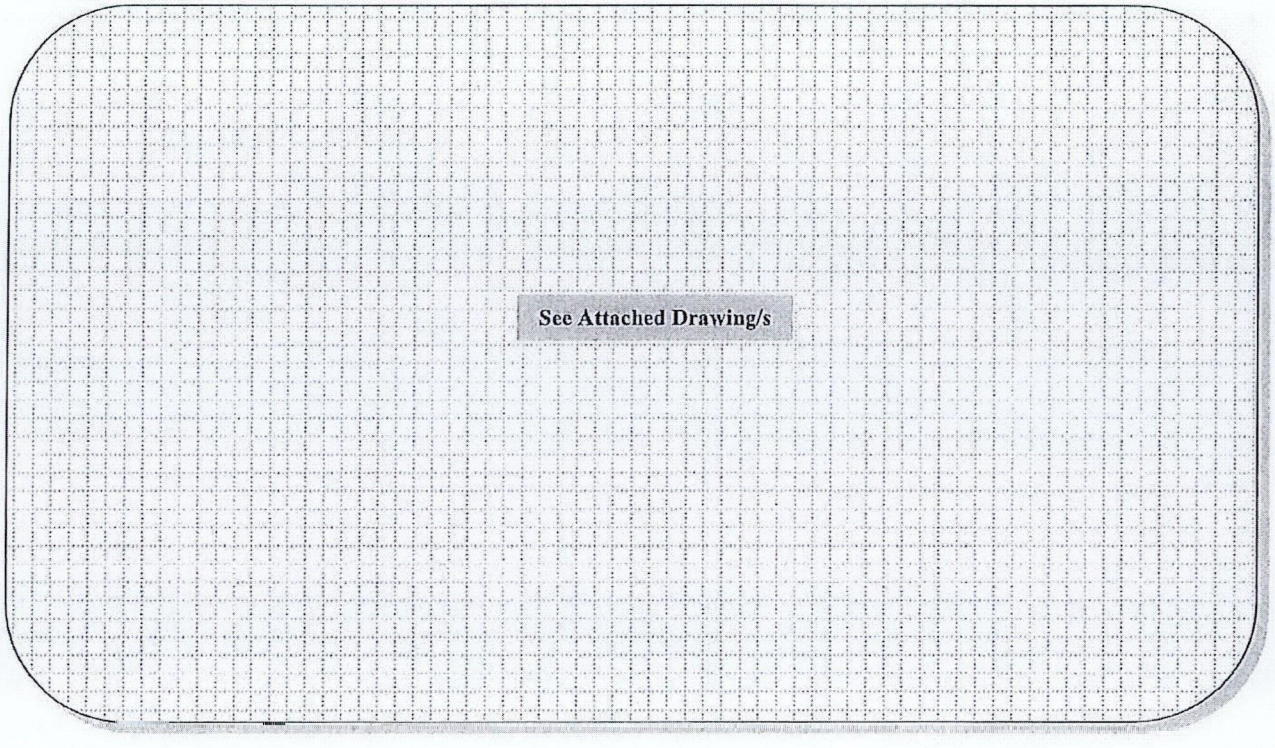
**Site Address:** STAGE 2 UNIT 11 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263315

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ———
End Cap: ⌷
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard Flick guard

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TO PROTECT AND PROTECT

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ SYDNEY | - (02) 8713 8070 | ☐ KARIONG | - (02) 4340 1270 | ☐ BALLINA | - (02) 6686 3644 |
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| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
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| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
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# INSTALLATION OF TERMITE PROTECTION

60217

Builder: STRONGBUILD Date: 5.5.16

Site Address: 11 / 23B GARDIEN ST

WARRIEWOOD Job Sheet No.: 109952

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263315

## Environmental Information

**External**

Chemical Name .....

Vol of Concentration .....

Vol of Emulsion .....

Equipment:
Hand held spray ☐
Truck mounted spray ☐

Other .....

**Cavity**

Chemical Name .....

Vol of Concentration .....

Vol of Emulsion .....

Equipment:
Hand held spray ☐
Truck mounted spray ☐

Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground

☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m ..... 8

Subfloor M2 ..... Penetrations Qty ..... 13

Cure M2 ..... C/Joint L/m .....

Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier

Type ..... COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ☒ Drilled pipe ——

Undrilled pipe - - - - End cap ——|

### Physical Barrier Legend

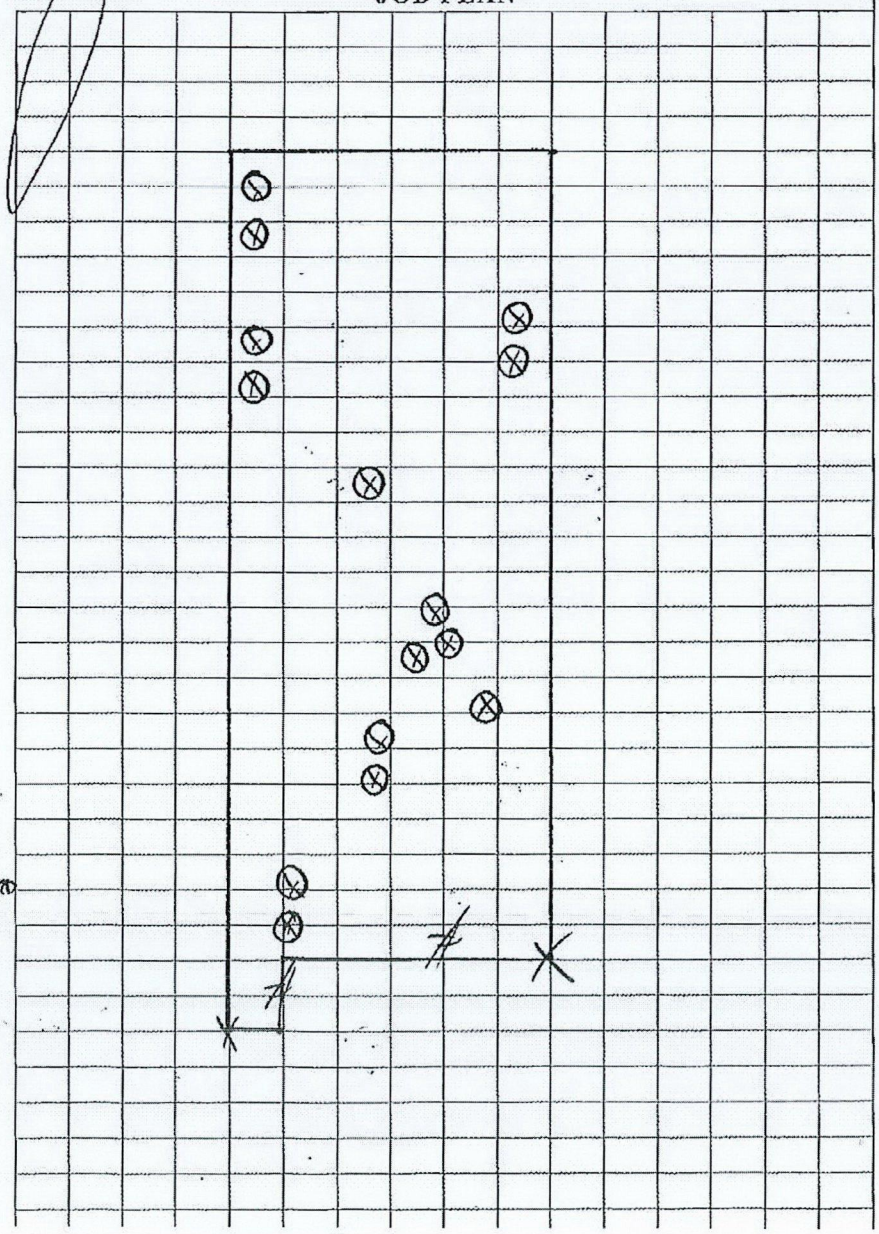
Penetration ⊗ Start / Finish ×

Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



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# SLAB PENETRATION CERTIFICATE OF INSTALLATION

**Builder:** STRONGBUILD COMMERCIAL PTY LTD
7.11 / 12 CENTURY CIRCUIT BAULKHAM HILLS 2153

**Date:** 05/05/2016

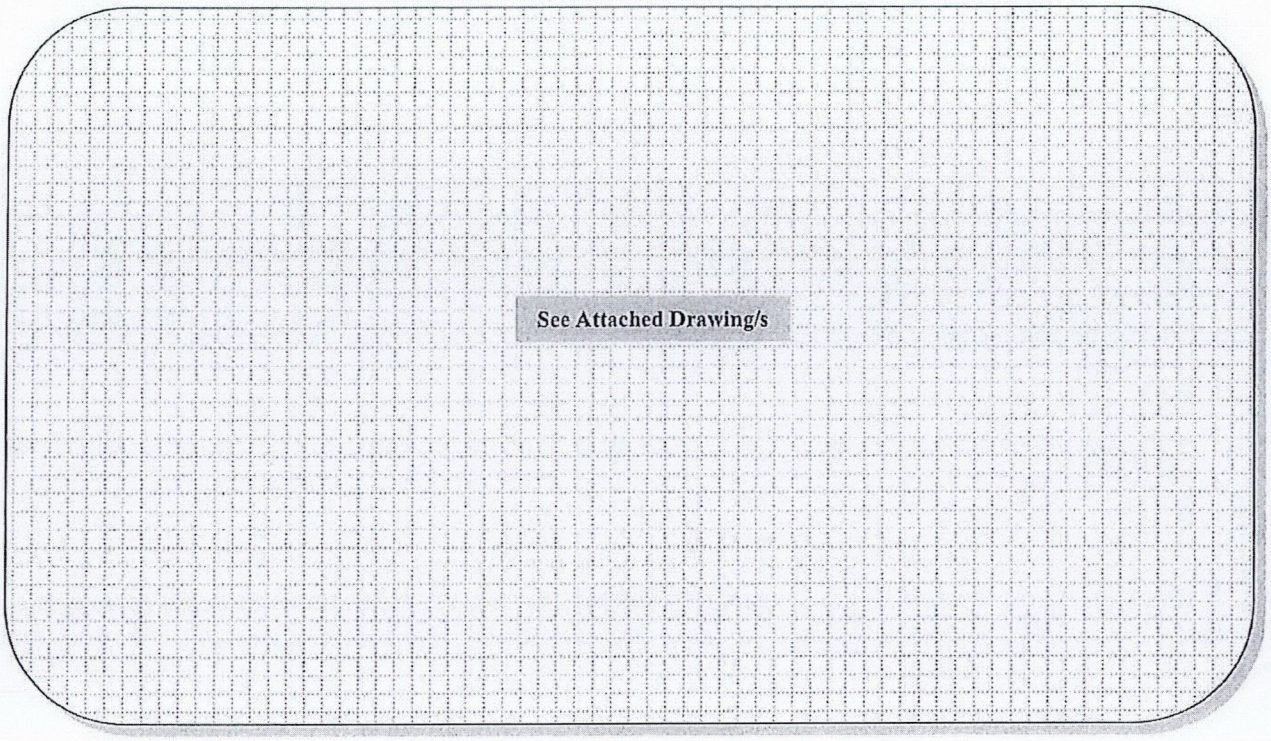
**Site Address:** STAGE 2 UNIT 10 / 47-54 HAKEA DRIVE WARRIEWOOD 2102

**Builder Order No:**

**Owner:**

**Our Ref No:** SP1263314

**CERTIFICATION** This document certifies that Flick Anticimex has installed the Penetrations in accordance with Australian Standards AS 3660.1 - 2000




**Legend**

**Reticulation System**

Injection Boxes: [X]
Drilled Pipe: ——
End Cap: ⊓
Penetrations: ⊗

**Physical Barrier**

Start / Finish: X
Area Protected: ////
Undrilled Pipe: - - - - -
Piers: ☐

AUSTRALIAN OWNED & OPERATED FOR 40 YEARS
40 YEARS

**Treatment Specifications**

Installed By: MATT MAYNARD
Product(s): TERMI-COLLAR

**Active Constituent:**
Volume: 0.0 ltr
**Total of Emulsion:**
Length:
Area:
Units: 15.0

**Additional Notes:**

Landscaping Not Done, Please contact us prior to starting landscaping additional treatment may be required.

termguard Granitgard Flick guard

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| | | | | | | | |
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| ☐ MELBOURNE | - (03) 9312 5378 | ☐ WYONG | - (02) 4351 6944 | ☐ LISMORE | - (02) 6624 1519 |
| ☐ CANBERRA | - (02) 6239 2457 | ☐ NEWCASTLE/HUNTER | - (02) 4964 4567 | ☐ MOLENDINAR | - (07) 5564 5441 |
| ☐ WOLLONGONG | - (02) 4272 8385 | ☐ PORT STEPHENS | - (02) 4919 0311 | ☐ BRISBANE | - (07) 3290 1011 |
| ☐ ULLADULLA | - (02) 4454 1005 | ☐ PORT MACQUARIE | - (02) 6581 3220 | ☐ KUNDA PARK | - (07) 5409 0600 |
| ☐ PRESTONS | - (02) 9608 6625 | ☐ COFFS HARBOUR | - (02) 6651 5533 | | |

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60215

# INSTALLATION OF TERMITE PROTECTION

Builder: STRONABUILD Date: 5.5.16

Site Address: 10 / 23B GARDEN ST WARRIEWOOD

Job Sheet No.: 109955

Installer: MATT Lic No.:

SIGNED: Ref No.: 1263314

## Environmental Information

**External**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

**Cavity**

Chemical Name .....
Vol of Concentration .....
Vol of Emulsion .....
Equipment:
Hand held spray ☐
Truck mounted spray ☐
Other .....

Wind Speed ..... Wind Direction .....

Time Start ..... Time Finish .....

### Construction Type

☐ In-fill slab ☑ Slab on ground
☐ B/J Timber floor ☐ Suspended Floor

### Area Protected

Under Slab M2 ..... Perimeter L/m 8
Subfloor M2 ..... Penetrations Qty 15
Cure M2 ..... C/Joint L/m .....
Other .....

### Method of Protection

☑ Physical Barrier ☐ Chemical Barrier

Type COLLARS + FLICKGUARD

### Legend

Reticulation Legend

Path trap ⊠ Drilled pipe ——
Undrilled pipe - - - - End cap ——|

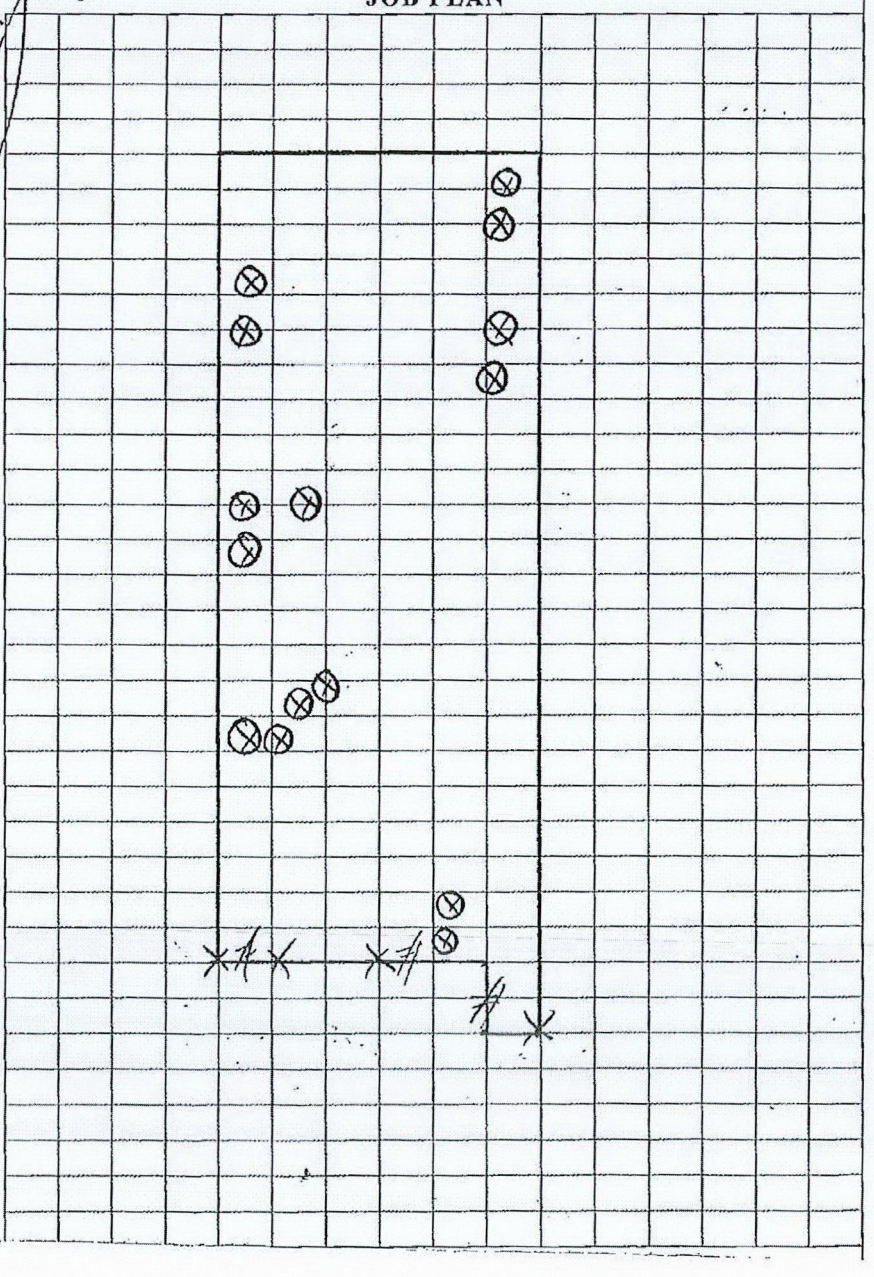
Physical Barrier Legend

Penetration ⊗ Start / Finish ×
Granitgard // Trithor / Homeguard #

### Chemical Barrier

Area Propected /

## JOB PLAN



MACFIN
BUILDING SOLUTIONS
*WATERPROOFING SPECIALISTS*

CERTIFICATE FOR WATERPROOFING

Date: 7th December 2016

Proposal: Residential

Address: Unit 9-16 47-54 Hakea Drive, Warriewood
Strongbuild Commercial Pty Ltd

MACFIN carried out the waterproofing for the internal wet areas and balconies located in the above mentioned properties. The brand used to complete the work was Tremco liquid membranes (ECO Nem, Nem and Vulkem MPU), elastic bandage was used in conjunction with Dymonic 100 sealant where necessary.

All work complies with F1.7 and F1.4 volumes 1 class 6 and part 3.8.1 of the BCA Australian Standard Code NO. AS 3740-2010 and AS 4654.2. DA Condition 117. Warranty excludes structural defects in building and settlement cracks, damages to membrane by other trades, negligence by any other parties following installations or membrane failure carried out by other tradesmen. All waterproofing carried out is an accredited product in accordance with part A2.2 of the Building Code of Australia.

All Tremco products abide by the 'Australian Building Systems Appraisal Council', 'ABSAC' Technical opinion No. 157 and is guaranteed to maintain its Water proofing integrity for at least 10 years. This certificate also guarantees that all labour works will be guaranteed for 1 year.

Yours faithfully,

Dom Finlay
Director

CROWN
ELECTRICAL SOLUTIONS
AIR CONDITIONING AUDIO VISUAL ELECTRICAL SECURITY

P.O. Box 569, Narellan NSW 2567
Office: 02 4647 4111
Fax: 02 4648 3388
Licence: 241749C
ABN: 88 153 047 646
Email: admin@crownelec.com.au
Website: crownelec.com.au

# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 14 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

755PSMA2 - Clipsal photo electric

installation and testing completed on 15.11.16

Signed:.....

Jack Best

***Site Supervisor***

***Crown Electrical Solutions***

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Email: admin@crownelec.com.au
Website: crownelec.com.au

# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 9 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

755PSMA2 - Clipsal photo electric

installation and testing completed on 15.11.16

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Website: crownelec.com.au

# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 16 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

755PSMA2 - Clipsal photo electric

installation and testing completed on 15.11.16

Signed:.....

Jack Best

***Site Supervisor***

***Crown Electrical Solutions***

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Email: admin@crownelec.com.au
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# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 15 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

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# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 13 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

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# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 12 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

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Website: crownelec.com.au

# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 11 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

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# Smoke Alarm Installation and Test Report

Building code of Australia Ref: 3.7.2 residential
Ref AS 3786-1993

Premises: Unit 10 47-54 Hakea Drive, Warriewood

Building Application No.:

Client/ Builder Name: **Strongbuild Commercial Pty Ltd**

| TYPE OF SYSTEM | LOCATION | NO |
|---|---|---|
| ☒ New | Hall | 3 |
| ☐ Modification to system | Bedroom | |
| ☐ Addition to existing · | Others | |

(Check boxes where applicable)

**ALARM DETAILS**

755PSMA2 - Clipsal photo electric

installation and testing completed on 15.11.16

Signed:.....

Jack Best

***Site Supervisor***

***Crown Electrical Solutions***

LINDTON
PROPRIETARY LIMITED
A.C.N. 061 760 549

4/8-10 Burrows Rd.
St. Peters 2044
NSW Australia
Tel: (02) **9517 9988**
Fax: (02) 9517 9800
ABN 64 061 760 549

5/12/2016

TO: Strongbuild Commercial Pty Ltd

**INSTALLATION & WARRANTY CERTIFICATE**

Project: Unit 9-16 47-54 Hakea Drive, Warriewood

Lindton Pty Ltd warrants the products for a period of 5 years from date of issue and one year from date of issue against defective workmanship.

We also confirm that the glass balustrade and handrails have been installed in accordance with AS1288 and AS4100.

Lindton Pty Ltd
Jason Liao

STRONGBUILD
Live the Dream

Site Address: 9-16 Macpherson St, Warrlewood

Date: 7th December 2016

***Certificate for Dividing Walls***

To whom it may concern,

Please accept this letter as confirmation that the dividing wall between units complies with Part 3.8.6.2, 3.8.6.3 and 3.8.6.4of the Building Code of Australia.

The wall system installed is the Knauf KIH2. This system achieves the required Weighted Sound Reduction Index (Rw) and Impact Sound Resistance.

For more information on this system, please refer to the attached Knauf specification.

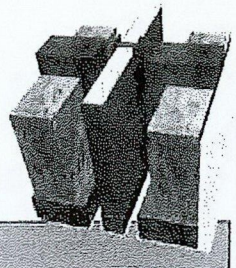
Should you have any queries regarding the above, please don't hesitate to contact the undersigned on (02) 8090 3445

Kind regards,

Mick Upston
Senior Project Manager
Strongbuild Commercial Pty Ltd

# Timber Systems

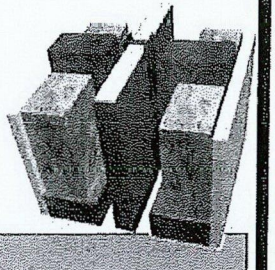
## KIH1



**WALL LINING:** [Both sides] 1 layer of 10mm **OPAL** or **SoundShield**
**FRAME:** Double timber studs at maximum 600mm centres
Minimum 20mm air gap to central fire barrier
**INSULATION:** Insulation required in both cavities
**CENTRAL FIRE BARRIER:** 1 layer of 25mm **ShaftLiner** encased in **InterHome H-Stud** at 600mm max centres
[16mm **FireShield** laminated to one side of central fire barrier at sub-floor area, floor junctions and roof cavity]

| | Stud Size (mm) | Cavity Size (mm) | Wall Width (mm) | Acoustics Rw (Rw + Ctr) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 2 x R2.0 EarthWool | 2 x R2.5 EarthWool | 2 x R1.5 Polyester | 2 x R2.0 Polyester | Acoustic Report Day Design 3094-42 |
| **FRL 60/60/60** rated from both sides Fire Report FAR 3131 | 70 | 90 | 225 | 61 (47)^ | 62 (48)^ | 57 (45)^ | 59 (46)^ | Note: Impact Sound Resistant – Discontinuous Construction |
| | 70* or 90 | 110 | 265 | 63 (49)^ | 64 **(50)** | 58 (47)^ | 60 (48)^ | |

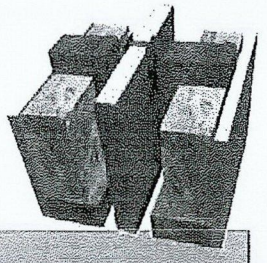
## KIH2



**WALL LINING:** [Both sides] 1 layer of 13mm **SoundShield**
**FRAME:** Double timber studs at maximum 600mm centres
Minimum 20mm air gap to central fire barrier
**INSULATION:** Insulation required in both cavities
**CENTRAL FIRE BARRIER:** 1 layer of 25mm **ShaftLiner** encased in **InterHome H-Stud** at 600mm max centres
[16mm **FireShield** laminated to one side of central fire barrier at sub-floor area, floor junctions and roof cavity]

| | Stud Size (mm) | Cavity Size (mm) | Wall Width (mm) | Acoustics Rw (Rw + Ctr) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 2 x R2.0 EarthWool | 2 x R2.5 EarthWool | 2 x R1.5 Polyester | 2 x R2.0 Polyester | Acoustic Report Day Design 3094-42 |
| **FRL 60/60/60** rated from both sides Fire Report FAR 3131 | 70 | 90 | 231 | 67 **(52)** | 68 **(53)** | 62 **(50)** | 64 **(51)** | Note: Impact Sound Resistant – Discontinuous Construction |
| | 70* or 90 | 110 | 271 | 67 **(55)** | 69 **(56)** | 63 **(52)** | 65 **(53)** | |

## KIH4



**WALL LINING:** [Both sides] 1 layer of 13mm **WaterShield**
**FRAME:** Double timber studs at maximum 600mm centres with
Minimum 20mm air gap to central fire barrier
**INSULATION:** Insulation required in both cavities
**CENTRAL FIRE BARRIER:** 1 layer of 25mm **ShaftLiner** encased in **InterHome H-Stud** at 600mm max centres
[16mm **FireShield** laminated to one side of central fire barrier at sub-floor area, floor junctions and roof cavity]

| | Stud Size (mm) | Cavity Size (mm) | Wall Width (mm) | Acoustics Rw (Rw + Ctr) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 2 x R2.0 EarthWool | 2 x R2.0 HD EarthWool | 2 x R2.5 EarthWool | 2 x R2.0 Polyester | 2 x R2.0 Insulco Polycoustic Polyester | Acoustic Report Day Design 3094-20 3094-42 |
| **FRL 60/60/60** rated from both sides Fire Report FAR 3131 | 70 | 90 | 231 | 64 (49)^ | 65 **(50)** | 65 **(50)** | 62 (48)^ | 64 **(50)** | Note: Impact Sound Resistant – Discontinuous Construction |
| | 70* or 90 | 110 | 271 | 64 **(51)** | 66 **(51)** | 66 **(51)** | 63 **(50)** | 65 **(52)** | |

* Leave minimum 40mm air gap between timber frames and central fire barrier
^ Does not meet BCA acoustic requirements in NSW, VIC, QLD, TAS, WA, SA and ACT

# COMPLIANCE CERTIFICATE

WIDELINE
WINDOWS & DOORS

is a participating member of the AWA Accreditation Program, provides a **7 year Guarantee** against faulty workmanship and materials (refer to Manufacturer's Warranty), is committed to the **Industry Code of Conduct** and has met the requirements of the annual **AWA Compliance Audit.**

AWA IS A NATA ACCREDITED FACILITY

The manufacturer certifies that the window and doors supplied to:

STRONGBUILD COMMERCIAL PTY LTD
CNR OF MACPHERSON & GARDEN ST (THE FERN & THE WATTLE)- WARRIEWOOD

UNIT 16, 23B MACPHERSON ST WARRIEWOOD

Delivered on: 23/04/2015

have been manufactured to comply with the Australian Windows Standard **AS2047 - 2014** and Glass Standard **AS1288 - 2006** including human impact requirements as specified in the order

Chris Logan: ..... Date: 08/11/2016

The Builder/Installer certifies that the windows and doors supplied have been installed correctly and the human impact glass located in the correct openings

Builder/Installer: .....Date: .....

Visit the website www.awa.org.au for accreditation details

CERTIFIED

TAKE A CLOSER LOOK
WIDELINE PTY LTD | ABN 11 00 945 068

NATA

AWA
AUSTRALIAN WINDOW ASSOCIATION

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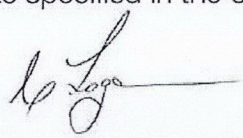
Chris Logan:  . Date: 08/11/2016

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**For more information call 1300 943 354** **www.wideline.com.au**

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CNR OF MACPHERSON & GARDEN ST (THE FERN & THE WATTLE)- WARRIEWOOD

UNIT 15, 23B MACPHERSON ST WARRIEWOOD

Delivered on: 23/04/2015

have been manufactured to comply with the Australian Windows Standard **AS2047 - 2014** and Glass Standard **AS1288 - 2006** including human impact requirements as specified in the order

Chris Logan: _____ . Date: 08/11/2016

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UNIT 14, 23B MACPHERSON ST WARRIEWOOD

Delivered on: 23/04/2015

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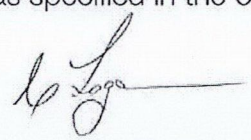
Chris Logan:  . Date: 08/11/2016

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NATA

AWA
AUSTRALIAN WINDOW ASSOCIATION

**For more information call 1300 943 354** **www.wideline.com.au**

| WARRIEWOOD BANKSIA: OC REQUIREMENTS MATRIX | | | | | | | | | | | | 3/12/2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SUB ITEM | REQUIREMENTS | ACTION BY | UNITS | | | | | | | | |
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 1 | **OC Application Form** | On completion of the works submit an application form signed by the owner/s | Auspacific | | | | | | | | | |
| 2 | **Remediation of Land** | In accordance with OA Condition No. D.18 - confirmation in writing from a suitable qualified independent consultant that sampling, testing and remediation of the site as identified in the contamination assessment has been carried out as per EPA guidelines of SEPP 55 - Remediation of Land prior to the issue of final occupation certificate. | Auspacific | | | | | | | | | |
| 3 | **BASIX Statement** | Certificate by the builder that all BASIX commitments as listed on the approved BASIX Certificate No: 361834M_02 (or any subsequent approved modified certificate) have been installed. Such certification shall note the following specific items:<br>1. The type, R Value and location(s) of insulation materials and compliance with Australian Standard AS/NZS 4859 Part 1 - 2002 "Thermal Insulation of Dwellings - Bulk Insulation - Installation Requirements"<br>2. The rain water tank/s and water supply pipes, fixtures and fittings have been installed by a licensed plumber in accordance with AS3500 and the approved plans and specifications<br>3. The glazing requirements for windows as listed in the BASIX Certificate have been complied with | SDC | Y | Y | Y | Y | Y | Y | Y | Y | |
| 4 | **Landscape Practical Completion Report** | Certification provided by a qualified Landscape Architect indication compliance with the approved landscape plan and DA condition E.16 | Auspacific | | | | | | | | | |
| 5 | **Installation Certificates** | | | | | | | | | | | |
| 5.1 | Windows | Certified by the Window Manufacturer/Supplier as complying with AS1288 - 2006: Glass in buildings - Selection and installation, and AS2047-1999: Window in buildings - Selection and installation | Wideline | Y | Y | Y | Y | Y | Y | Y | Y | |
| 5.2 | Smoke alarms | Certified by a licensed electrician, after installation, as complying with AS3786-1993, smoke alarms | Crown | Y | Y | Y | Y | Y | Y | Y | Y | |
| 5.3 | Balustrades | Certification regarding the installation of balustrades in accordance with BCA | Lindon | Y | Y | Y | Y | Y | Y | Y | Y | |
| 5.4 | Dividing Walls ( Sound Insulation) | Statement from Builder confirming that the dividing wall between the two units complies with Part 3.8.6.2 of the BCA. Information to be provided to include confirmation that the wall construction achieves the required Weighted Sound Reduction Index (Rw) and Impact Sound Resistance and confirmation the wall has been installed in accordance with Part 3.8.6.3 & Part 3.8.6.4 of the BCA | SDC | Y | Y | Y | Y | Y | Y | Y | Y | |
| 5.5 | Termite Control | Certified by Installer detailing the system installed, location and compliance with AS3660-2000 "Termite Management" | Enviropest | Y | Y | Y | Y | Y | Y | Y | Y | |
| 5.6 | Wet area flashing | Certified by the Installer, after its application, as complying with AS3740-2010: Waterproofing of Wet Areas in Residential Buildings | Macfin | Y | Y | Y | Y | Y | Y | Y | Y | |

Sydney WATER

**Case No. 155975**

# SUBDIVIDER/DEVELOPER COMPLIANCE CERTIFICATE

(A certificate under Division 9 Section 73 of the Sydney Water Act, 1994)

| DESCRIPTION OF SUBDIVISION/DEVELOPMENT | | |
|---|---|---|
| Council | **Pittwater Council** | |
| Street | **47-54 Hakea Dr, Warriewood** | |
| Lot No. **8** DP **270822** | | |
| Subdivision into **8** | Lots numbered **47 to 54** | Development **Stage 3: Community Title Subdivision (8 lots)** **Construction of an Infill Affordable Housing Development comprising of 46 Residential Terraces/townhouses (23 maintained as affordable Rental Housing for a period of 10 years), Focal Neighbourhood Centre (510m of Retail Floor area), Provision of Roads, parking and other Infrastructure, Restoration and Dedication of Creekline corridor and Subdivision of the Land as 23B Macpherson Street Warriewood** |
| NAME OF APPLICANT | **WARRIWOOD PROPERTIES PTY LTD** | |
| APPLICANT'S ADDRESS | **C/o MGP BUILDING & INFRASTRUCTURE SERVICE PL Suite 9/ 6 Tilley Lane, FRENCHS FOREST 2086** | |

*Sydney Water Corporation certifies that the above named applicant has complied with the requirements, relating to the plan of Subdivision/Development described above, of Division 9 of the Sydney Water Act, 1994.*

THE FOLLOWING ITEMS **2** AND **5** APPLY TO LOT/S **47 to 54** IN THE COMMUNITY SUBDIVISION:

1. ~~Water facilities are to be provided as a result of the subdivider/developer's compliance with Sydney Water's requirements.~~
2. **Water facilities are available.**
3. ~~Water facilities cannot be provided within a reasonable time from the date of this certificate.~~
4. ~~Sewerage facilities are to be provided as a result of the subdivider/developer's compliance with Sydney Water's requirements.~~
5. **Sewerage facilities are available.**
6. ~~Sewerage facilities are under the control of the local council.~~
7. ~~Sewerage facilities cannot be provided within a reasonable time from the date of this certificate.~~
8. ~~Sydney Water's requirements for future subdivision of this dual occupancy development have NOT been met. On subdivision an additional certificate will be required.~~

Applicant Reference No. **2016-0451**

Council Reference No. **N0085/11**

Approval date: **7 July 2011**

Name **Veronica Valderas**

(Approving Officer for and on behalf of Sydney Water)

Signature .....

Name **Peter Jansen**

(Approving Officer for and on behalf of Sydney Water)

Signature .....

Urban Growth Business **Head Office**

Dated: **25 August 2016**

THIS CERTIFICATE IS ONLY VALID WHEN SIGNED BY TWO AUTHORISED SYDNEY WATER OFFICERS
A signed copy is held by Sydney Water

***The original of this certificate must be presented to the appropriate consent authority, usually Council, with which the plan of subdivision/development was lodged so that you can satisfy the relevant condition of consent.***

CRAIG& RHODES

8 September, 2015
Our Ref: 1736

Mr. M. Shaw,
Civil Certifications
54 Werona Avenue
GORDON NSW 2072

Dear Sir,

**Re: WAE Certification – Warriewood Development Project, cnr Garden St & Macpherson St.**

Craig & Rhodes Pty Ltd, being civil engineers in accordance with Part A1.1 of the Building Code of Australia (B.C.A), hereby confirm that this office is appropriately qualified and experienced to provide certification for this project.

I confirm that I have inspected the base slab, walls and roof slab of this OSD tank at critical stages during construction. I confirm and certify that it has been constructed in accordance with our drawings and instructions and is capable of safely supporting all loads including traffic loads expected to be imposed upon it.

Craig & Rhodes certify the work as adequate and complete as constructed.

Yours faithfully,
CRAIG & RHODES PTY LTD

R. C. Springett B.E., M.I.E.(Aust), CPEng, N.P.E.R. 3#72223

CRAIG & RHODES PTY LTD
P 02 9869 1855 F 02 9869 2341 E reception@crhodes.com.au W craigandrhodes.com.au ABN 77 050 209 991
A Suite 400, Level 4, 16-18 Cambridge St, Epping NSW 2121 P PO BOX 233, Epping NSW 1710 DX 4408 Epping

SURVEYING - PLANNING - CIVIL & STRUCTURAL ENGINEERING - PROJECT MANAGEMENT

90th ANNIVERSARY 1923 - 2013

total earth care

RE: Certification relating to S96 NO N0085/11/896/3 Condition of consent E9

Directors
Warriewood Properties Pty Ltd
4 Ponderosa Parade
Warriewood NSW 2102

To Whom It may concern,

Please consider this to be Certification that the there were no Noxious or Environmental weeds present within the estate or the Fern Creek Riparian corridor during my inspection of the site on the 23rd of March 2015.
This is a requirement of S96 NO N0085/11/896/3 Condition of consent E9
I confirm that I am a Qualified Bushland Management consultant and correspondingly qualified to provide this certification.

Regards

Andrew McGahey | Managing Director

Total Earth Care Pty. Ltd. | www.totalearthcare.com.au
Unit 5, 1 Vuko Place Warriewood NSW 2102
**T**: (02) 9913 1432 | **M**: 0413 627 585 | **F**: (02) 9913 1434 | **E**: amcgahey@totalearthcare.com.au

Please consider the environment before printing this email.

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**Civil Certification Pty Ltd**
Accredited Certifiers
Civil Engineering

53 Werona Avenue
Gordon, NSW, 2072
0412 264 237

ACN 607 721 595



Warriewood Properties Pty Ltd
4 Ponderosa Parade
Warriewood NSW 2102

Monday, 30 November 2015

**Attention: Mr Paul Allinson**

Dear Paul,

**THE GROVE, 23B MACPHERSON STREET, WARRIEWOOD**
**DA N0085/11/S96/5 (*CONDITIONS E11, E12)***
**OCCUPATION CERTIFICATE**

In accordance with Conditions E11 and E12 of consent N0085/11S96/5 we confirm that all water management measures have now been satisfactorily completed in accordance with the approved Craig & Rhodes Drawings, Civil Certification Water Management Report and Pittwater Council's "*Warriewood Valley Water Management Specification*" (*February 2001*).

This advice shall not be construed as relieving any other party(s) of its responsibilities.

We trust this information is satisfactory. Should you have any questions, please do not hesitate to contact me on 0412 264 237.

Yours faithfully

**CIVIL CERTIFICATION PTY LTD**

**Michael Shaw**
BE(Civil) MIEAust CPEng NPER(Civil)
Accredited Certifier (BPB 0816)

**Director**

0412 264 237
02 8901 3904
mshaw@civilcert.com

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**15th June 2015**

Tel.: 0412 264 237
***Attention: Mr Michael Shaw***

**THE GROVE - WARRIEWOOD – CERTIFICATION & WARRANTY**

**Re: Certification & Warranty**

Job: The Grove - Warriewood
Address: Corner of Macpherson and Garden Streets, Warriewood

Dear Sir,

Simmons Civil Contracting confirms that the works at the above site were constructed in accordance with project documents (drawings and specifications), Australian standards specified in the design documentation and the Building Code of Australia.

Please note the following:-

- The Civil and road works have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per AS2890.6.
- The Asphalting has been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA), AS3600 and any other relevant Australian Standards.
- The Kerbs have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and the relevant Australian Standards.
- The OSD Tank has been installed in accordance with the design drawings and specification provided, Building Code of Australia and relevant Australian Standards.
- The Stormwater system has been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per AS3500.
- The Pram ramps have been installed in accordance with the Pittwater council design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards
- The Retaining Wall has been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The Signage have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The NBN Communication conduits and pits have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The Gas Lines have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The Electrical Works have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The Sewer Line, pit, connection and testing works have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- The Water main works have been installed in accordance with the design drawings and specification provided, Building Code of Australia (BCA) and as per the relevant Australian Standards.
- Simmons Civil Contracting Pty Ltd, Warrants that all materials and workmanship will be free from defects and specified quality, and will function properly for a period of 12 months (s) from the date of this warranty
- **ALERT:** Within fourteen (14) days of first knowledge of any defect, crack, undulation or failure to function properly, Simmons Civil Contracting Pty Ltd is to be notified in writing, by owner or his/her agents. The principal contractor is also to be informed. Simmons Civil Contracting shall be given first opportunity to promptly repair, replace and/or correct any item found to be

defective, or that fails to function as intended, at no cost to owner, within, a reasonable period of time.

- This Warranty does not apply to any construction work that has been subject to accident, misuse and abuse, nor to work that has been modified, altered, defaced and/or had repairs made or attempted to be made by others.
- Under no circumstances shall Simmons Civil Contracting Pty Ltd be liable, by virtue of this warranty or otherwise, for damage to property whatsoever, or for any special, indirect, secondary or consequential damages, of any nature caused by the construction defect.

If you have any queries please do not hesitate to contact me.

Regards,

**Nicholas Simmons – Director**
Simmons Civil Contracting Pty Ltd

**Paul Allinson**

**Subject:** FW: Creek and Road reserve works Complete - 23B Macpherson St, Warriewood

---------- Forwarded message ----------
From: **Les Munn** <Les_Munn@pittwater.nsw.gov.au>
Date: Wed, Aug 26, 2015 at 1:01 PM
Subject: RE: Creek and Road reserve works Complete - 23B Macpherson St, Warriewood
To: Paul Allinson <paulall123@gmail.com>
Cc: Chris Hunt <Chris_Hunt@pittwater.nsw.gov.au>

Hi Paul,

Following our site inspection of the Fern Creek reconstruction adjacent to 23B McPherson St. Warriewood , I am satisfied that the work has been

completed satisfactorily to meet the requirements of the Section 94 Plan. I did note that there is one tree that has died next to the pedestrian cycleway

near the Garden St. entry. This tree will have to be replaced. Apart from this , I am happy with the completed works.

**Les Munn**

**Manager, Reserves and Recreation**

**P: 9970 1354**

**M: 0419 013 950**

PITTWATER COUNCIL

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www.pittwater.nsw.gov.au | Facebook | Twitter | LinkedIn | Instagram

Pittwater Council

REPRINTED

# Tax Invoice

## Official Receipt

ABN: 61340837871

1/09/2015 Receipt No: 383693

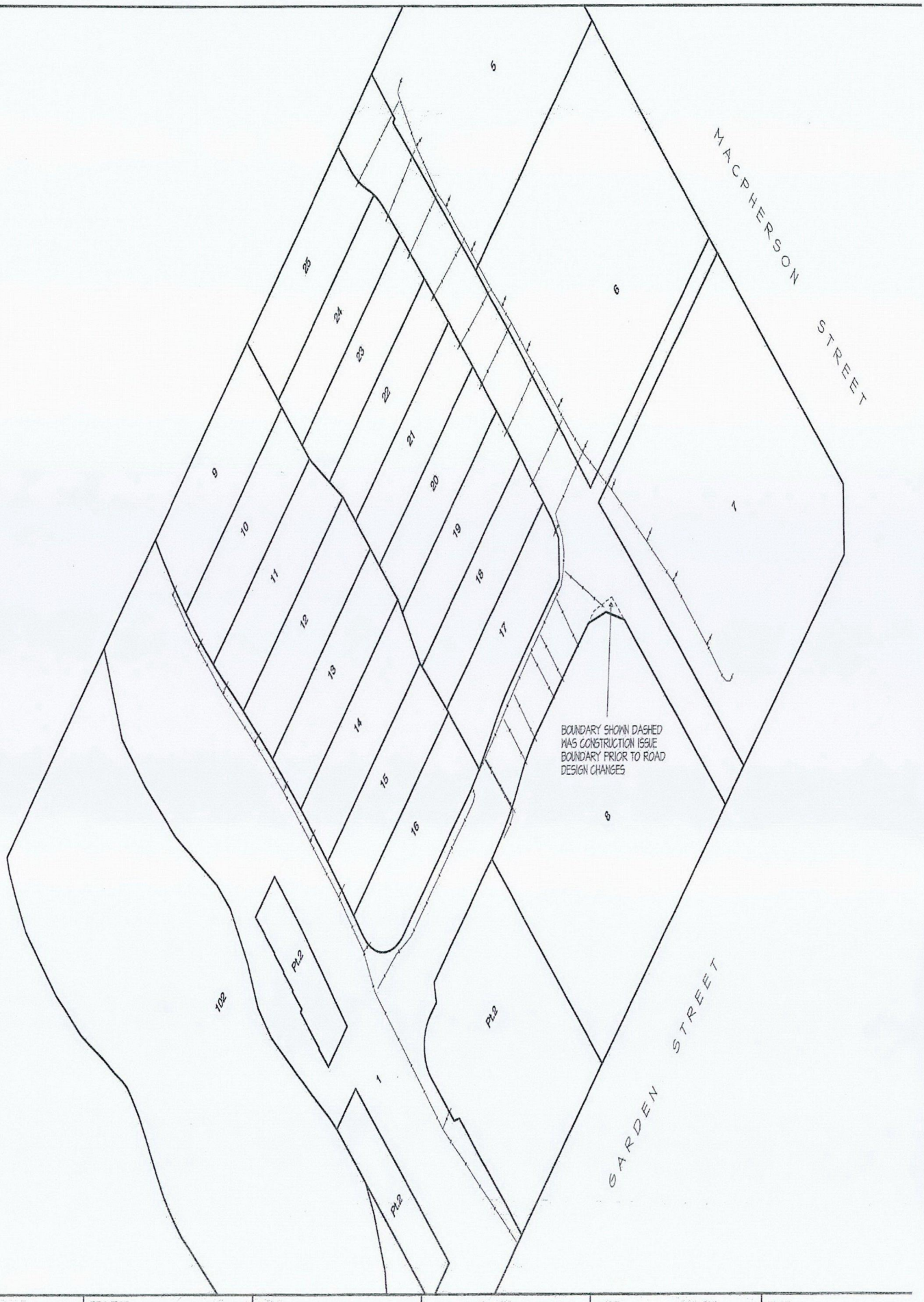
To: ~~Simmons Civil Contracting~~
~~PO Box 733~~
~~ST IVES NSW 2075~~

| Applic | Reference | Amount |
|---|---|---|
| GL Receipt | | |
| QSCC-Bond Concrete<br>1 x 230 macPhoenix Street | | $6,000.00 |
| Transaction Total: | | $6,000.00 |
| Includes GST of: | | $0.00 |

Amounts Tendered

| | |
|---|---|
| Cash | $0.00 |
| Cheque | $6,000.00 |
| Db/Cr Card | $0.00 |
| Money Order | $0.00 |
| Agency | $0.00 |
| Total | $6,000.00 |
| Rounding | $0.00 |
| Change | $0.00 |
| Nett | $6,000.00 |

Printed 2/09/2015 10:06:59AM




| | | | | | |
|---|---|---|---|---|---|
| DRAWING STATUS<br>REVISION_2 GAS POINTS ADDED<br>LEAD IN'S ADDED | PROJECT:<br>**'THE GROVE'**<br>**GARDEN STREET**<br>**WARRIEWOOD** | CLIENT:<br>**SIMMONS**<br>CIVIL CONTRACTING PTY LTD<br>101 CARNARVON STREET<br>SILVERWATER NSW 2128<br>PH (02) 9748 0555 | S.P. SITE SETOUT PTY LTD<br>CONSTRUCTION SURVEYING<br>UNIT 36/9 HOYLE AVENUE<br>CASTLE HILL 2154<br>Mobile: 0411 315 371<br>Telephone: (02) 9659 3316<br>Facsimile: (02) 9659 3316<br>Email: stephen@spsite.com.au | SCALE 1:250 (A1)<br>DATE 22/09/2014 DATUM AHD<br>CADD FILE REF D30/SIMMONS/WARRIEWOOD<br>DWG No: DZ9405_009_R2.PRO | PLAN:<br>SHOWING AS BUILT GAS SERVICE LOCATIONS |

# KYORA LANDSCAPES Pty Limited

Professional Landscape Design and Construction

www.kyora.com.au


10th August 2015

To whom it may concern,

**RE: Maintenance at Corner Garden & Macpherson St, Warriewood**

This is to confirm that Kyora Landscapes have entered into contracts with Warriewood Village Pty Ltd to provide a complete landscape service for The Grove project at 23b Macpherson Street (Cnr Macpherson and Garden Streets) Warriewood NSW 2102 for the following:

- Creek line works in accordance with the civil design of Craig and Rhodes as well as landscaping works in accordance with the Vegetation Management Plan by Umbaco Landscape Architects.
- Community Title (common property) landscape works in accordance with the CC landscape drawings by Umbaco Landscape Architects.
- Council owned land (External to the site) landscape works in accordance with the CC landscape plans by Umbaco Landscape Architects.
- Landscaping of the townhouses in accordance with the CC landscape plans by Umbaco Landscape Architects.

In addition to undertaking the landscape works, in accordance with the DA conditions, Kyora Landscapes have entered into 12 month landscape maintenance contracts with Warriewood Village Pty Ltd to ensure the landscaping grows and is maintained to a high standard.

If any further details are required, please contact me.

Yours sincerely

**DAVE BANASIAK**
**0420 373 537**


ABN: 93 130 448 663 Lic No: 208836C
P.O. Box 343 NARRABEEN NSW 2101
Ph: 9999 4441 Fax: 9999 4074 Mobile: 0418 979 059



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the best in the business

**Civil Certification Pty Ltd**
Accredited Certifiers
Civil Engineering

53 Werona Avenue
Gordon, NSW, 2072
0412 264 237

ACN 607 721 595



Warriewood Properties Pty Ltd
4 Ponderosa Parade
Warriewood NSW 2102

Thursday, 10 September 2015

**Attention: Mr Paul Allinson**

Dear Paul,

**THE GROVE, 23B MACPHERSON STREET, WARRIEWOOD**
**DA N0085/11/S96/5 (*CONDITIONS E1, E2, E14 (iii), F5, F8 (iii), F8 (vi)*)**

**CIVIL ENGINEERING (*ROADS & STORMWATER DRAINAGE*)**
**PART4A COMPLIANCE CERTIFICATE #COMPC 933**
***(EP&A ACT 1979, SECTIONS 109C(1)(A))***

This Part 4A compliance certificate relates to the following civil engineering components at the above site:

- Public road reconstruction (*half width*) for both the Garden Street and Macpherson Street frontages, including associated footpath and drainage;
- Internal roads and drainage;
- OSD tank below Road 2;
- Internal WSUD systems (*ie GPT, creekside bio-retention basins*); and
- Creekline corridor reconstruction (*half width*).

Our certification is provided with reference to the following documentation:

- The LDC stamped Drawings by Craig & Rhodes *(24/6/14 – Rev E)* and any subsequent amendments;
- LDC CC 13115 dated 11/7/14;
- Craig and Rhodes Creek Reconstruction Drawings dated 8/11/13;
- Civil Certification Field Instructions (*various*);
- Dirt Doctors Pty Ltd Geotechnical inspection/testing reports (*various*);

- Civil Certification inspection reports (*various*);
- Consent Conditions N0085/11/S96/5 (*in particular Conditions E1, E2,E14(iii), F5, F8(iii) and F8(vi)* );
- Craig and Rhodes OSD Tank structural certification letter dated 8/9/15;
- Subdivision WAE Drawings by Alan Bardsley dated 20/6/15;
- Creekline WAE Drawings by CMS Surveyors dated 29/8/15;
- Simmons QA Documentation and Certification dated 15 June 2015;
- Simmons Defect Rectification letter dated 4 August 2015; and
- Simmons CCTV Pipe Condition Video (*various*) and associated reports.

I, Michael Shaw, being a professional engineer and accredited subdivision certifier, state that:

- I have carried out inspections of parts of the works during construction,
- I have carried out spot reviews of the contractor's Quality Assurance construction records, and
- as far as can be determined from this involvement, the work defined by the approved Craig & Rhodes drawings, specifications, Pittwater Council standards/consent conditions and instructions issued up to the time of each inspection conforms generally with the intent of those drawings, specifications, standards/conditions and instructions.

Please note that this certification excludes those outstanding civil items as listed in **Appendix A.**

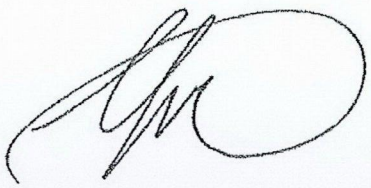
Minor design amendments incorporated during construction are listed at **Appendix B.**

This advice shall not be construed as relieving any other party(s) of its responsibilities.

We trust this information is satisfactory. Should you have any questions, please do not hesitate to contact me on 0412 264 237.

Yours faithfully

**CIVIL CERTIFICATION PTY LTD**



**Michael Shaw**
BE(Civil) MIEAust CPEng NPER(Civil)
Accredited Certifier (BPB 0816)

**Director**

0412 264 237
02 8901 3904
mshaw@civilcert.com

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# Appendix A – Excluded Works

- Landscaping;
- Utility Services;
- Internal footpaths;
- Lot based works (*ie dwellings, driveways etc*);
- Lot based raingardens (*to be completed after dwelling construction*); and
- Various minor public road defects as listed in Civil Certification email dated 15/7/15 (*understood to be bonded by Council).*

# Appendix B – Design Amendments

- Pre cast concrete headwall used at Pit 7/4;
- Deviation of the Road 3 alignment and associated drainage (CH4.5 to 32) to suit amended lot layout on Superlot 7 (*ie east end of Road 3 near electrical substation*);
- General lowering of creekline cycleway by approx. 100-200mm to suit site conditions and at Councils direction;
- Removable bollards at GPT not installed;
- Minor change to turning head at west end of Road 3
- Line 8 and Line 9 generally constructed deeper than design but still achieves fall at design grade to receiving pit.

Pittwater Council

# Tax Invoice

## Official Receipt

ABN: 61340837871

18/09/2015 Receipt No: 385008

To: WARRIEWOOD PROPERTIES PTY LIMITED
LEVEL 1, 9 PONDEROSA PARADE
WARRIEWOOD NSW 2102

| Applic | Reference | Amount |
|---|---|---|
| DA Receipt | | |
| QDCC-Bond Courtesy | | $14,000.00 |
| 1 X BOND DA N0085/11/596 - 23B MACPHERSON ST | | |

| | |
|---|---|
| Transaction Total: | $14,000.00 |
| Includes GST of: | $0.00 |

### Amounts Tendered

| | |
|---|---|
| Cash | $0.00 |
| Cheque | $14,000.00 |
| Db/Cr Card | $0.00 |
| Money Order | $0.00 |
| Agency | $0.00 |
| Total | $14,000.00 |
| Rounding | $0.00 |
| Change | $0.00 |
| Nett | $14,000.00 |

# The Grove

# Macpherson and Garden Street Warriewood

# Flood Emergency Response Plan

## Introduction

The Grove development consists of a number of two story townhouses and a Focal Neighbourhood Centre (FNC). This site is bounded by three street frontages, namely Macpherson Street to the north east, Garden Street to the south east and Lomandra Way to the north west. There is a southerly boundary along the Council owned pedestrian and cycle way which runs parallel to Fern Creek.

On the northern side of Garden Street, Narrabeen Creek runs behind the existing townhouses, Flower Power nursery and the Anglican Retirement Village. During peak extreme flood events, up to and including the Probable Maximum Flood (PMF), it is anticipated that the both Fern Creek and Narrabeen Creek could over flow. The average flood depth and water velocity for these events is likely to be hazardous and accordingly, areas along the creek lines are likely to be unsuitable as an evacuation route.

This Flood Emergency Response Plan has been developed for residents and visitors to The Grove development to provide an outline of the potential water flows and to show an evacuation path to higher ground.

## Site Levels

The levels of all development at The Grove has been determined by Council based on scientific and engineering water management studies to determine the maximum flood levels that could occur (Probable Maximum Flood), with additional heights required for freeboard and for climate change. This puts the floor levels of all dwellings approximately 700mm above the Probable Maximum Flood level. None the less, in a major flood event whereby the adjacent Fern Creek, and Narrabeen Creek to the north overflow, it is important to understand the evacuation route from your dwelling to reach higher ground to the west, if considered necessary.

## Water Flows

In a major flood event whereby Fern Creek and Narrabeen Creek overflow, water will flow in a south easterly direction towards Narrabeen Lake. As The Grove is directly adjacent to Fern Creek, there is the potential for water to rise and possibly overflow along the internal road and car parking along the road facing onto Fern Creek and out through the main entry onto Garden Street. With the levels of all dwellings being

well above the Probable Maximum Flood, it is not anticipated that any dwellings will be affected.

**Alternatives to Evacuation**

As the ground floor level of all dwellings are well above the Probable Maximum Flood levels it is unlikely any flooding will occur to the dwellings and therefore evacuation would not be necessary. Staying calm, remaining indoors and possibly going upstairs is a realistic approach. This is the best option if the public roads of Macpherson Street and Garden Street are flood affected.

**Egress Path in Case of Evacuation**

From the potential rain scenarios, engineering analysis has acknowledged that a "flash flood event" occurring due to rising flood waters in Fern and Narrabeen Creeks is highly unlikely. Therefore, it is anticipated that water will rise slowly and there will be time to evaluate the situation during initial rain periods and by observation of the rising creek water levels. Thus sufficient time will be available if evacuation is decided upon by residents and visitors as being the most appropriate course of action for them.

If the opinion of the resident is that they would feel more comfortable by moving to higher ground, then it is advised to make such a decision earlier rather than later. It has been determined that the higher ground to the west towards Forest Road and adjacent to Mater Maria Catholic College is the closest high ground with the potential for minimal impact from flooding from either Fern Creek or Narrabeen Creek.

Both pedestrian and vehicle access to Forest Road can be by road by exiting from The Grove, turning left out onto Garden Street, turning left onto Macpherson Street and then going directly through the round-a-bout into Forest Street and up the hill to higher ground. While not guaranteed, it is envisaged that weather protection will be available at the Mater Maria Catholic College.

Pedestrian egress can also be made directly from the dwellings facing onto Garden Street and Macpherson Street and then moving towards higher ground on Forest Road.

A sketch is attached to this Flood Emergency Response Plan showing the evacuation routes from The Grove estate to higher ground to the west on Forest Road.

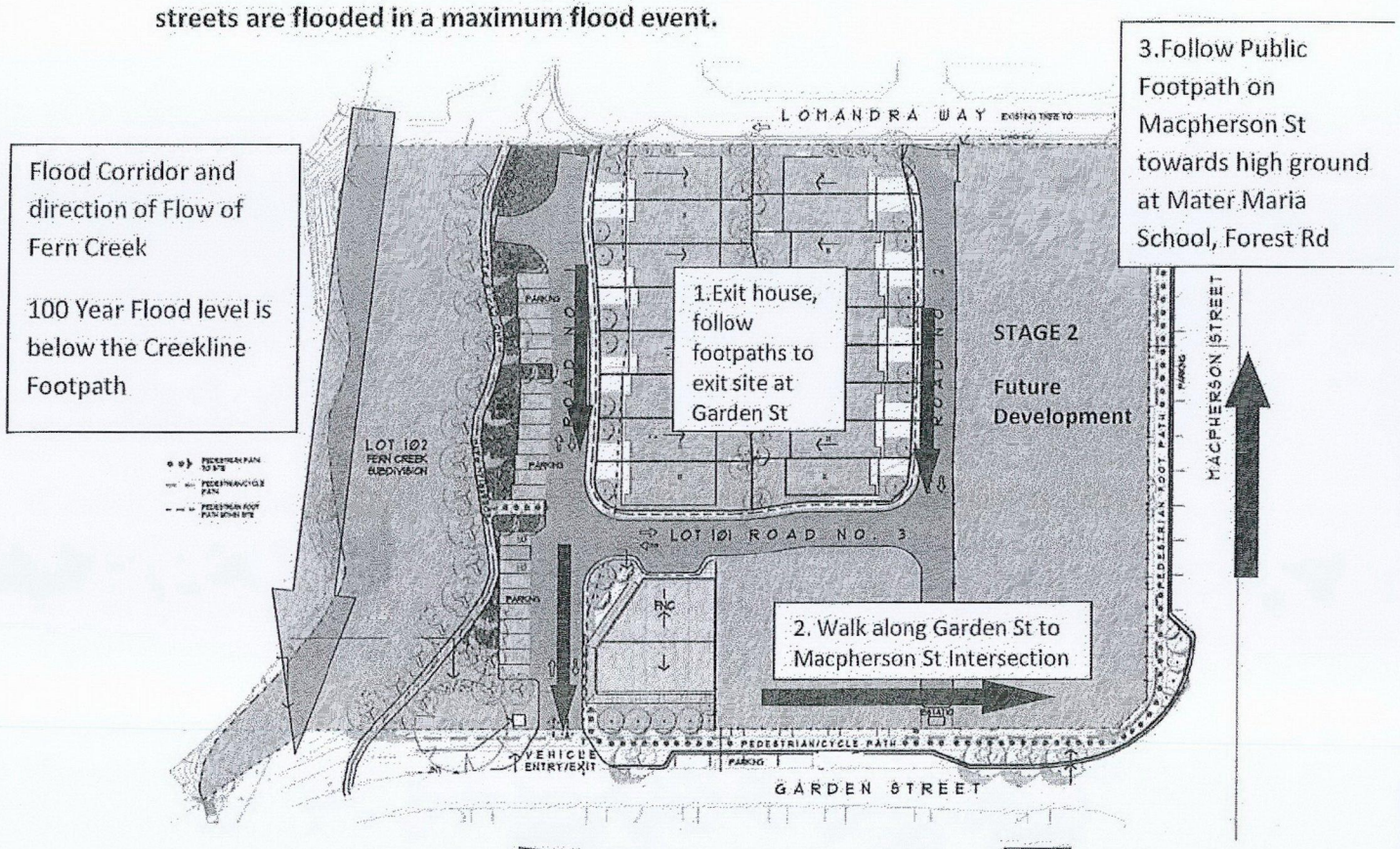
**Appendix A:** Sketch showing evacuation routes from The Grove to higher ground on Forest Road.

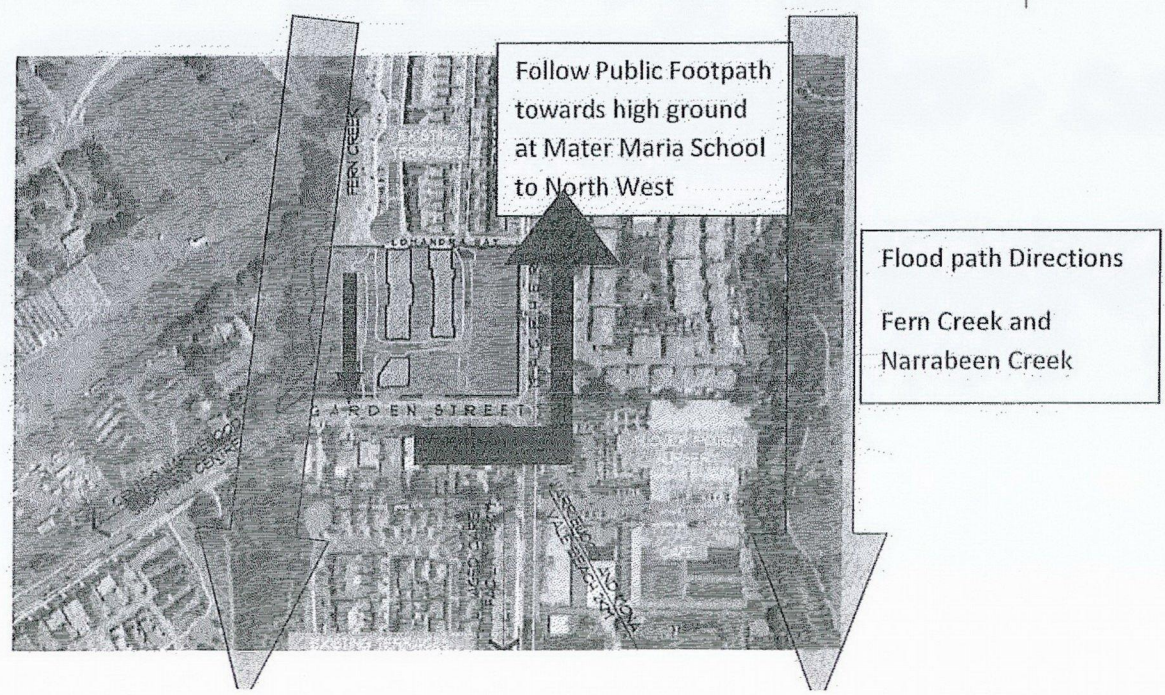
# FLOOD EMERGENCY RESPONSE – EXIT STRATEGY

## 23B Macpherson Street, (Hakea Drive), Warriewood

**The Council determined 100 year flood level and the 'Probable Maximum Flood' Level do not reach any of the house ground floor levels, so in the case of a major flood event one of the safest places is to REMAIN IN THE HOME.**

**As the flood levels will rise 'relatively' slowly in this location it will be possible to view the flood waters rising in the 25m Fern Creek landscape zone. It is therefore advised that if evacuation is preferred, then the evacuation should occur BEFORE flood waters have risen to the street levels. The plan below shows the safest evacuation route to use BEFORE the streets are flooded in a maximum flood event.**



**Civil Certification Pty Ltd**
Accredited Certifiers
Civil Engineering

53 Werona Avenue
Gordon, NSW, 2072
0412 264 237

ACN 607 721 595



Warriewood Properties Pty Ltd
4 Ponderosa Parade
Warriewood NSW 2102

Thursday, 10 September 2015

**Attention: Mr Paul Allinson**

Dear Paul,

**THE GROVE, 23B MACPHERSON STREET, WARRIEWOOD**
**DA N0085/11/S96/5 (*CONDITIONS E1, E2, E14 (iii), F5, F8 (iii), F8 (vi)*)**

**CIVIL ENGINEERING (*ROADS & STORMWATER DRAINAGE*)**
**PART4A COMPLIANCE CERTIFICATE #COMPC 933**
***(EP&A ACT 1979, SECTIONS 109C(1)(A))***

This Part 4A compliance certificate relates to the following civil engineering components at the above site:

- Public road reconstruction (*half width*) for both the Garden Street and Macpherson Street frontages, including associated footpath and drainage;
- Internal roads and drainage;
- OSD tank below Road 2;
- Internal WSUD systems (*ie GPT, creekside bio-retention basins*); and
- Creekline corridor reconstruction (*half width*).

Our certification is provided with reference to the following documentation:

- The LDC stamped Drawings by Craig & Rhodes *(24/6/14 – Rev E)* and any subsequent amendments;
- LDC CC 13115 dated 11/7/14;
- Craig and Rhodes Creek Reconstruction Drawings dated 8/11/13;
- Civil Certification Field Instructions (*various*);
- Dirt Doctors Pty Ltd Geotechnical inspection/testing reports (*various*);

- Civil Certification inspection reports (*various*);
- Consent Conditions N0085/11/S96/5 (*in particular Conditions E1, E2,E14(iii), F5, F8(iii) and F8(vi)* );
- Craig and Rhodes OSD Tank structural certification letter dated 8/9/15;
- Subdivision WAE Drawings by Alan Bardsley dated 20/6/15;
- Creekline WAE Drawings by CMS Surveyors dated 29/8/15;
- Simmons QA Documentation and Certification dated 15 June 2015;
- Simmons Defect Rectification letter dated 4 August 2015; and
- Simmons CCTV Pipe Condition Video (*various*) and associated reports.

I, Michael Shaw, being a professional engineer and accredited subdivision certifier, state that:

- I have carried out inspections of parts of the works during construction,
- I have carried out spot reviews of the contractor's Quality Assurance construction records, and
- as far as can be determined from this involvement, the work defined by the approved Craig & Rhodes drawings, specifications, Pittwater Council standards/consent conditions and instructions issued up to the time of each inspection conforms generally with the intent of those drawings, specifications, standards/conditions and instructions.

Please note that this certification excludes those outstanding civil items as listed in **Appendix A.**

Minor design amendments incorporated during construction are listed at **Appendix B.**

This advice shall not be construed as relieving any other party(s) of its responsibilities.

We trust this information is satisfactory. Should you have any questions, please do not hesitate to contact me on 0412 264 237.

Yours faithfully

**CIVIL CERTIFICATION PTY LTD**

**Michael Shaw**
BE(Civil) MIEAust CPEng NPER(Civil)
Accredited Certifier (BPB 0816)

**Director**

0412 264 237
02 8901 3904
mshaw@civilcert.com

*"Liability Limited by a Scheme Approved Under Professional Standards Legislation"*

COVER OF EXCELLENCE®

# Appendix A – Excluded Works

- Landscaping;
- Utility Services;
- Internal footpaths;
- Lot based works (*ie dwellings, driveways etc*);
- Lot based raingardens (*to be completed after dwelling construction*); and
- Various minor public road defects as listed in Civil Certification email dated 15/7/15 (*understood to be bonded by Council)*.

# Appendix B – Design Amendments

- Pre cast concrete headwall used at Pit 7/4;
- Deviation of the Road 3 alignment and associated drainage (CH4.5 to 32) to suit amended lot layout on Superlot 7 (*ie east end of Road 3 near electrical substation*);
- General lowering of creekline cycleway by approx. 100-200mm to suit site conditions and at Councils direction;
- Removable bollards at GPT not installed;
- Minor change to turning head at west end of Road 3
- Line 8 and Line 9 generally constructed deeper than design but still achieves fall at design grade to receiving pit.

**GeoEnviro Consultancy Pty Ltd**
Unit 5, 39-41 Fourth Avenue, Blacktown, NSW 2148, Australia
PO Box 1543, Macquarie Centre. North Ryde, NSW 2113
ABN: 62 084 294 762
Tel: (02) 9679 8733
Fax: (02) 9679 8744
Email: geoenviro@exemail.com.au

18th May 2012

JT08499F-r1

AusPacific Property Group
Level 1, Ponderosa Parade
WARRIEWOOD NSW 2101

Attention: Mr Peter Haxell

Dear Sir

**Re Proposed Residential Subdivision Development**
**Area A in Lot 11 Section C DP 5464, No 23 Macpherson Street Warriewood**
**Remediation and Validation Report**

## 1. Introduction

This report presents a summary of site remediation and validation works carried out on the proposed residential area (ie Area A referred hereafter as Subject Site) within the property referred to as Part Lot 11 Section C DP 5464 No 23 Macpherson Street in Warriewood, as shown on Drawing No 1.

The site was the subject of a preliminary contamination and geotechnical assessment by GeoEnviro Consultancy Pty Ltd (Ref JC00010C-r1 dated October 2001). Our previous report indicated Lot 11 to have some contamination issues associated with buried rubbish in the area along the creek and previous TP 5 (Drawing No 2). In addition to buried rubbish, there were slightly elevated concentrations of Zinc encountered in the vicinity of TP 6, 16, 17 and 19 above the EIL Criteria. The report recommended for additional sampling and validation testing of the affected areas after demolition/site clearing and the rubbish fill area be remediated prior to residential development.

We understand that the proposed development is to subdivide the Subject Site (Area A) into 46 residential lots (Lots 2 to 47) and one community lot (Lot 48) for a local neighbourhood centre. As part of the development, the site will be elevated about 1m above the existing level by filling. The creek corridor (Area B) will be under a separate lot (Lot 49) and this lot will be eventually dedicated to Council.

Site remediation was recently carried out on the Subject Site (Area A). It is intended for site remediation of the creek corridor (Area B) to be carried out at a later stage.

The purpose of this report is to assess and validate the Subject Site (Area A) to ensure the site is suitable for the proposed residential land use. The creek corridor (Zone B) will be validated at a later stage after remediation of the buried rubbish fill which will be carried out in conjunction with Fern Creek works.

## 2. Site Information

Property No 23 (which includes Area A and Area B) is situated in the south western corner of Macpherson Street and Garden Street in Warriewood. The Subject Site (Zone A) measures approximately 100m along Macpherson Street and 115m along Garden Street. The recently constructed Lomandra Way forms the north western boundary. Total site area is about 1.15 ha.

The site is situated on gently undulating terrain. Ground surface slopes down gently to the south west at angles less than 2 to 4 degrees. Based on the contour plan provided, ground surface is at about Reduced Level (RL) 12m Australian Height Datum (AHD).

The 1:100,000 Soil Landscape of Sydney Series 9130 prepared by the Soil Conservation Services of NSW indicates the site to be underlain by swamp soil belonging to the Warriewood landscape grouping. Typically soil profile in the general area is deep and consists of sandy humus Podzols and dark mottled Siliceous sands overlying acid peats in depression and pale siliceous sands.

The 1:100,000 geological map of Sydney indicates the major portion of the site to be underlain stream alluvial and estuarine sediments consisting of silty to peaty quartz sand, silt and clay with ferruginous and humic cementation in places.

## 3. Previous Studies

A preliminary contamination assessment of the site was performed by GeoEnviro Consultancy in order to investigate the likelihood of ground contamination on the site in 2000. Reference may be made to our previous report (Ref JC00010C-r1 dated October 2001) for details. The investigation consisted of a review of site history, a site inspection and soil sampling and analysis program.

At the time of the initial site investigation, the property (No 23) was mainly used by a nursery business with the following buildings and site features (Refer to Drawing No 1);

| Site Feature No | Description |
|---|---|
| 1. | Glasshouses currently used by a nursery business. |
| 2. | Weatherboard house with tenants. |
| 3. | Horse stables which are in currently in used. Some rubbish was dumped around the stables. |
| 4. | Timber and metal shed. |
| 5. | Fibro workshop (with asbestos sheeting) on concrete floor slab. Currently used for maintenance works. |
| 6. | Stockpile of Gardening Soil |

The fieldwork for the investigation was carried out on the 25th September 2001 and consisted of excavation of 25 test pits across the property using a rubber tyred backhoe. Refer to Drawing No 2 for previous test pit locations

The following is a summary of the subsurface profiles encountered in test pits;

- Rubbish fill was encountered in TP 5 and 20 to 25. Note that TP 5 was situated within the Subject Site (Area A) and this test pit encountered some minor building rubble in the sandy fill which was estimated to be about 400mm thick.

  The other test pits (TP 20 to 25) which were excavated within creek corridor (Area B) encountered fill consisting predominantly of fine to medium grained silty sand with topsoil mixture and a significant amount of rubbish such as building rubble (ie concrete, timber, bricks, steel etc), household rubbish (ie domestic rubbish, plastics, etc) and other items such as tyres, glass and polystyrenes. The thickness of the rubbish fill encountered in these test pits vary from 0.4m to in excess of 1.3m.

  The exact extent of the fill along the creek could not be determined due to inaccessibility of this area to the backhoe at the time of our previous investigation. A significant amount of rubbish buried rubbish was claimed to have been dumped along the banks of Fern Creek.

- Topsoil/fill was encountered in most test pits consisting mainly of fine to medium grained silty sand/sandy silt. Thickness of the topsoil/fill was found to vary from about 0.3m to 0.4m. Some foreign inclusions (such as glass and plastics) were encountered in the topsoil in TP 6 and 11 to 13.
- Underlying the topsoil and fill, natural soil consists of a fine to medium grained silty sand and sand, becoming clayey at lower depths
- Ground water seepage was encountered in TP 4, 11, 15 at depths ranging from about 2.2m to 3.1m below existing ground surface

Selected samples were analysed for a range of potential contaminants consisting of heavy metals, organochlorine pesticides, organophosphorus pesticides and soil pH. The results were interpreted by comparison with guideline Criteria recommended by the NSW EPA. Onsite photoionisation detector testing was carried out to detect Volatile Ionisable Compounds and presence of hydrocarbon products.

The concentrations of heavy metals were reported to be below the Environmental Investigation Level (EIL) in all samples analysed except Zinc in the following test locations;

| Location | Test Pit | Depth (m) | Zinc Concentration (mg/kg) |
|---|---|---|---|
| Area A (Subject Site) | TP 6 | 0.0-0.2 | 980 |
| | TP 16 | 0.0-0.2 | 385 |
| | TP 17 | 0.0-0.2 | 240 |
| | TP 19 | 0.0-0.2 | 210 |
| Area B (Creek Corridor) | TP 20 | 0.0-0.5 | 230 |
| | TP 21 | 0.0-0.5 | 290 |
| | TP 23 | 0.0-0.5 | 560 |

All concentrations of heavy metals were found to be well below the NEHF 'A' guidelines. The laboratory test results indicated all concentrations of organochlorine and organophosphorus pesticides to be within acceptable limits.

The report concluded that the likelihood of gross chemical contamination on the site is generally considered low however, the site was found to have a significant amount of rubbish fill in the creek corridor (Area B). Our report recommended for additional test pit investigation be carried out and site remedial/validation works to be carried out as follows;

- The buried fill material should be removed off site to an EPA approved landfill and all asbestos material where encountered should be appropriately disposed of in accordance with regulatory requirements.
- Additional soil sampling and laboratory analysis in areas with elevated concentrations of Zinc and if similar concentrations are encountered, site remediation by on-site capping with topsoil or vertical mixing may be required.
- Validation sampling and testing of soil beneath existing buildings/structures after removal of floor slabs should be carried out.

## 4.0 Site Remediation of Area A

Subsequent to our 2001 report, all building structures and houses within the site were demolished and cleared and this work was carried out as part of the subdivision development of the adjoining Sector 8 Australand project in 2005.

Since then, the site was left vacant and undisturbed until recently when the following remediation works were carried out on the Subject Site (Area A) as follows (Refer to Drawing No 2);

- The topsoil and organic material was stripped from the surface of the Subject Site and removed off site.
- Surface rubbish (eg building waste, household rubbish and asbestos) were removed from site and disposed to Benedict in February 2012. Note that some of the surface rubbish was derived from unauthorised dumping.
- Zones A and C to F which were found to have elevated concentrations of Zinc were vertically mixed.
- Zone B where some buried building rubbish was encountered were excavated and disposed to SITA Australia Pty Ltd in January 2012.

The site remediation works were carried out by Peter Kilcullen (PK Rubbish Removals Pty Ltd) and Mona Vale Earthmoving Pty Ltd. Refer to the attached Receipts and Tip Dockets.

## 5.0 Site Validation

Site Inspection and validation sampling was carried out by GeoEnviro on the 26th March 2012. At the time of our site inspection, the Subject Site (Area A) had been levelled out and the ground surface was predominantly bare of grass. A trace of small pieces of tile and brick fragments and a few pieces of glass were noted on the ground surface. There were no visible signs of asbestos fragments, ground staining, discolouration or odour.

The samples were collected in the vicinity of the areas of concern as shown on Drawing No 2 (Areas A to F) and analysed for contaminants as concern as summarised below;

| Zone | Site Feature | Sample IDs | Analysis |
|---|---|---|---|
| Zone A | Previous TP 6 (Elevated Zinc | A1 to A9 | Zn |
| Zone B | Previous TP 5 (Buried Rubbish) | B1 | Heavy metals – (As, Cd, Cr, Cu, Hg, Pb, Ni and Zn). OCP, TPH, BTEX, PAHs, Asbestos and pH |
| Zone C | Previous TP 19 (Elevated Zinc | C1 to C5 | Zn |
| Zone D | Previous Site Feature 5 (Shed) | D1 | Heavy metals – (As, Cd, Cr, Cu, Hg, Pb, Ni and Zn). OCP, TPH, BTEX, PAHs, Asbestos and pH |
| Zone E | Previous Site Feature 4/5 (Sheds) | E1 | Heavy metals – (As, Cd, Cr, Cu, Hg, Pb, Ni and Zn). OCP, TPH, BTEX, PAHs, Asbestos and pH |
| | Previous TP 17 (Elevated Zinc) | E2 to E5 | Zn |
| Zone F | Previous Site Feature 2 (House) | F1 | Heavy metals – (As, Cd, Cr, Cu, Hg, Pb, Ni and Zn). OCP, TPH, BTEX, PAHs, Asbestos and pH |
| | Previous TP 16 (Elevated Zinc) | F2 to F5 | Zn |

For the purpose of this validation assessment, the criteria for a standard residential setting with garden/accessible soil (HIL's A) established by the National Environment Protection Council Service Corporation was adopted as the Site Criteria. The assessment of TRH, BTEX and PAH were based on the DEC Guideline for Assessing Service Station Sites.

For a description of the validation samples, refer to Tables 1. Tables 2 to 8 provide a summary of the laboratory testing, results and Site Criteria.

The following is a summary of the laboratory test results;

**Metals**

The samples analysed encountered all concentrations of heavy metals of concern to be within the Site Criteria. Slightly elevated concentrations of Zinc between 210mg/kg to 550mg/kg were encountered in samples A1, B1, E2, E3 and F1. As all concentrations were less than 3 times the EIL level of 600mg/kg and the 95% Confidence level of Zinc was calculated to be 188mg/kg which is within the EIL of 200mg/kg, concentrations of Zinc are not considered significant and do no constitute a 'hot-spot'.

**Organochlorine Pesticides**

The samples analysed encountered all concentrations of OCP to be negligible or below laboratory detection limits and therefore within the Site Criteria. . Refer to Table 4 for a summary of laboratory test results. Refer to Table 4 for a summary of the laboratory test results.

**Polychlorinated Biphenyls**

The samples analysed encountered all concentrations of PCB to be below laboratory detection limits and therefore within the Site Criteria. Refer to Table 5 for a summary of laboratory test results.

**Total Recoverable Hydrocarbons**

All samples encountered concentrations of TRH to be below laboratory detection limits and therefore within the Site Criteria. Refer to Table 6 for a summary of laboratory test results.

**Benzene, Toluene, Ethyl Benzene and Xylenes**

The samples analysed encountered concentrations of BTEX to be below laboratory detection limits and therefore within the Site Criteria. Refer to Table 6 for a summary of laboratory test results.

**Polycyclic Aromatic Hydrocarbons**

The samples analysed encountered concentrations of PAH to be below laboratory detection limits and therefore within the Site Criteria. Refer to Table 7 for a summary of laboratory test results.

**Asbestos**

All samples did not detect bonded asbestos or asbestos fibres. Refer to Table 8 for a summary of laboratory test results.

## 6. Quality Control and Assurance

The field sampling for the validation was carried out in accordance with GeoEnviro Consultancy Standard procedures. This included collection of samples in new glass jars, preservation of samples in ice chests and transport of samples to the contract laboratory under chain of custody documentation.

One duplicate sample was prepared from the primary sample E1 (0.0-0.1m) and submitted blind to Enviroab Services for analysis. The maximum Relative Percentage Difference (RPD) recorded was 46.2% for the Heavy Metal Zinc. The RPDs for PCB, TRH, BTEX and PAH could not be calculated as the results were below laboratory detection limits in the primary and/or duplicate samples.

The maximum RPD is within the targeted 50% and in conjunction with the internal laboratory QA/QC results that are presented in the attached laboratory certificates, suggest that the laboratory analysis carried out for this investigation were reliable.

## 7. Conclusion

Based on the laboratory test results, the validation samples were found to have concentrations of contaminants of concern to be within the Site Criteria and therefore the Subject Site (Area A) has been adequately remediated for the proposed residential development.

Samples A1, B1, E2, E3 and F1 were found to be have slightly elevated levels of Zinc (ie 210mg/kg to 550mg/kg) however as the concentrations of Zinc were found to be less than 3 times the EIL level of 600mg/kg and well within the Site Criteria of 7000mg/kg, these areas are not considered to be a 'Hot Spots'. Elevated concentrations of Zinc above the EIL level may result in phytotoxicity to plants causing growth retardation however as the Subject Site will be filled up to 1.0m as part of the proposed development, these concentrations are not considered significant to adversely impact of the development.

## 8. Limitations

The findings contained in this report are the results of discreet/specific sampling methodologies used in accordance with normal practices and standards. There is no investigation which is thorough enough to preclude the presence of material which presently, or in future, may be considered hazardous to the site.

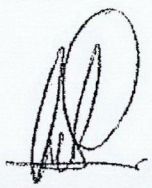
As regulatory evaluation criteria are constantly updated, concentrations of contaminants presently considered low, may in the future fall short of regulatory standards that require further investigation/redemption.

The statements presented in these documents are intended to advise you of what should be your realistic expectations of this report, and to present you with recommendations on how to minimise the risks associated with the groundworks for this project. The document is not intended to reduce the level of responsibility accepted by GeoEnviro Consultancy Pty Ltd, but rather to ensure that all parties who may rely on this report are aware of their responsibilities.

Attached are documents entitled "Important Information about Your Environmental Site Assessment" in conjunction with which this report must be read, as it details important limitations regarding the investigation undertaken and this report.

If you have any questions regarding the above, please contact the undersigned.

Yours faithfully
**GeoEnviro Consultancy Pty Ltd**



Solern Liew CPEng
Director

Attachments: Drawing No 1: Previous Site Features Plan
Drawing No 2: Previous Test Pit and Remediation Plan
Drawing No 3: Validation Sampling Location Plan

Table 1: Summary of Soil Profile
Table 2: Analytical Program
Table 3: Summary of Analytical Results – pH and Metals
Table 4: Summary of Analytical Results – OCP
Table 5: Summary of Analytical Results – PCB
Table 6: Summary of Analytical Results – TRH and BTEX
Table 7: Summary of Analytical Results – PAH
Table 8: Summary of Analytical Results – Asbestos
Table 9: Summary of Analytical Results – Quality Assurance

Laboratory Certificates
Tip Dockets
Important Information about your Environmental Report

*Reference*

1. *"Preliminary Contamination and Geotechnical Report " – GeoEnviro Consultancy Ref JC00010C-r1 dated October 2001*

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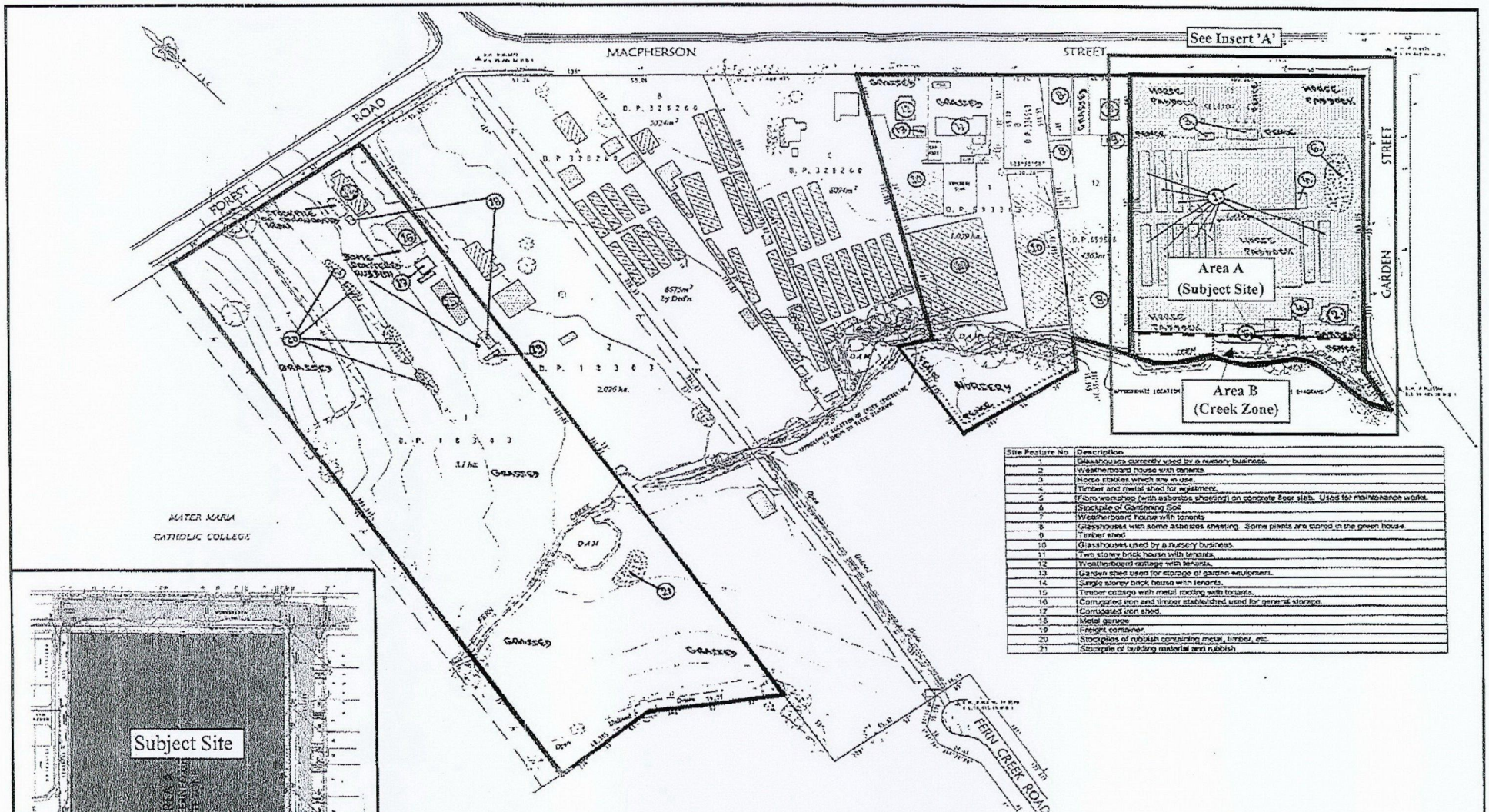
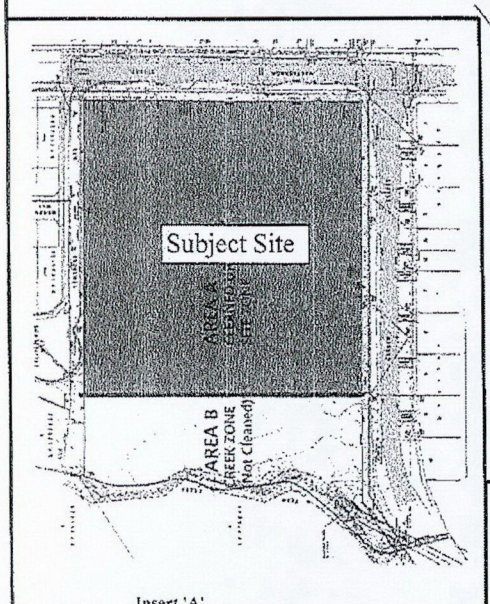


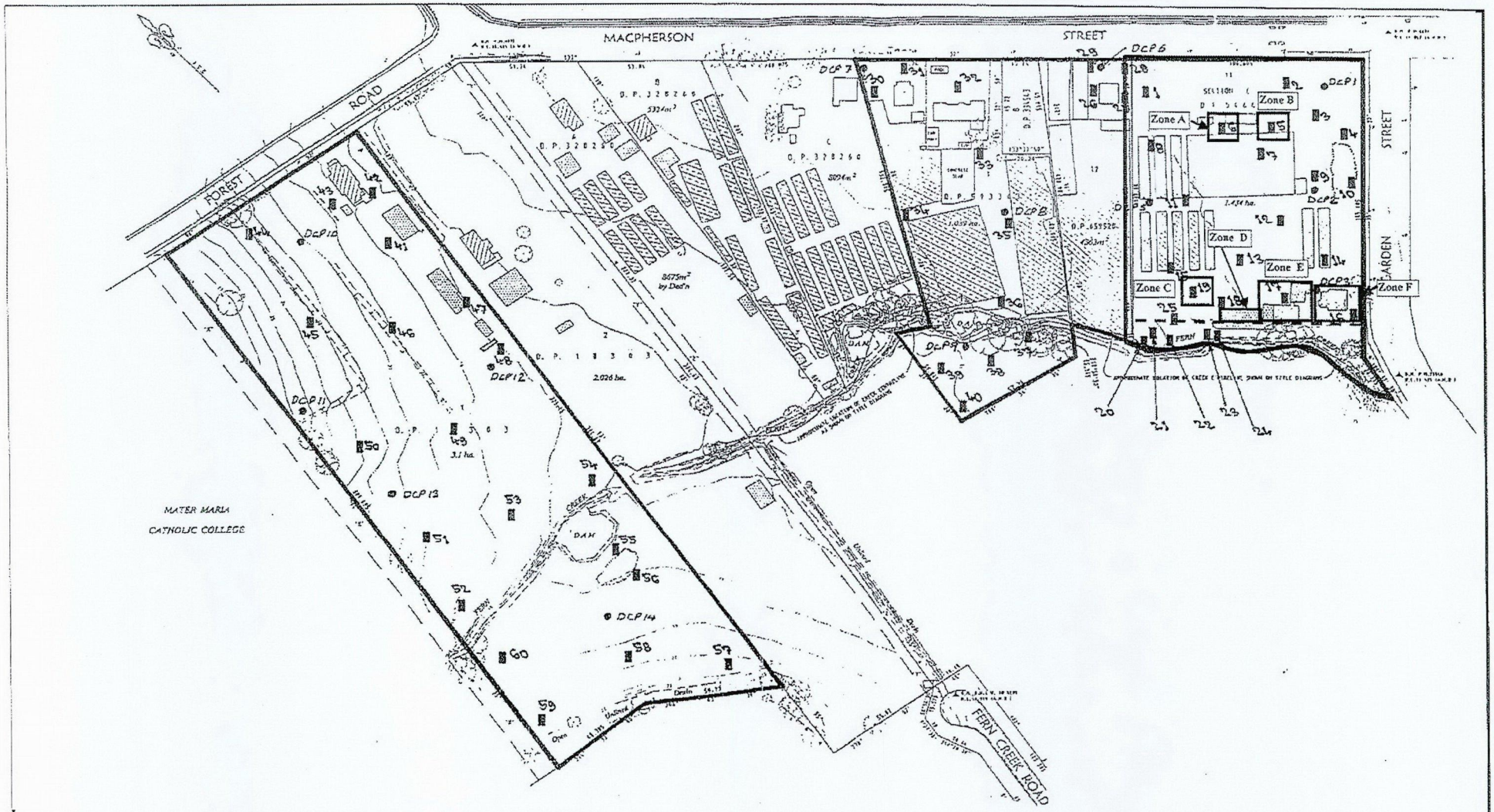

| Site Feature No. | Description |
|---|---|
| 1 | Glasshouses currently used by a nursery business. |
| 2 | Weatherboard house with tenants. |
| 3 | Horse stables which are in use. |
| 4 | Timber and metal shed for equipment. |
| 5 | Fibro workshop (with asbestos sheeting) on concrete floor slab. Used for maintenance works. |
| 6 | Stockpile of Gardening Soil |
| 7 | Weatherboard house with tenants. |
| 8 | Glasshouses with some asbestos sheeting. Some plants are stored in the green house. |
| 9 | Timber shed |
| 10 | Glasshouses used by a nursery business. |
| 11 | Two storey brick house with tenants. |
| 12 | Weatherboard cottage with tenants. |
| 13 | Garden shed used for storage of garden equipment. |
| 14 | Single storey brick house with tenants. |
| 15 | Timber cottage with metal roofing with tenants. |
| 16 | Corrugated iron and timber stable/shed used for general storage. |
| 17 | Corrugated iron shed. |
| 18 | Metal garage. |
| 19 | Freight container. |
| 20 | Stockpiles of rubbish containing metal, timber, etc. |
| 21 | Stockpile of building material and rubbish. |




Insert 'A'

GeoEnviro Consultancy
Unit 5, 39-41 Fourth Avenue, Blacktown NSW 2148, Australia
Tel: (02) 96798733 Fax: (02) 96798744

| | | |
|---|---|---|
| Drawn By: SG | Date: 19/04/2012 | AusPacific Property Group |
| Checked By: SL | Date: 19/04/2012 | Lot 11 Sec C DP 5464, No 23 Macpherson Street Warriewood |
| Revision By: | Date: | Previous Site Features Plan |
| Scale: NTS | A3 | Project No: JT08499F / Drawing No: 1 |

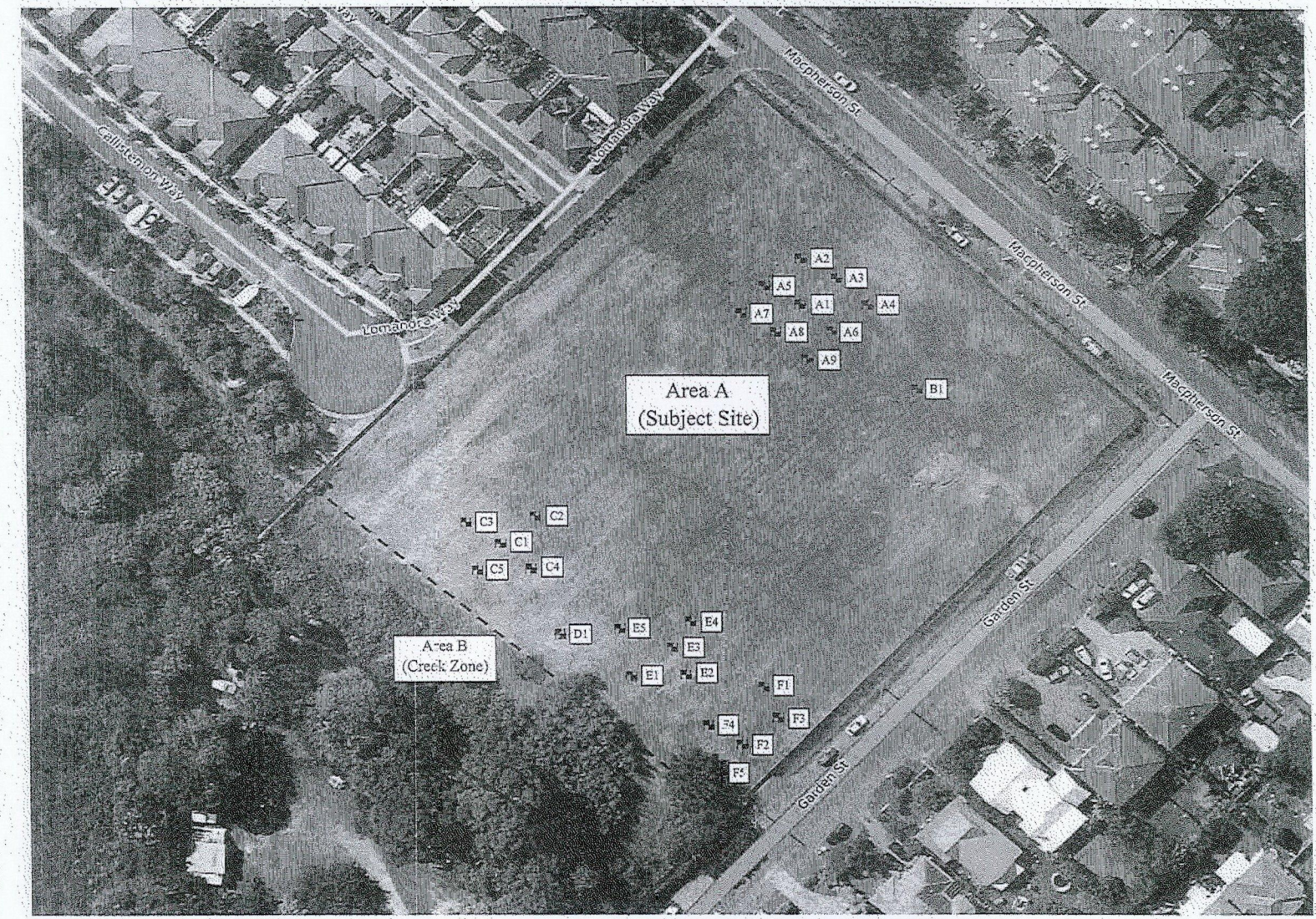



## Legend

- Previous Test Pit
- Zone A to F - Remediation Areas

GeoEnviro Consultancy
Unit 5, 39-41 Fourth Avenue, Blacktown NSW 2148, Australia
Tel: (02) 96798733 Fax: (02) 96798744

| | | |
|---|---|---|
| Drawn By: SG | Date: 19/04/2012 | AusPacific Property Group |
| Checked By: SL | Date: 19/04/2012 | Lot 11 Sec C DP 5464, No 23 Macpherson Street Warriewood |
| Revision By: | Date: | Previous Test Pit and Remediation Area Plan |
| Scale: NTS | A3 | Project No: JT08499F / Drawing No: 2 |




Legend

Test Pit Location Plan

| | | | |
|---|---|---|---|
| GeoEnviro Consultancy<br>Unit 5, 39-41 Fourth Avenue, Blacktown NSW 2148, Australia<br>Tel: (02) 96798733 Fax: (02) 96798744 | Drawn By: SG | Date: 19/04/2012 | AusPacific Property Group<br>Lot 11 Sec C DP 5464, No 23 Macpherson Street Warriewood<br>Validation Sampling Location Plan |
| | Checked By: SL | Date: 19/04/2012 | |
| | Revision By: | Date: | |
| | Scale: NTS | A3 | Project No: JT08499F / Drawing No: 3 |

| Location | Depth (m) | Profile Type | Description |
|---|---|---|---|
| Zone A | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, with trace bricks fragments, dry |
| | 0.2-0.3 | Natural | Silty Sand: Fine to medium grained, yellow brown, dry to moist |
| Zone B | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, with a trace glass, dry |
| | 0.2-0.3 | Fill | Silty Sand: Fine to medium grained, yellow brown, trace of fine to medium grained gravel, dry to moist |
| Zone C | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, dry |
| | 0.2-0.3 | Natural | Silty Sand: Fine to medium grained, yellow brown, dry to moist |
| Zone D | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, with a trace concrete, dry |
| | 0.2-0.3 | Natural | Silty Sand: Fine to medium grained, yellow brown, dry to moist |
| Zone E | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, with a trace bricks and glass dry |
| | 0.2-0.3 | Natural | Silty Sand: Fine to medium grained, yellow brown, dry to moist |
| Zone F | 0.0-0.2 | Fill | Silty Sand: Fine to medium grained, brown, with a trace concrete cobble, dry |
| | 0.2-0.3 | Fill | Silty Sand: Fine to medium grained, yellow brown, trace of fine to medium grained gravel, dry to moist |

Note:
PP = Pocket Penetrometer
MC = Moisture Content
PL = Plastic Limit

GeoEnviro Consultancy

**TABLE 1**
**SUMMARY OF SOIL PROFILE**

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood



Prepared By: SL 24/05/2012
Checked By: SG Date:24/05/2012

| Sample | Depths (m) | Sample Date | Sample Type | Analysis | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | pH | Heavy Metals | | | | | | | | OCP | PCB | TRH | BTEX | PAH | Asbestos |
| | | | | | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | | | | | | |
| A1 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A2 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A3 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A4 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A5 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A6 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A7 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A8 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| A9 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| B1 | 0.0 - 0.1 | 26/03/2012 | Soil | o | o | o | o | o | o | o | o | o | o | o | o | o | o | o |
| C1 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| C2 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| C3 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| C4 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| C5 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| D1 | 0.0 - 0.1 | 26/03/2012 | Soil | o | o | o | o | o | o | o | o | o | o | o | o | o | o | o |
| E1 | 0.0 - 0.1 | 26/03/2012 | Soil | o | o | o | o | o | o | o | o | o | o | o | o | o | o | o |
| E2 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| E3 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| E4 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| E5 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| F1 | 0.0 - 0.1 | 26/03/2012 | Soil | o | o | o | o | o | o | o | o | o | o | o | o | o | o | o |
| F2 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| F3 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| F4 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| F5 | 0.0 - 0.1 | 26/03/2012 | Soil | | | | | | | | | o | | | | | | |
| Duplicate BB | - | 26/03/2012 | Soil | o | o | o | o | o | o | o | o | o | o | o | o | o | o | o |

Note: O denotes tested

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# TABLE 2

## Analytical Program

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood



Prepared By:SL Date: 24/05/2012
Checked By:__SG___Date:24/05/2012

| Sample | Depths (m) | pH | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 0.0 - 0.1 | | | | | | | | | ***210*** |
| A2 | 0.0 - 0.1 | | | | | | | | | 150 |
| A3 | 0.0 - 0.1 | | | | | | | | | 190 |
| A4 | 0.0 - 0.1 | | | | | | | | | 140 |
| A5 | 0.0 - 0.1 | | | | | | | | | 180 |
| A6 | 0.0 - 0.1 | | | | | | | | | 150 |
| A7 | 0.0 - 0.1 | | | | | | | | | 120 |
| A8 | 0.0 - 0.1 | | | | | | | | | 78 |
| A9 | 0.0 - 0.1 | | | | | | | | | 180 |
| B1 | 0.0 - 0.1 | 5.7 | <4 | <0.5 | 6 | 14 | 31 | 0.1 | 5 | ***550*** |
| C1 | 0.0 - 0.1 | | | | | | | | | 200 |
| C2 | 0.0 - 0.1 | | | | | | | | | 150 |
| C3 | 0.0 - 0.1 | | | | | | | | | 120 |
| C4 | 0.0 - 0.1 | | | | | | | | | 76 |
| C5 | 0.0 - 0.1 | | | | | | | | | 200 |
| D1 | 0.0 - 0.1 | 6.5 | <4 | <0.5 | 18 | 18 | 24 | <0.1 | 17 | 130 |
| E1 | 0.0 - 0.1 | 5.9 | <4 | <0.5 | 8 | 11 | 31 | <0.1 | 3 | 130 |
| E2 | 0.0 - 0.1 | | | | | | | | | ***380*** |
| E3 | 0.0 - 0.1 | | | | | | | | | ***350*** |
| E4 | 0.0 - 0.1 | | | | | | | | | 190 |
| E5 | 0.0 - 0.1 | | | | | | | | | 110 |
| F1 | 0.0 - 0.1 | 6.5 | <4 | <0.5 | 7 | 22 | 88 | <0.1 | 5 | ***230*** |
| F2 | 0.0 - 0.1 | | | | | | | | | 110 |
| F3 | 0.0 - 0.1 | | | | | | | | | 66 |
| F4 | 0.0 - 0.1 | | | | | | | | | 130 |
| F5 | 0.0 - 0.1 | | | | | | | | | 78 |
| Duplicate BB | - | 6.6 | <4 | <0.5 | 5 | 14 | 30 | <0.1 | 2 | 130 |
| **EIL's (Interim Urban)** | | | **20** | **3** | **400/I*** | **100** | **600** | **1** | **60** | **200** |
| **HILs 'A' Criteria** | | | **100** | **20** | **100** | **1000** | **300** | **15** | **600** | **7000** |

Notes

1) All results are expressed as mg/kg and pH (units).

2) Figures in bold italics exceed the EIL

3) Figures in bold italics that have been underlined exceed the HILs 'A' Criteria

4) * Chromium (III)/ Chromium (VI)

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**TABLE 3**

**Summary of Analytical Results - pH & Heavy Metals**

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood

| Sample | Depths | HCB | alpha-BHC | gamma-BHC | beta-BHC | Heptachlor | delta-BHC | Aldrin | Heptachlor Epoxide | gamma-Chlordane | alpha-chlordane | Endosulfan I | pp-DDE | Dieldrin | Endrin | pp-DDD | Endosulfan II | pp-DDT | Endrin Aldehyde | Endosulfan Sulphate | Methoxychlor | Total OCP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| D1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| E1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| F1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| Duplicate BB | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| **HILs 'A' Criteria** | | | | | | 10 | | 10 | | | | | 200 | 10 | | 200 | | 200 | | | | |

Notes

1) All results are expressed as mg/kg and pH (units).

2) Figures in bold italics exceed the HILs 'A' criteria

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# TABLE 4

## Summary of Analytical Results - OCP

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood

| Sample | Depths | Arochlor 1016 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | Total PCB |
|---|---|---|---|---|---|---|---|---|
| B1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| D1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| E1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| F1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| Duplicate BB | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | ND |
| **HILs 'A' Criteria** | | | | | | | | 10 |

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Notes

1) All results are expressed as

2) Figures in bold italics that have been underlined exceed the HILs 'A' level

# TABLE 5
## Summary of Analytical Results - PCB

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood

| Sample | Depths - | $C_6$-$C_9$ | $C_{10}$-$C_{14}$ | $C_{15}$-$C_{28}$ | $C_{29}$-$C_{36}$ | $C_{10}$-$C_{36}$ | Benzene | Toluene | Ethyl-Benzenes | m+p-Xylene | 0-Xylene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B1 | 0.0 - 0.1 | <25 | <50 | <100 | <100 | ND | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |
| D1 | 0.0 - 0.1 | <25 | <50 | <100 | <100 | ND | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |
| E1 | 0.0 - 0.1 | <25 | <50 | <100 | <100 | ND | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |
| F1 | 0.0 - 0.1 | <25 | <50 | <100 | <100 | ND | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |
| Duplicate BB | - | <25 | <50 | <100 | <100 | ND | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |
| NSW DEC (1994) | | 65 | | | | 1000 | 1 | 1.4 | 3.1 | 14 | |

Notes

1) All results are expressed as mg/kg unless otherwise specified

2) Figures in bold italics exceed the NSW DEC criteria

3) ND Not detected

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# TABLE 6
## Summary of Analytical Results - TRH and BTEX

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood



Prepared by SL Date : 24/05/2012
Checked By: SG Date:24/05/2012

| Sample | Depths | Naphthalene | Acenaphthylene | Acenaphthene | Fluorene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benzo(a)anthracene | Chrysene | Benzo(b+k)fluoranthene | Benzo(a)pyrene | Indeno(1,2,3-c,d)pyrene | Dibenzo(a,h)anthracene | Benzo(g,h,i)perylene | Total PAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.05 | <0.1 | <0.1 | <0.1 | ND |
| D1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.05 | <0.1 | <0.1 | <0.1 | ND |
| E1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.05 | <0.1 | <0.1 | <0.1 | ND |
| F1 | 0.0 - 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.05 | <0.1 | <0.1 | <0.1 | ND |
| Duplicate BB | - | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 0.1 | <0.1 | <0.1 | <0.2 | 0.07 | <0.1 | <0.1 | <0.1 | 0.27 |
| HILs 'A' Criteria | | | | | | | | | | | | | 1 | | | | 20 |

Notes

1) All results are expressed as mg/kg

2) Figures in bold italics exceed the HIL's A Guidelines

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**TABLE 7**

**Summary of Analytical Results - PAH**

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood



Prepared By: SL Date: 24/05/2012
Checked By: SG Date: 24/05/2012

| Sample | Depths (m) | Asbestos |
|---|---|---|
| B1 | 0.0 - 0.1 | ND |
| D1 | 0.0 - 0.1 | ND |
| E1 | 0.0 - 0.1 | ND |
| F1 | 0.0 - 0.1 | ND |
| Duplicate BB | - | ND |

Note: ND = Not detected

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# TABLE 8

## Summary of Analytical Results - Asbestos

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood



Prepared By: SL Date: 24/05/2012
Checked By:__SG___Date:24/05/2012

| Sample | Depths | Metals | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc |
| E1 | 0.0 - 0.1 | <4 | <0.5 | 8 | 11 | 31 | <0.1 | 3 | 130 |
| Duplicate BB | - | <4 | <0.5 | 5 | 14 | 30 | <0.1 | 2 | 130 |
| Relative Percentage Difference (RPD) | | NA | NA | 46.2 | 24.0 | 3.3 | NA | 40.0 | 0.0 |

| Sample | Depths | OCP | PCB | TRH | BTEX | PAH |
|---|---|---|---|---|---|---|
| E1 | 0.0 - 0.1 | ND | ND | ND | ND | ND |
| Duplicate BB | - | ND | ND | ND | ND | 0.27 |
| Relative Percentage Difference (RPD) | | NA | NA | NA | NA | NA |

Notes

1) All results are expressed as mg/kg .

2) ND - Not Detected

3) NA - Not Applicable

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# TABLE 9

## Summary of Analytical Results - Quality Assurance

AusPacific Property Group

Proposed Residential Subdivision Development

Lot 11 Sec C DP 5464, No 23 Macpherson Street, Warriewood

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

# CERTIFICATE OF ANALYSIS 71087

**Client:**
**Geoenviro Consultancy Pty Ltd**
PO Box 1543, Macquarie Centre
North Ryde
NSW 2113

**Attention:** Solern Liew

**Sample log in details:**

| | | |
|---|---|---|
| Your Reference: | JT08499F | |
| No. of samples: | 27 soils | |
| Date samples received / completed instructions received | 28/03/12 | / 28/03/12 |

**Analysis Details:**
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
***Please refer to the last page of this report for any comments relating to the results.***

**Report Details:**

| | | |
|---|---|---|
| Date results requested by: / Issue Date: | 5/04/12 | / 5/04/12 |
| Date of Preliminary Report: | Not Issued | |

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

**Results Approved By:**

Nancy Zhang
Chemist

Nick Sarlamis
Inorganics Supervisor

Giovanni Agosti
Technical Manager

Paul Ching
Approved Signatory

Jeremy Faircloth
Chemist

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

| vTRH&BTEX in Soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-10 | 71087-16 | 71087-17 | 71087-22 | 71087-27 |
| Your Reference | ---------- | B1 | D1 | E1 | F1 | DUPLICATE BB |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | -- |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 |
| vTRH $C_6$ - $C_9$ | mg/kg | <25 | <25 | <25 | <25 | <25 |
| Benzene | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Toluene | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | mg/kg | <1 | <1 | <1 | <1 | <1 |
| m+p-xylene | mg/kg | <2 | <2 | <2 | <2 | <2 |
| o-Xylene | mg/kg | <1 | <1 | <1 | <1 | <1 |
| *Surrogate* aaa-Trifluorotoluene | % | 87 | 118 | 114 | 114 | 115 |

**Client Reference: JT08499F**

| sTRH in Soil (C10-C36) | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-10 | 71087-16 | 71087-17 | 71087-22 | 71087-27 |
| Your Reference | ---------- | B1 | D1 | E1 | F1 | DUPLICATE BB |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | -- |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 |
| TRHC$_{10}$ - C$_{14}$ | mg/kg | <50 | <50 | <50 | <50 | <50 |
| TRHC$_{15}$ - C$_{28}$ | mg/kg | <100 | <100 | <100 | <100 | <100 |
| TRHC$_{29}$ - C$_{36}$ | mg/kg | <100 | <100 | <100 | <100 | <100 |
| *Surrogate* o-Terphenyl | % | 98 | 105 | 103 | 106 | 103 |

**Client Reference: JT08499F**

| PAHs in Soil<br>Our Reference:<br>Your Reference | UNITS<br>---------- | 71087-10<br>B1 | 71087-16<br>D1 | 71087-17<br>E1 | 71087-22<br>F1 | 71087-27<br>DUPLICATE<br>BB |
|---|---|---|---|---|---|---|
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | -- |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 |
| Naphthalene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 |
| Pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(b+k)fluoranthene | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | 0.07 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| *Surrogate p*-Terphenyl-$d_{14}$ | % | 83 | 91 | 83 | 83 | 96 |

| Organochlorine Pesticides in soil<br>Our Reference:<br>Your Reference<br><br>Depth<br>Date Sampled<br>Type of sample | UNITS<br>----------<br><br>---------- | 71087-10<br>B1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-16<br>D1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-17<br>E1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-22<br>F1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-27<br>DUPLICATE<br>BB<br><br>--<br>01/10/2011<br>Soil |
|---|---|---|---|---|---|---|
| Date extracted | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 |
| HCB | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| alpha-BHC | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| gamma-BHC | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| beta-BHC | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| delta-BHC | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Aldrin | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Heptachlor Epoxide | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| gamma-Chlordane | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| alpha-chlordane | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan I | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| pp-DDE | mg/kg | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 |
| Dieldrin | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| pp-DDD | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan II | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| pp-DDT | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Endosulfan Sulphate | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Methoxychlor | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| *Surrogate* TCLMX | % | 98 | 99 | 97 | 87 | 96 |

| PCBs in Soil<br>Our Reference:<br>Your Reference<br><br>Depth<br>Date Sampled<br>Type of sample | UNITS<br>----------<br><br>---------- | 71087-10<br>B1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-16<br>D1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-17<br>E1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-22<br>F1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-27<br>DUPLICATE<br>BB<br><br>--<br>01/10/2011<br>Soil |
|---|---|---|---|---|---|---|
| Date extracted | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 | 31/03/2012 |
| Arochlor 1016 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1221 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1232 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1242 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1248 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1254 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1260 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| *Surrogate* TCLMX | % | 98 | 99 | 97 | 87 | 96 |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-1 | 71087-2 | 71087-3 | 71087-4 | 71087-5 |
| Your Reference | ---------- | A1 | A2 | A3 | A4 | A5 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Zinc | mg/kg | 210 | 150 | 190 | 140 | 180 |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-6 | 71087-7 | 71087-8 | 71087-9 | 71087-10 |
| Your Reference | ---------- | A6 | A7 | A8 | A9 | B1 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Arsenic | mg/kg | [NA] | [NA] | [NA] | [NA] | <4 |
| Cadmium | mg/kg | [NA] | [NA] | [NA] | [NA] | <0.5 |
| Chromium | mg/kg | [NA] | [NA] | [NA] | [NA] | 6 |
| Copper | mg/kg | [NA] | [NA] | [NA] | [NA] | 14 |
| Lead | mg/kg | [NA] | [NA] | [NA] | [NA] | 31 |
| Mercury | mg/kg | [NA] | [NA] | [NA] | [NA] | 0.1 |
| Nickel | mg/kg | [NA] | [NA] | [NA] | [NA] | 5 |
| Zinc | mg/kg | 150 | 120 | 78 | 180 | 550 |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-11 | 71087-12 | 71087-13 | 71087-14 | 71087-15 |
| Your Reference | ---------- | C1 | C2 | C3 | C4 | C5 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Zinc | mg/kg | 200 | 150 | 120 | 76 | 200 |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-16 | 71087-17 | 71087-18 | 71087-19 | 71087-20 |
| Your Reference | ---------- | D1 | E1 | E2 | E3 | E4 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Arsenic | mg/kg | <4 | <4 | [NA] | [NA] | [NA] |
| Cadmium | mg/kg | <0.5 | <0.5 | [NA] | [NA] | [NA] |
| Chromium | mg/kg | 18 | 8 | [NA] | [NA] | [NA] |
| Copper | mg/kg | 18 | 11 | [NA] | [NA] | [NA] |
| Lead | mg/kg | 24 | 31 | [NA] | [NA] | [NA] |
| Mercury | mg/kg | <0.1 | <0.1 | [NA] | [NA] | [NA] |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-16 | 71087-17 | 71087-18 | 71087-19 | 71087-20 |
| Your Reference | ---------- | D1 | E1 | E2 | E3 | E4 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Nickel | mg/kg | 17 | 3 | [NA] | [NA] | [NA] |
| Zinc | mg/kg | 130 | 130 | 380 | 350 | 190 |

| Acid Extractable metals in soil | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-21 | 71087-22 | 71087-23 | 71087-24 | 71087-25 |
| Your Reference | ---------- | E5 | F1 | F2 | F3 | F4 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Arsenic | mg/kg | [NA] | <4 | [NA] | [NA] | [NA] |
| Cadmium | mg/kg | [NA] | <0.5 | [NA] | [NA] | [NA] |
| Chromium | mg/kg | [NA] | 7 | [NA] | [NA] | [NA] |
| Copper | mg/kg | [NA] | 22 | [NA] | [NA] | [NA] |
| Lead | mg/kg | [NA] | 88 | [NA] | [NA] | [NA] |
| Mercury | mg/kg | [NA] | <0.1 | [NA] | [NA] | [NA] |
| Nickel | mg/kg | [NA] | 5 | [NA] | [NA] | [NA] |
| Zinc | mg/kg | 110 | 230 | 110 | 66 | 130 |

| Acid Extractable metals in soil | | | |
|---|---|---|---|
| Our Reference: | UNITS | 71087-26 | 71087-27 |
| Your Reference | ---------- | F5 | DUPLICATE BB |
| Depth | ---------- | 0.0-0.1 | -- |
| Date Sampled | | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil |
| Date digested | - | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 30/03/2012 | 30/03/2012 |
| Arsenic | mg/kg | [NA] | <4 |
| Cadmium | mg/kg | [NA] | <0.5 |
| Chromium | mg/kg | [NA] | 5 |
| Copper | mg/kg | [NA] | 14 |
| Lead | mg/kg | [NA] | 30 |
| Mercury | mg/kg | [NA] | <0.1 |
| Nickel | mg/kg | [NA] | 2 |
| Zinc | mg/kg | 78 | 130 |

| Miscellaneous Inorg - soil<br>Our Reference:<br>Your Reference<br><br>Depth<br>Date Sampled<br>Type of sample | UNITS<br>----------<br><br>---------- | 71087-10<br>B1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-16<br>D1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-17<br>E1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-22<br>F1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-27<br>DUPLICATE<br>BB<br><br>--<br>01/10/2011<br>Soil |
|---|---|---|---|---|---|---|
| Date prepared | - | 03/04/2012 | 03/04/2012 | 03/04/2012 | 03/04/2012 | 03/04/2012 |
| Date analysed | - | 03/04/2012 | 03/04/2012 | 03/04/2012 | 03/04/2012 | 03/04/2012 |
| pH 1:5 soil:water | pH Units | 5.7 | 6.5 | 5.9 | 6.5 | 6.6 |

**Client Reference: JT08499F**

| Moisture | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-1 | 71087-2 | 71087-3 | 71087-4 | 71087-5 |
| Your Reference | ---------- | A1 | A2 | A3 | A4 | A5 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 |
| Moisture | % | 8.5 | 14 | 9.4 | 8.9 | 9.2 |

| Moisture | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-6 | 71087-7 | 71087-8 | 71087-9 | 71087-10 |
| Your Reference | ---------- | A6 | A7 | A8 | A9 | B1 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 |
| Moisture | % | 8.7 | 9.5 | 6.7 | 7.0 | 15 |

| Moisture | | | | | | |
|---|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-11 | 71087-12 | 71087-13 | 71087-14 | 71087-15 |
| Your Reference | ---------- | C1 | C2 | C3 | C4 | C5 |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 |
| Moisture | % | 7.0 | 8.0 | 6.9 | 7.1 | 6.2 |

| Moisture | | | | | |
|---|---|---|---|---|---|
| Our Reference: | UNITS | 71087-16 | 71087-17 | 71087-22 | 71087-27 |
| Your Reference | ---------- | D1 | E1 | F1 | DUPLICATE BB |
| Depth | ---------- | 0.0-0.1 | 0.0-0.1 | 0.0-0.1 | -- |
| Date Sampled | | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date prepared | - | 30/03/2012 | 30/03/2012 | 30/03/2012 | 30/03/2012 |
| Date analysed | - | 02/04/2012 | 02/04/2012 | 02/04/2012 | 02/04/2012 |
| Moisture | % | 7.5 | 10 | 10 | 7.0 |

| Asbestos ID - soils<br>Our Reference:<br>Your Reference<br><br>Depth<br>Date Sampled<br>Type of sample | UNITS<br>----------<br><br>---------- | 71087-10<br>B1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-16<br>D1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-17<br>E1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-22<br>F1<br><br>0.0-0.1<br>01/10/2011<br>Soil | 71087-27<br>DUPLICATE<br>BB<br><br>--<br>01/10/2011<br>Soil |
|---|---|---|---|---|---|---|
| Date analysed | - | 04/04/2012 | 04/04/2012 | 04/04/2012 | 04/04/2012 | 04/04/2012 |
| Sample mass tested | g | Approx 40g | Approx 40g | Approx 40g | Approx 40g | Approx 40g |
| Sample Description | - | Brown coarse-grained soil | Brown coarse-grained soil | Brown coarse-grained soil | Brown coarse-grained soil | Brown coarse-grained soil |
| Asbestos ID in soil | - | No asbestos detected at reporting limit of 0.1g/kg | No asbestos detected at reporting limit of 0.1g/kg | No asbestos detected at reporting limit of 0.1g/kg | No asbestos detected at reporting limit of 0.1g/kg | No asbestos detected at reporting limit of 0.1g/kg |
| Trace Analysis | - | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected |

| Method ID | Methodology Summary |
|---|---|
| Org-016 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. |
| Org-003 | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. |
| Org-012 subset | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. |
| Org-005 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. |
| Org-006 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. |
| Metals-020 ICP-AES | Determination of various metals by ICP-AES. |
| Metals-021 CV-AAS | Determination of Mercury by Cold Vapour AAS. |
| Inorg-001 | pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+. |
| Inorg-008 | Moisture content determined by heating at 105 deg C for a minimum of 4 hours. |
| ASB-001 | Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004. |

**Client Reference: JT08499F**

| QUALITY CONTROL<br>vTRH & BTEX in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Date extracted | - | | | 30/03/2012 | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-6 | 30/03/2 |
| Date analysed | - | | | 31/03/2012 | 71087-10 | 31/03/2012 \|\| 31/03/2012 | LCS-6 | 31/03/2 |
| vTRH $C_6$ - $C_9$ | mg/kg | 25 | Org-016 | <25 | 71087-10 | <25 \|\| <25 | LCS-6 | 104% |
| Benzene | mg/kg | 0.2 | Org-016 | <0.2 | 71087-10 | <0.2 \|\| <0.2 | LCS-6 | 94% |
| Toluene | mg/kg | 0.5 | Org-016 | <0.5 | 71087-10 | <0.5 \|\| <0.5 | LCS-6 | 102% |
| Ethylbenzene | mg/kg | 1 | Org-016 | <1 | 71087-10 | <1 \|\| <1 | LCS-6 | 99% |
| m+p-xylene | mg/kg | 2 | Org-016 | <2 | 71087-10 | <2 \|\| <2 | LCS-6 | 112% |
| o-Xylene | mg/kg | 1 | Org-016 | <1 | 71087-10 | <1 \|\| <1 | LCS-6 | 111% |
| *Surrogate* aaa-Trifluorotoluene | % | | Org-016 | 117 | 71087-10 | 87 \|\| 115 \|\| RPD: 28 | LCS-6 | 114% |

| QUALITY CONTROL<br>sTRH in Soil (C10-C36) | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Date extracted | - | | | 30/03/2012 | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-6 | 30/03/2 |
| Date analysed | - | | | 31/03/2012 | 71087-10 | 31/03/2012 \|\| 31/03/2012 | LCS-6 | 31/03/2 |
| TRH $C_{10}$ - $C_{14}$ | mg/kg | 50 | Org-003 | <50 | 71087-10 | <50 \|\| <50 | LCS-6 | 90% |
| TRH $C_{15}$ - $C_{28}$ | mg/kg | 100 | Org-003 | <100 | 71087-10 | <100 \|\| <100 | LCS-6 | 110% |
| TRH $C_{29}$ - $C_{36}$ | mg/kg | 100 | Org-003 | <100 | 71087-10 | <100 \|\| <100 | LCS-6 | 98% |
| *Surrogate* o-Terphenyl | % | | Org-003 | 105 | 71087-10 | 98 \|\| 110 \|\| RPD: 12 | LCS-6 | 114% |

| QUALITY CONTROL<br>PAHs in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Date extracted | - | | | 30/03/2012 | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-6 | 30/03/2 |
| Date analysed | - | | | 31/03/2012 | 71087-10 | 31/03/2012 \|\| 31/03/2012 | LCS-6 | 31/03/2 |
| Naphthalene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 118% |
| Acenaphthylene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Acenaphthene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Fluorene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 114% |
| Phenanthrene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 109% |
| Anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Fluoranthene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 110% |
| Pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 107% |
| Benzo(a)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Chrysene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-6 | 122% |

**Client Reference: JT08499F**

| QUALITY CONTROL<br>PAHs in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Benzo(b+k)fluoranthene | mg/kg | 0.2 | Org-012 subset | <0.2 | 71087-10 | <0.2 \|\| <0.2 | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-012 subset | <0.05 | 71087-10 | <0.05 \|\| <0.05 | LCS-6 | 118% |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-012 subset | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| *Surrogate* p-Terphenyl-$d_{14}$ | % | | Org-012 subset | 82 | 71087-10 | 83 \|\| 85 \|\| RPD: 2 | LCS-6 | 90% |
| QUALITY CONTROL<br>Organochlorine Pesticides in soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
| Date extracted | - | | | 30/03/2012 | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-5 | 30/03/2 |
| Date analysed | - | | | 31/03/2012 | 71087-10 | 31/03/2012 \|\| 31/03/2012 | LCS-5 | 31/03/2 |
| HCB | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| alpha-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 105% |
| gamma-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| beta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 109% |
| Heptachlor | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 107% |
| delta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Aldrin | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 102% |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 111% |
| gamma-Chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| alpha-chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Endosulfan I | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| pp-DDE | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 101% |
| Dieldrin | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 118% |
| Endrin | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 108% |
| pp-DDD | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 107% |
| Endosulfan II | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| pp-DDT | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Endrin Aldehyde | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 111% |
| Methoxychlor | mg/kg | 0.1 | Org-005 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| *Surrogate* TCLMX | % | | Org-005 | 104 | 71087-10 | 98 \|\| 96 \|\| RPD: 2 | LCS-5 | 102% |

**Client Reference: JT08499F**

| QUALITY CONTROL<br>PCBs in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base \|\| Duplicate \|\| %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Date extracted | - | | | 30/03/2012 | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-5 | 30/03/2 |
| Date analysed | - | | | 31/03/2012 | 71087-10 | 31/03/2012 \|\| 31/03/2012 | LCS-5 | 31/03/2 |
| Arochlor 1016 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Arochlor 1221 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Arochlor 1232 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Arochlor 1242 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Arochlor 1248 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| Arochlor 1254 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | LCS-5 | 99% |
| Arochlor 1260 | mg/kg | 0.1 | Org-006 | <0.1 | 71087-10 | <0.1 \|\| <0.1 | [NR] | [NR] |
| *Surrogate* TCLMX | % | | Org-006 | 104 | 71087-10 | 98 \|\| 96 \|\| RPD: 2 | LCS-5 | 105% |
| QUALITY CONTROL<br>Acid Extractable metals in soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base \|\| Duplicate \|\| %RPD | Spike Sm# | Spike % Recovery |
| Date digested | - | | | [NT] | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-1 | 30/03/2 |
| Date analysed | - | | | [NT] | 71087-10 | 30/03/2012 \|\| 30/03/2012 | LCS-1 | 30/03/2 |
| Arsenic | mg/kg | 4 | Metals-020 ICP-AES | <4 | 71087-10 | <4 \|\| <4 | LCS-1 | 95% |
| Cadmium | mg/kg | 0.5 | Metals-020 ICP-AES | <0.5 | 71087-10 | <0.5 \|\| <0.5 | LCS-1 | 98% |
| Chromium | mg/kg | 1 | Metals-020 ICP-AES | <1 | 71087-10 | 6 \|\| 4 \|\| RPD: 40 | LCS-1 | 99% |
| Copper | mg/kg | 1 | Metals-020 ICP-AES | <1 | 71087-10 | 14 \|\| 17 \|\| RPD: 19 | LCS-1 | 101% |
| Lead | mg/kg | 1 | Metals-020 ICP-AES | <1 | 71087-10 | 31 \|\| 42 \|\| RPD: 30 | LCS-1 | 99% |
| Mercury | mg/kg | 0.1 | Metals-021 CV-AAS | <0.1 | 71087-10 | 0.1 \|\| <0.1 | LCS-1 | 113% |
| Nickel | mg/kg | 1 | Metals-020 ICP-AES | <1 | 71087-10 | 5 \|\| 2 \|\| RPD: 86 | LCS-1 | 98% |
| Zinc | mg/kg | 1 | Metals-020 ICP-AES | <1 | 71087-10 | 550 \|\| 540 \|\| RPD: 2 | LCS-1 | 99% |

**Client Reference: JT08499F**

| QUALITY CONTROL<br>Miscellaneous Inorg - soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|---|---|---|
| Date prepared | - | | | [NT] | 71087-10 | 03/04/2012 II 03/04/2012 | LCS-1 | 03/04/2 |
| Date analysed | - | | | [NT] | 71087-10 | 03/04/2012 II 03/04/2012 | LCS-1 | 03/04/2 |
| pH 1:5 soil:water | pH Units | | Inorg-001 | [NT] | 71087-10 | 5.7 II 5.7 II RPD: 0 | LCS-1 | 102% |

| QUALITY CONTROL<br>Moisture | UNITS | PQL | METHOD | Blank |
|---|---|---|---|---|
| Date prepared | - | | | [NT] |
| Date analysed | - | | | [NT] |
| Moisture | % | 0.1 | Inorg-008 | [NT] |

| QUALITY CONTROL<br>Asbestos ID - soils | UNITS | PQL | METHOD | Blank |
|---|---|---|---|---|
| Date analysed | - | | | [NT] |

| QUALITY CONTROL<br>vTRH & BTEX in Soil | UNITS | Dup. Sm# | Duplicate<br>Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|
| Date extracted | - | [NT] | [NT] | 71087-16 | 30/03/2012 |
| Date analysed | - | [NT] | [NT] | 71087-16 | 31/03/2012 |
| vTRH$C_6$ - $C_9$ | mg/kg | [NT] | [NT] | 71087-16 | 94% |
| Benzene | mg/kg | [NT] | [NT] | 71087-16 | 85% |
| Toluene | mg/kg | [NT] | [NT] | 71087-16 | 92% |
| Ethylbenzene | mg/kg | [NT] | [NT] | 71087-16 | 89% |
| m+p-xylene | mg/kg | [NT] | [NT] | 71087-16 | 102% |
| o-Xylene | mg/kg | [NT] | [NT] | 71087-16 | 101% |
| *Surrogate* aaa-Trifluorotoluene | % | [NT] | [NT] | 71087-16 | 111% |

| QUALITY CONTROL<br>sTRH in Soil (C10-C36) | UNITS | Dup. Sm# | Duplicate<br>Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|
| Date extracted | - | [NT] | [NT] | 71087-16 | 30/03/2012 |
| Date analysed | - | [NT] | [NT] | 71087-16 | 31/03/2012 |
| TRH$C_{10}$ - $C_{14}$ | mg/kg | [NT] | [NT] | 71087-16 | 90% |
| TRH$C_{15}$ - $C_{28}$ | mg/kg | [NT] | [NT] | 71087-16 | 109% |
| TRH$C_{29}$ - $C_{36}$ | mg/kg | [NT] | [NT] | 71087-16 | 97% |
| *Surrogate* o-Terphenyl | % | [NT] | [NT] | 71087-16 | 117% |

| QUALITY CONTROL<br>PAHs in Soil | UNITS | Dup. Sm# | Duplicate<br>Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|
| Date extracted | - | [NT] | [NT] | 71087-16 | 30/03/2012 |
| Date analysed | - | [NT] | [NT] | 71087-16 | 31/03/2012 |
| Naphthalene | mg/kg | [NT] | [NT] | 71087-16 | 118% |
| Acenaphthylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Acenaphthene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Fluorene | mg/kg | [NT] | [NT] | 71087-16 | 110% |
| Phenanthrene | mg/kg | [NT] | [NT] | 71087-16 | 105% |
| Anthracene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Fluoranthene | mg/kg | [NT] | [NT] | 71087-16 | 104% |

**Client Reference: JT08499F**

| QUALITY CONTROL PAHs in Soil | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|
| Pyrene | mg/kg | [NT] | [NT] | 71087-16 | 101% |
| Benzo(a)anthracene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Chrysene | mg/kg | [NT] | [NT] | 71087-16 | 116% |
| Benzo(b+k)fluoranthene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | [NT] | [NT] | 71087-16 | 111% |
| Indeno(1,2,3-c,d)pyrene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Dibenzo(a,h)anthracene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Benzo(g,h,i)perylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| *Surrogate p*-Terphenyl-$d_{14}$ | % | [NT] | [NT] | 71087-16 | 87% |
| QUALITY CONTROL Acid Extractable metals in soil | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
| Date digested | - | 71087-23 | 30/03/2012 \|\| 30/03/2012 | LCS-2 | 30/03/2012 |
| Date analysed | - | 71087-23 | 30/03/2012 \|\| 30/03/2012 | LCS-2 | 30/03/2012 |
| Arsenic | mg/kg | [NT] | [NT] | LCS-2 | 101% |
| Cadmium | mg/kg | [NT] | [NT] | LCS-2 | 104% |
| Chromium | mg/kg | [NT] | [NT] | LCS-2 | 104% |
| Copper | mg/kg | [NT] | [NT] | LCS-2 | 104% |
| Lead | mg/kg | [NT] | [NT] | LCS-2 | 104% |
| Mercury | mg/kg | [NT] | [NT] | LCS-2 | 98% |
| Nickel | mg/kg | [NT] | [NT] | LCS-2 | 104% |
| Zinc | mg/kg | 71087-23 | 110 \|\| 110 \|\| RPD: 0 | LCS-2 | 103% |
| QUALITY CONTROL Acid Extractable metals in soil | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
| Date digested | - | [NT] | [NT] | 71087-16 | 30/03/2012 |
| Date analysed | - | [NT] | [NT] | 71087-16 | 30/03/2012 |
| Arsenic | mg/kg | [NT] | [NT] | 71087-16 | 102% |
| Cadmium | mg/kg | [NT] | [NT] | 71087-16 | 98% |
| Chromium | mg/kg | [NT] | [NT] | 71087-16 | 83% |
| Copper | mg/kg | [NT] | [NT] | 71087-16 | 100% |
| Lead | mg/kg | [NT] | [NT] | 71087-16 | 106% |
| Mercury | mg/kg | [NT] | [NT] | 71087-16 | 114% |
| Nickel | mg/kg | [NT] | [NT] | 71087-16 | 76% |
| Zinc | mg/kg | [NT] | [NT] | 71087-16 | 110% |

**Client Reference: JT08499F**

| QUALITY CONTROL Acid Extractable metals in soil | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
|---|---|---|---|---|---|
| Date digested | - | [NT] | [NT] | 71087-24 | 30/03/2012 |
| Date analysed | - | [NT] | [NT] | 71087-24 | 30/03/2012 |
| Arsenic | mg/kg | [NT] | [NT] | 71087-24 | 102% |
| Cadmium | mg/kg | [NT] | [NT] | 71087-24 | 100% |
| Chromium | mg/kg | [NT] | [NT] | 71087-24 | 105% |
| Copper | mg/kg | [NT] | [NT] | 71087-24 | 109% |
| Lead | mg/kg | [NT] | [NT] | 71087-24 | 108% |
| Mercury | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Nickel | mg/kg | [NT] | [NT] | 71087-24 | 103% |
| Zinc | mg/kg | [NT] | [NT] | 71087-24 | 125% |

**Report Comments:**

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

| | |
|---|---|
| Asbestos ID was analysed by Approved Identifier: | Paul Ching |
| Asbestos ID was authorised by Approved Signatory: | Paul Ching |

| | | |
|---|---|---|
| INS: Insufficient sample for this test | PQL: Practical Quantitation Limit | NT: Not tested |
| NA: Test not required | RPD: Relative Percent Difference | NA: Test not required |
| <: Less than | >: Greater than | LCS: Laboratory Control Sample |

**Quality Control Definitions**

**Blank**: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

**Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

**Matrix Spike** : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

**LCS (Laboratory Control Sample)** : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

**Surrogate Spike:** Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

**Laboratory Acceptance Criteria**

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

**Envirolab Services Pty Ltd**
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

# SAMPLE RECEIPT ADVICE

**Client:**

Geoenviro Consultancy Pty Ltd
PO Box 1543, Macquarie Centre
North Ryde NSW 2113

ph: 9679 8733
Fax: 9679 8744

Attention: Solern Liew

**Sample log in details:**

| | |
|---|---|
| Your reference: | **JT08499F** |
| Envirolab Reference: | **71087** |
| Date received: | 28/03/12 |
| Date results expected to be reported: | **5/04/12** |

| | |
|---|---|
| Samples received in appropriate condition for analysis: | YES |
| No. of samples provided | 27 soils |
| Turnaround time requested: | Standard |
| Temperature on receipt | Cool |
| Cooling Method: | Ice |
| Sampling Date Provided: | Yes |

**Comments:**

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

**Contact details:**

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

**GeoEnviro Consultancy Pty Ltd**
Unit 5, 39-41 Fourth Avenue, Blacktown NSW 2148, Australia
Tel: (02) 96798733 Fax: (02) 96798744



# Laboratory Test Request/Chain of Custody Record

**Job Details**
Job Number: JT08499F
Client:
Project: Proposed Residential Subdivision Development
Location: Stage 8 - Macpherson Street, Warriwood

Sample Date: 26/03/2012
Sampled By: SG
Project Manager: SL
Store Location:

**External Laboratory Details:**
Laboratory name: Envirolab Services Pty Ltd
Address: 12 Ashley Street
Chatswood
Contact: Tania Notaris

| Sampling Details | | | Sample Type | | Test Required (\) / Test Performed(X) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Depth (m) | | Soil | Water | | Zn | | Combination 5a | Combination 12 | | | pH | EC | CEC/ESP | Cl / SO4 | Resistivity | | | | | | | | | | | Keep Sample |
| | From | To | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A2 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A3 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A4 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A5 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A6 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A7 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A8 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| A9 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| B1 | 0.00 | 0.10 | DG | | | | | / | | | | / | | | | | | | | | | | | | | | |
| C1 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| C2 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| C3 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| C4 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| C5 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| D1 | 0.00 | 0.10 | DG | | | | | / | | | | / | | | | | | | | | | | | | | | |

| Relinquished by | | | | Received By | | | |
|---|---|---|---|---|---|---|---|
| Laboratory | Name | Signature | Date | Laboratory | Name | Signature | Date |
| GeoEnviro Consultancy | Steven Goss | SMGoss | 27/03/2012 | | | | |
| | | | | | | | |
| | | | | | | | |

Legend
DB Disturbed Sample (Bulk, Plastic bag)
DS Disturbed Sample (Small, Plastic bag)
DG Disturbed Sample (Glass Jar)
STP Standard Penetration Test Sample
U50 Undisturbed Sample, 50mm Tube
U75 Undisturbed Sample, 75mm Tube
WG Water Sample, Amber Glass Jar
WP Water Sample, Plastic Bottle
Y Keep Sample
N Discard Sample

*GeoEnviro Consultancy Pty Ltd*
Unit 5, 39-41 Fourth Avenue, Blacktown NSW 2148, Australia
Tel: (02) 96798733 Fax: (02) 96798744



# Laboratory Test Request/Chain of Custody Record

**Job Details**
Job Number: JT08499F
Client:
Project: Proposed Residential Subdivision Development
Location: Stage 8 - Macpherson Street, Warriwood

Sample Date: 26/03/2012
Sampled By: SG
Project Manager: SL
Store Location:

**External Laboratory Details:**
Laboratory name: Envirolab Services Pty Ltd
Address: 12 Ashley Street
Chatswood
Contact: Tania Notaris

| Sampling Details | | | Sample Type | | Test Required (\) / Test Performed(X) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Depth (m) | | Soil | Water | | Zn | | Combination 5a | Combination 12 | | | pH | EC | CEC/ESP | Cl / SO4 | Resistivity | | | | | | | | | | | Keep Sample |
| | From | To | | | | | | | | | | | | | | | | | | | | | | | | | |
| E1 | 0.00 | 0.10 | DG | | | | | / | | | | / | | | | | | | | | | | | | | | |
| E2 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| E3 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| E4 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| E5 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| F1 | 0.00 | 0.10 | DG | | | | | / | | | | / | | | | | | | | | | | | | | | |
| F2 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| F3 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| F4 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| F5 | 0.00 | 0.10 | DG | | | / | | | | | | | | | | | | | | | | | | | | | |
| Duplicate BB | - | - | DG | | | | | / | | | | / | | | | | | | | | | | | | | | |
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| Relinquished by | | | | Received By | | | |
|---|---|---|---|---|---|---|---|
| Laboratory | Name | Signature | Date | Laboratory | Name | Signature | Date |
| GeoEnviro Consultancy | Steven Goss | SMGoss | 27/03/2012 | | | | |
| | | | | | | | |
| | | | | | | | |

Legend

DB Disturbed Sample (Bulk, Plastic bag)
DS Disturbed Sample (Small, Plastic bag)
DG Disturbed Sample (Glass Jar)
STP Standard Penetration Test Sample
U50 Undisturbed Sample, 50mm Tube
U75 Undisturbed Sample, 75mm Tube
WG Water Sample, Amber Glass Jar
WP Water Sample, Plastic Bottle
Y Keep Sample
N Discard Sample

*GeoEnviro Consultancy Pty Ltd*

# IMPORTANT INFORMATION REGARDING YOUR ENVIRONMENTAL SITE ASSESSMENT

These notes have been prepared by GeoEnviro Consultancy Pty Ltd, using guidelines prepared by ASFE. The Association of Engineering Firms Practising in the Geosciences. The notes are offered as an aid in the interpretation of your environmental site assessment report.

## REASONS FOR AN ENVIRONMENTAL SITE ASSESSMENT

Environmental site assessments are typically, though not exclusively, performed in the following circumstances:

- As a pre- acquisition assessment on behalf of either a purchaser or a vendor, when a property is to be sold
- As a pre-development assessment, when a property or area of land is to be redeveloped, or the land use has change, eg from a factory to a residential subdivision
- As a pre-development assessment of greenfield sites, to establish baseline conditions and assess environmental, geological and hydrological constraints to the development of, eg, a landfill
- As an audit of the environmental effects of previous and present site usage

Each circumstance requires a specific approach to the assessment of soil and groundwater contamination. In all cases the objective is to identify and if possible, quantify the risks which unrecognised contamination poses to the ongoing or proposed activity. Such risk may be both financial (clean-up costs or limitations in site use) and physical (health risks to site users or the public).

## ENVIRONMENTAL SITE ASSESSMENT LIMITATIONS

Although information provided by an environmental site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination within a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which did not show signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur, only the most likely contaminants are screened.

## AN ENVIRONMANTAL SITE ASSESSMENT REPORT IS BASED ON A UNIQUE SET OF PROJECT SPECIFIC FACTORS

Your environmental assessment report should not be used;

- When the nature of the proposed development is changed, eg, if a residential development is proposed, rather than a commercial development

- When the size or configuration of the proposed development is altered, eg, if a basement is added

- When the location or orientation of the proposed structure is modified
- When there is a change of land ownership, or
- For application to an adjacent site

In order to avoid costly problems, you should ask your consultant to assess any changes in the project since the assessment and the implications, if any, to recommendations made in the assessment.

## ENVIRONMENTAL SITE ASSESSMENT FINDINGS ARE PROFESSIONAL ESTIMATES

Site assessment identifies actual sub-surface conditions only at those points where samples are taken, when they are taken. Data obtained from the sampling and subsequent laboratory analyses are interpreted by geologists, engineers or scientist and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on any proposed development and appropriate remediation measures. Actual conditions may differ from those inferred, because no professional, no matter how qualified and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, however, steps can be taken to help minimise the impact. For this reason, site owner should retain the services of their consultants throughout the development stage of the project in order to identify variances, conduct additional tests which may be necessary and to recommend solutions to problems encountered on site.

Soil and groundwater contamination is a field in which legislation and interpretation of legislation by government departments is changing rapidly. Whilst every attempt is made by GeoEnviro Consultancy Pty Ltd to be familiar with current policy, our interpretation of the investigation findings should not be taken to be that of the relevant authority. When approval from a statutory authority is required for a project, that approval should be directly sought.

## STABILITY OF SUB-SURFACE CONDITIONS

Sub-surface conditions can change by natural processes and site activities. As an environmental site assessment is based on conditions existing at the time of the investigation, project decisions should not be based on environmental site assessment data which may have been affected by time. The consultant should be requested to advise if additional tests are required.

## ENVIRONMENTAL SITE ASSESSMENTS ARE PERFORMED FOR SPECIFIC PURPOSES AND CLIENTS

Environmental site assessments are prepared in response to a specific scope of work required to meet the specific needs or specific individuals. An assessment prepared for a consulting civil engineer may not be adequate to a construction contractor or another civil engineer.

An assessment should not be used by other persons for any purpose, or by the client for a different purposes. No individual, other than the client, should apply an assessment, even for its intended purposes, without first conferring with the consultant. No person should apply an assessment for any purposes other than that originally contemplated, without first conferring with the consultant.

## MISINTERPRETATION OF ENVIRONMENTAL SITE ASSESSMENTS

Costly problems can occur when design professionals develop plans based on misinterpretation of an environmental site assessment. In order to minimise problems, the environmental consultant should be retained to work with appropriate design professionals, to explain relevant findings and to review the adequacy of plans and specifications relative to contamination issues.

## LOGS SHOULD NOT BE SEPARATED FORM THE REPORT

Borehole and test pit logs are prepared by environmental scientists, engineers or geologist, based upon interpretation of field conditions and laboratory evaluation of field samples. Field logs normally provided in our reports and these should not be redrawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however, contractors can still misinterpret the logs during bid preparation if separated from the test of the assessment. Should this occur, delays and disputes , or unanticipated costs may result.

To reduce the likelihood of boreholes and test pit logs misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of sub-surface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations, such as contractors.

## READ RESPONSIBILITY CLAUSES CLOSELY

An environmental site assessment is based extensively on judgement and opinion, therefore, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claim being lodged against consultants. In order to aid in prevention of this problem, model clauses have been developed for use in written transmittals. These are definitive clauses, designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment and you are encouraged to read them closely. Your consultant will be happy to give full and frank answers to any questions you may have.

Civil Cert

WARRIEWOOD PROPERTIES

# WARRIEWOOD VALLEY
# 23B MACPHERSON STREET

## Water Management Report
## Subdivision Certificate Stage

**Issue No. 1**
**NOVEMBER 2015**

Civil Cert

## WARRIEWOOD PROPERTIES

# Warriewood Valley
# 23B Macpherson Street

# Water Management Report
# Subdivision Certificate Stage

## Issue No. 1
## NOVEMBER 2015

Document Amendment and Approval Record

| Issue | Description of Amendment | Prepared by [date] | Verified by [date] | Approved by [date] |
|---|---|---|---|---|
| 1 | SubDiv WMR | Mike Shaw | Mike Shaw | Mike Shaw |

Note: This document is preliminary unless it is approved by a principal of Civil Certification Pty Ltd.

Document Reference: **003 - civ cert -mjs -12-10-15 23B Macphers S8 subdiv wmr (v1 final).doc**
Time and Date Printed: 30/11/2015 1:32 PM

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# 1 INTRODUCTION

This report is the "*Sub-Division Certificate Issue*" Water Management Report (*WMR*) for 23B Macpherson Street, Warriewood Valley.

It follows on from the "*Construction Certificate (CC) Issue*" Water Management Report (*Civil Certification dated Jan 2014*), detailing additional information gathered during the construction phase and where necessary recalibration of previously developed models.

Pittwater Council's "*Warriewood Valley Urban Release Water Management Specification*" (*WMS*), Feb 2001 has been utilised as the guiding document for preparation of this report.

A completed copy of the "*Sub-division Certificate Stage Documentation Checklist*", confirming that all tasks stipulated in Council's WMS have been undertaken is included at **Appendix A**.

Note that this report covers all the major water management measures constructed on the subject site (*ie bio-retention systems, raingardens, below ground detention tank and GPT*) as well as the creekline rehabilitation works.

This report has been prepared to meet the requirements of Condition E13 (*DA N0085/11/S96/5*).

## 1.1 CERTIFICATION

The contents of this report are certified by Michael Shaw, who is a registered NPER engineer with the Institution of Engineers, to comply with the requirements of Pittwater Council's WMS (*February 2001*).

# 2 DESCRIPTION OF ONSITE STORMWATER QUALITY/QUANTITY CONTROL MEASURES

## 2.1 STORMWATER QUALITY CONTROL

The objective of the stormwater quality control strategy for 23B Macpherson Street is to ensure no net increase in the pollutant load discharged from the developed site compared to pre development conditions.

Site generated runoff is treated by a suite of measures starting at its source and extending to the outlet. These measures include:

- Lot based rainwater tanks and associated reuse;
- Lot based raingardens;
- Three creekside community based bio retention basins;
- A Creekside infiltration trench; and
- A Below ground GPT.

The above treatment train is predicted to result in a significant improvement in runoff water quality beyond Council's minimum requirements. MUSIC Modelling has been undertaken to demonstrate this result.

Details of all stormwater quality control devices are included in the construction Drawings by Craig and Rhodes. A detailed description of their role in the reduction of pollutant loads generated by the site is described in the "*Construction Certificate (CC) Issue - Water Management Report*" (*Civil Certification dated Jan 2014).*

## 2.2 STORMWATER QUANTITY CONTROL

The objective of the stormwater quantity control strategy for 23B Macpherson Street is to ensure no increase in peak flows discharged from the developed site compared to pre development conditions.

Site generated runoff is treated by a suite of measures starting at its source and extending to the outlet. These measures include:

- Lot based rainwater tanks and associated reuse;
- Lot based raingardens;
- Three creekside community based bio retention basins;

- A shallow above ground storage volume (*active in 20-100yr ARI events only*) between the edge of the shared path and the creekside road (Road No. 1); and
- A community based Onsite Detention Tank (*255m$^3$*) Located beneath Road 3

The total stormwater detention volume provided for the site is 466m$^3$. Hence, stormwater detention storage is proposed at a rate of 402m$^3$/ha (*based on a developable area of 1.159ha*). The proposed storage meets the detention rate of 400m3/ha stipulated in Council's WMS.

RAFTS modelling was used to assess the hydrology of the site under both pre and post development scenarios for a range of storm events and durations. This modelling showed that the proposed detention measures are effective in ensuring peak runoff flow rates from the developed site do not exceed pre development values.

Details of all stormwater quantity control devices are included in the construction Drawings by Craig and Rhodes. A detailed description of their role in the reduction of peak flows is described in the "*Construction Certificate (CC) Issue - Water Management Report*" (*Civil Certification dated Jan 2014).*

# 3 DETAILS OF CONSTRUCTED WATER MANAGEMENT MEASURES

Details of the constructed water management facilities (*ie.Bio-Retention Basins, Rainwater Tanks, Raingardens, GPT and below ground detention tank*) are included in the Work as Executed (*WAE*) Drawings contained at **Appendix B**.

In summary they include the following:

- Lot based raingardens/rainwater tanks (*Lots 9-25*);
- The FNC rainwater tank (10KL);
- Bio retention Basins 1,2 and 3;
- GPT between Pits 7-1 and 7-2; and
- 255m$^3$ Belowground OSD tank (*Road 3*).

We confirm that all water management measures have been constructed in accordance with the approved design .

We also confirm that the half width creek rehabilitation works in Fern Creek along the site frontage have been completed in accordance with the approved design.

The works remaining are associated with the lots to the north of the site and include rainwater tanks/raingardens for future lots 26-38.

## 3.1 DESIGN AMENDMENTS

No significant design amendments are understood to have been required.

# 4 MANAGEMENT OF CONSTRUCTED WATER QUANTITY/QUALITY MEASURES

## 4.1 MOSQUITO RISK ASSESSMENT

The proposed treatment system has generally been constructed in accordance with the approved design.

This design ensures ponded water in the OSD tank, raingardens and bio-retention systems is retained for no more than 48 hours. Based on this and assuming regular maintenance is undertaken these areas are unlikely to provide additional breading habitat for mosquitoes.

The GPT will generally sustain a small volume of standing water, and thus may form a potential mosquito habitat. However, if maintained appropriately, this should not create any significant risks.

The proposed rainwater tanks may also pose a minimal risk for becoming mosquito breeding areas however again if they are adequately maintained with emphasis on the inlet screening to prevent pests from entering the device.

## 4.2 SAFETY

Following is a summary of the safety measures incorporated/recommended for the sites water quality/quantity control measures:

### 4.2.1 Bio-Retention Basins 1,2 and 3

- Generally dry in normal operating conditions;
- Less than 0.5m ponding above ground in frequent events; and
- Located in an area with good public surveillance.

### 4.2.2 GPT

- Restricted access for maintenance only.

### 4.2.3 Below Ground Detention Tank (Road 3)

- Restricted access for maintenance only.

### 4.2.4 Raingardens

- Front yard basins are less than 200mm deep during wet weather conditions only;
- Use of warning signage for rear yard raingardens where depths of greater than 200mm occur (*ie the rear yard raingardens are up to 400mm deep*).

### 4.2.5 Rainwater Tanks

- Restricted access.

## 4.3 MAINTENANCE

It is recommended that the following maintenance programme be implemented to ensure the required water quality/quantity objectives are maintained over the long term.

- Periodic *(3 monthly)* and episodic *(post storm greater than 1 yr ARI)* inspection and removal of trapped pollutants from the GPT;
- Periodic *(6 monthly)* inspection and removal of any gross pollutants that are deposited in the community bio retention basins and replacement of vegetation as necessary;
- Periodic (*annual*) inspection and removal of any gross pollutants that are deposited in the lot based raingardens and replacement of vegetation as necessary
- Periodic *(annual)* inspection (*and cleaning if required*) of the below ground detention tank/outlet screen;
- Annual safety assessment for all community and lot based water management systems;
- Periodic *(every 2 years)* flushing of the underdrain systems for bio-retention basins 1, 2 and 3; and
- Periodic *(every 5 years)* flushing of the underdrain systems for the lot based raingardens.

# 5 POST DEVELOPMENT FLOODING

This section contains a brief description of the flood management strategy for 23B Macpherson Street. Further details can be found in the January 2014 CC stage WMR by Civil Certification.

For the type of development proposed in this Sector, Pittwater Council has adopted the 100 year ARI event as the Flood Standard for Warriewood Valley in Council's WMS. This standard has been adopted for the purposes of recommendations made in this report.

The existing watercourse near the southern boundary of the proposed development (*ie Fern Creek*) has been designed to fully contain flood flows up to the 100 year ARI.

The design also ensures that all habitable floor levels are located at least 0.5m above the 100year ARI flood extent for this creek.

For emergency response planning purposes, evacuation routes are readily available for the proposed development via Macpherson Street to the Mater Maria. Vertical evacuation is also likely to be available to most dwellings as two storey construction is likely on most lots.

No flood notations (*FC1*) are applicable to the private lots within the proposed subdivision.

The PMF impacts on only Lot 40 to 48 hence an FC2 Section 149 Flood Notation will apply for these lots

# 6 MODELLING AND CALIBRATION

No significant changes have been made to the layout of the site, nor have there been any amendments within the stormwater management plan.

The constructed works are generally in accordance with the approved design.

As a result of this, no additional hydrologic and hydraulic modelling has been required.

# 7 REFERENCES

"*Warriewood Valley, 23B Macpherson Street (Part of Sector 8) Water Management Report Construction Certificate Stage*" Civil Certification, January 2014.

"*Warriewood Valley Urban Release Water Management Specification*", Pittwater Council, February 2001;

"*Floodplain Development Manual*", NSW Department of Infrastructure, Planning and Natural Resources, 2005;

"*Floodplain Risk Management Guidelines, Practical Consideration of Climate Change*", DECC, October 2007;

"*Draft Sea Level Rise Policy Statement* " Department of Planning, February 2000;

"*Warriewood Valley Flood Study Addendum 1*", Cardno Lawson and Treloar, July 2005;

"*Australian Rainfall and Runoff, a Guide to Flood Estimation*" Institution of Engineers, Australia;

# APPENDIX A - COUNCIL CHECKLIST

# DOCUMENTATION CHECKLIST - SUBDIVISION CERTIFICATE

(Detach and include with submissions)

| Section | Item | Requirement | Check (√) |
|---|---|---|---|
| 4.1 | Water Cycle Assessment - Water Balance Modelling Pre & Post Development | | |
| 4.1.1 | Stream Gauging, infiltration testing and use of local rainfall data for modelling | | |
| 4.2.1 | Water Quality Monitoring Plan | ♦♦♦♦♦♦♦♦ | √ |
| 4.2.1 | Water Quality Monitoring Sites Shown on Plan (at least three) | ♦♦♦♦♦♦♦♦ | √ |
| 4.2.1, 2, C | Water Quality Monitoring Data | ♦♦♦♦♦♦♦♦ | √ |
| 4.2.1, 2, C | Assessment and interpretation of water quality monitoring data | ♦♦♦♦♦♦♦♦ | √ |
| 4.2.1, 2, C | Assessment and interpretation of water quality monitoring data from SQID's | ♦♦♦♦♦♦♦♦ | √ |
| 4.3 | Water Quality Management Assessment - Load Modelling Pre and Post Development | | |
| 4.3.1, 3 | Justification of assumptions for Event Mean Concentrations | | |
| 4.3.2 | Identification of and details for Stormwater quality facilities | | √ |
| 4.3.2, 4.4.5 | Mosquito Risk Assessment for both Watercourse and Water Quality/Quantity features | ♦♦♦♦♦♦♦♦ | √ |
| 4.3.6, 4.6.5 | Inspection and Cleaning Reports for SQID's and OSD | | |
| 4.3.6 | Management Plan for Stormwater Quality Improvement Devices | ♦♦♦♦♦♦♦♦ | √ |
| 4.3.5 | Environmental Management Plan (Soil and Water Aspects) | ♦♦♦♦♦♦♦♦ | √ |
| 4.3.4 | Erosion and Sediment Control Plan | ♦♦♦♦♦♦♦♦ | √ |
| 4.4.3, 4, 5 | Existing and Proposed Creek Corridor in plan with cross/long sections with flood levels | Note 1 | √ |
| 4.4.4 | Proposed Creek Corridor Planting Schedule | Note 1 | √ |
| 4.4.5 | Creek Corridor Vegetation Monitoring and Management Plan | ♦♦Note 1♦♦ | √ |
| 4.4.5 | Vegetation and Creek Maintenance and Monitoring Reports | | |
| 4.5 | Flood Analysis – existing and design conditions | ♦♦♦♦♦♦♦♦ | √ |
| 4.5.2 | Compliance of structures and creek corridor with flood planning levels | | √ |
| 4.5.4 | Details of Interim Flood Protection Works | | √ |
| 4.6.3 | Design Storm Hydrological Modelling of Site - Pre and Post Development | ♦♦♦♦♦♦♦♦ | √ |
| 4.6.3 | On-Site Detention Facilities | | √ |
| 4.6.4 | Stormwater Retention Facilities | | √ |
| 4.7 | Stormwater Concept Drainage Plan | | |

*KEY:*

| | | | |
|---|---|---|---|
| | *Preliminary Calculations/Assessment Required* | | *Work as Executed Plans* |
| | *Concept Design Required* | ♦♦♦♦♦♦ | *Required/Reviewed/Updated* |
| +++++++ | *Detailed Assessment/Calculations/Design* | | *Not required* |

*Note 1 Even if the works are not to be constructed by the Applicant on the land to be transferred to Council under the Material Public Benefit Option in the Section 94 Plan, preliminary investigation for Rezoning and concept design at DA stage is required*

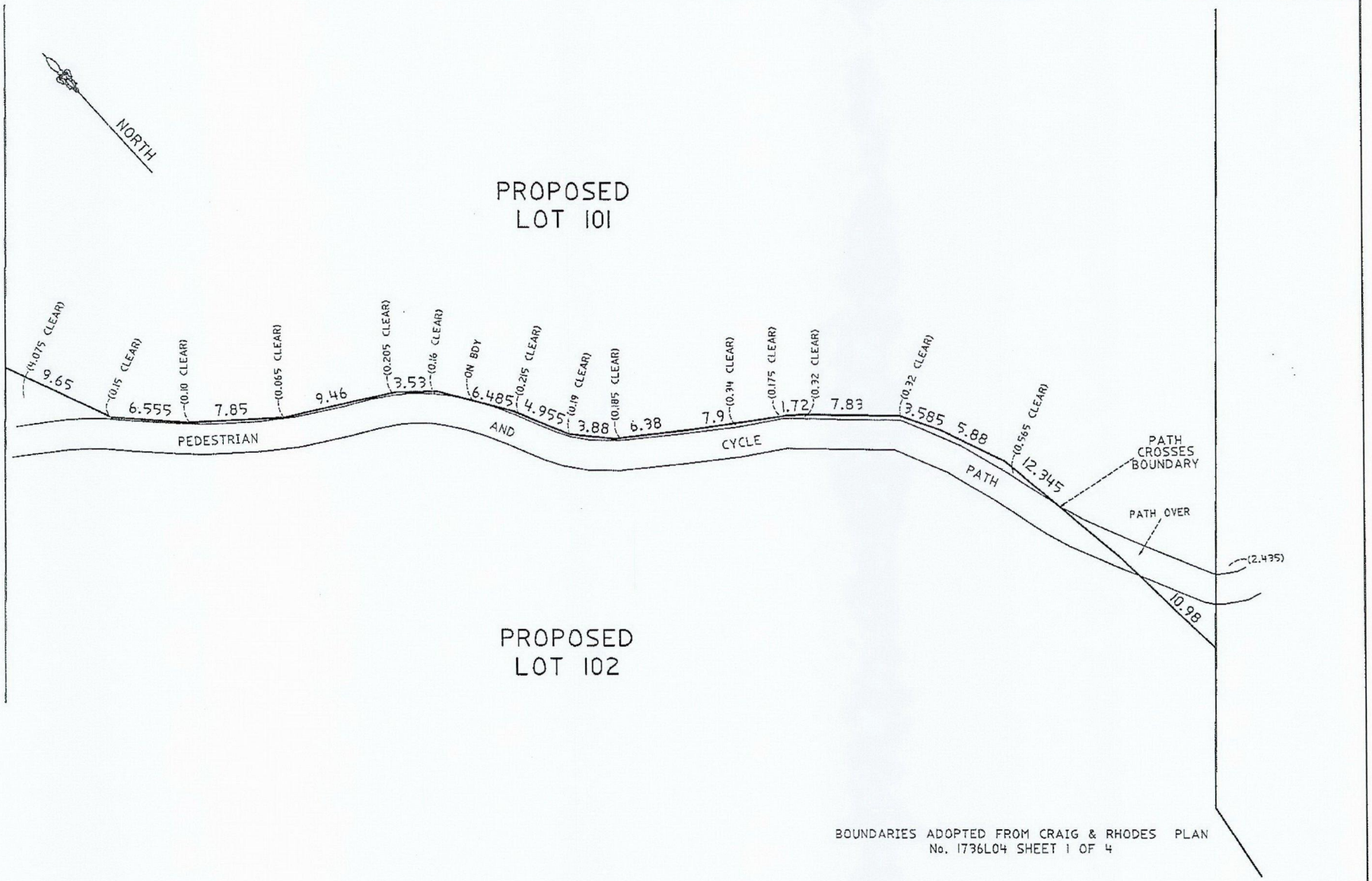
*Completed by Principal Certifier:*

Name: MICHAEL SHAW
Title: Director
Organisation: Civil Certification

Signature:
Date: 12/10/15.

# APPENDIX B - WAE

A3




| | | |
|---|---|---|
| 1 | FIRST ISSUE | 06/08/15 |

**CLIENT: KYORA LANDSCAPES PTY LIMITED**
**PLAN SHOWING AS BUILT SURVEY OF**
**PEDESTRIAN AND CYCLE PATH**
**FERN CREEK RECONSTRUCTION**
**GARDEN & MACPHERSON ST'S, WARRIEWOOD**


C.M.S. Surveyors Pty. Ltd.
A.C.N 096 240 201
PO Box 463 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Phone: (02) 9971 4802 Fax: (02) 9971 4822
E-mail: info@cmssurveyors.com.au


| SURVEYED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| TC | CJR | TC | DR |

| SURVEY INSTRUCTION | SCALE | DATE OF SURVEY |
|---|---|---|
| 6118B | 1:300 @ A3 | 29/07/15 |

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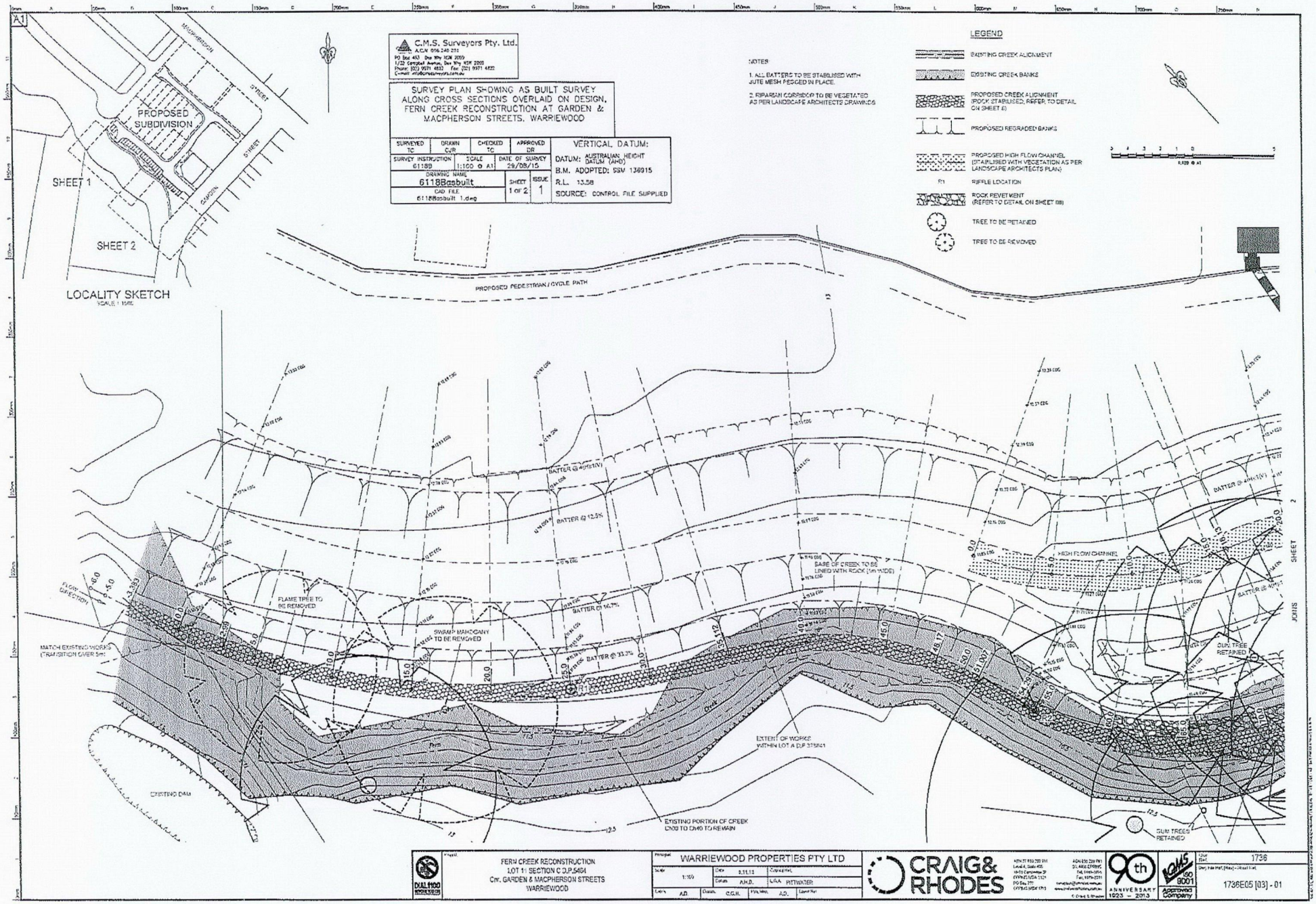
CAD FILE: 6118Basbuilt 2.dwg
ISSUE: 1



A1
C.M.S. Surveyors Pty. Ltd.
SURVEY PLAN SHOWING AS BUILT SURVEY ALONG CROSS SECTIONS OVERLAID ON DESIGN, FERN CREEK RECONSTRUCTION AT GARDEN & MACPHERSON STREETS, WARRIEWOOD
SURVEYED TC
DRAWN CVR
CHECKED TC
APPROVED DR
SURVEY INSTRUCTION 6118B
SCALE 1:100 @ A1
DATE OF SURVEY 29/08/15
DRAWING NAME 6118Basbuilt
CAD FILE 6118Basbuilt 1.dwg
SHEET 1 OF 2
ISSUE 1
VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
B.M. ADOPTED: SSM 136915
R.L. 13.58
SOURCE: CONTROL FILE SUPPLIED
NOTES:
1. ALL BATTERS TO BE STABILISED WITH JUTE MESH PEGGED IN PLACE.
2. RIPARIAN CORRIDOR TO BE VEGETATED AS PER LANDSCAPE ARCHITECTS DRAWINGS
LEGEND
EXISTING CREEK ALIGNMENT
EXISTING CREEK BANKS
PROPOSED CREEK ALIGNMENT (ROCK STABILISED, REFER TO DETAIL ON SHEET 8)
PROPOSED REGRADED BANKS
PROPOSED HIGH FLOW CHANNEL (STABILISED WITH VEGETATION AS PER LANDSCAPE ARCHITECTS PLAN)
R1 RIFFLE LOCATION
ROCK REVETMENT (REFER TO DETAIL ON SHEET 08)
TREE TO BE RETAINED
TREE TO BE REMOVED
PROPOSED SUBDIVISION
MACPHERSON STREET
GARDEN STREET
SHEET 1
SHEET 2
LOCALITY SKETCH
PROPOSED PEDESTRIAN / CYCLE PATH
BATTER @ 4(H):1(V)
BATTER @ 12.5%
BATTER @ 16.7%
BATTER @ 33.3%
BASE OF CREEK TO BE LINED WITH ROCK (1m WIDE)
HIGH FLOW CHANNEL
FLAME TREE TO BE REMOVED
SWAMP MAHOGANY TO BE REMOVED
FLOW DIRECTION
MATCH EXISTING WORKS (TRANSITION OVER 5m)
EXTENT OF WORKS WITHIN LOT A D.P. 375841
EXISTING DAM
EXISTING PORTION OF CREEK Ch00 TO Ch40 TO REMAIN
GUM TREE RETAINED
GUM TREES RETAINED
JONES
SHEET 2
DIAL 1100
FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD
WARRIEWOOD PROPERTIES PTY LTD
1:100
A.H.D.
PITWATER
A.D.
C.G.H.
A.D.
CRAIG & RHODES
90th ANNIVERSARY 1923 – 2013
ISO 9001 Approved Company
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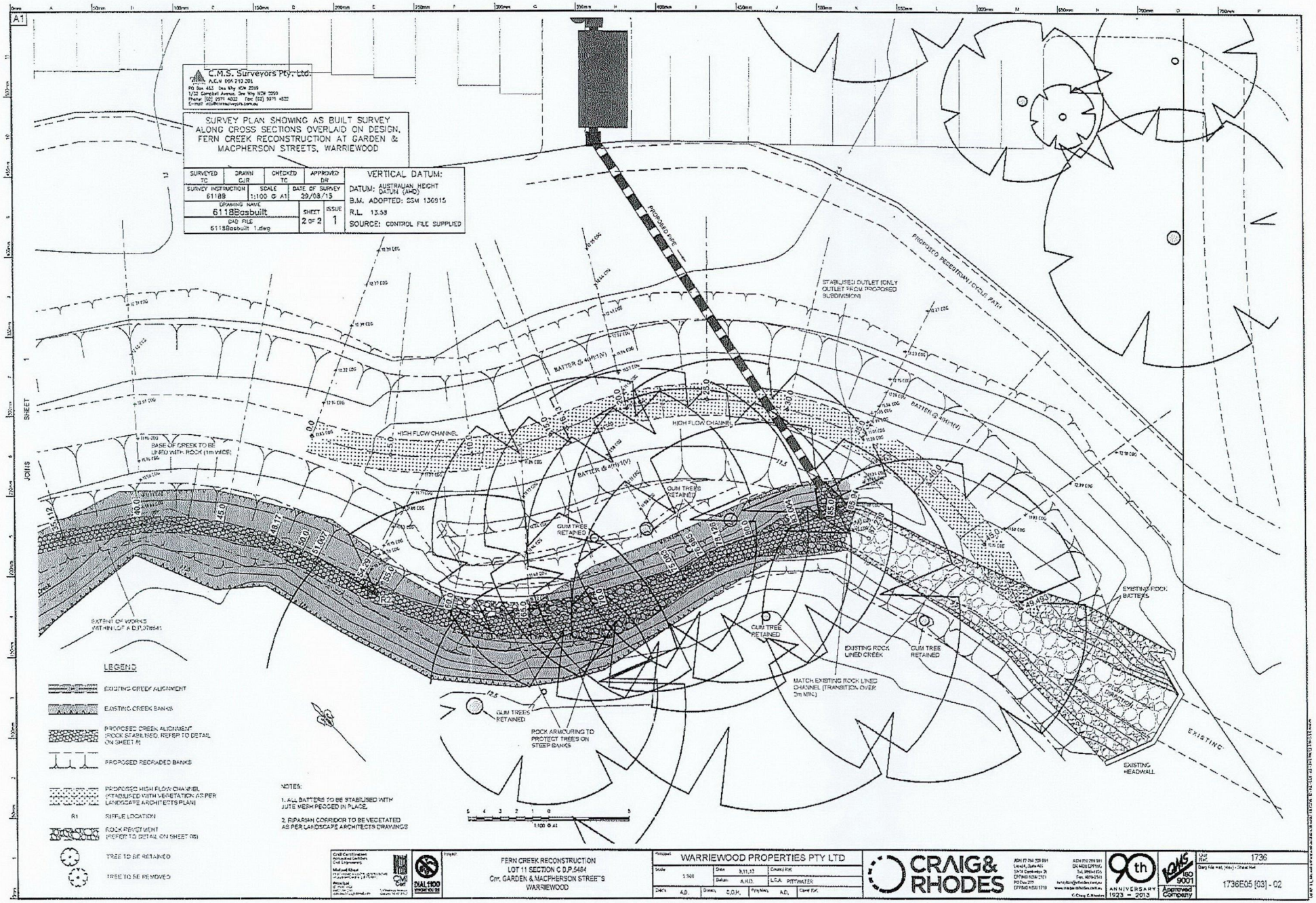
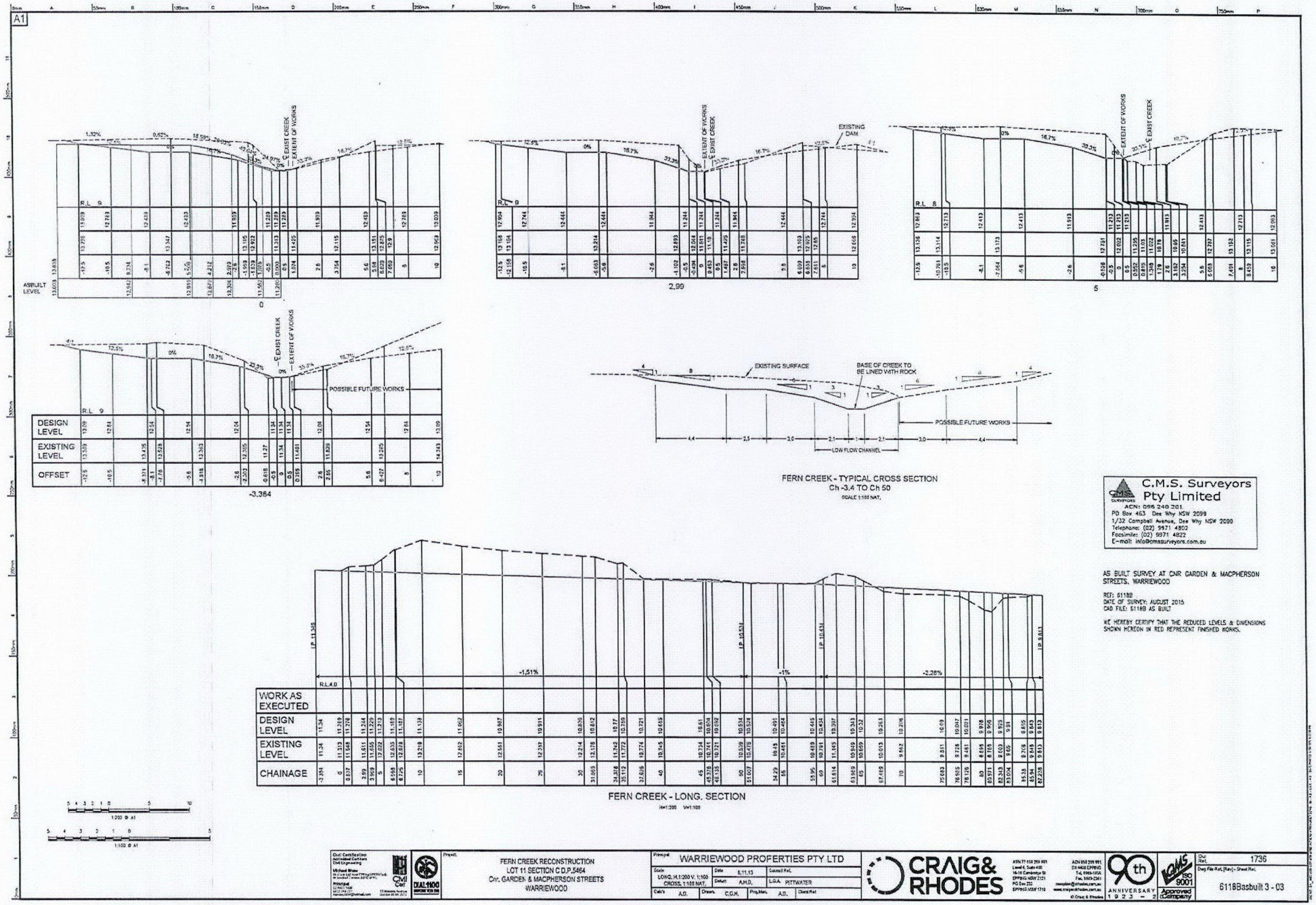


C.M.S. Surveyors Pty. Ltd.
SURVEY PLAN SHOWING AS BUILT SURVEY ALONG CROSS SECTIONS OVERLAID ON DESIGN, FERN CREEK RECONSTRUCTION AT GARDEN & MACPHERSON STREETS, WARRIEWOOD
SURVEYED TC
DRAWN CJR
CHECKED TC
APPROVED DR
SURVEY INSTRUCTION 6118B
SCALE 1:100 @ A1
DATE OF SURVEY 29/08/13
DRAWING NAME 6118Basbuilt
CAD FILE 6118Basbuilt 1.dwg
SHEET 2 OF 2
ISSUE 1
VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
B.M. ADOPTED: SSM 136915
R.L. 13.58
SOURCE: CONTROL FILE SUPPLIED
PROPOSED PIPE
PROPOSED PEDESTRIAN / CYCLE PATH
STABILISED OUTLET (ONLY OUTLET FROM PROPOSED SUBDIVISION)
BATTER @ 4(H):1(V)
HIGH FLOW CHANNEL
BASE OF CREEK TO BE LINED WITH ROCK (1m WIDE)
GUM TREES RETAINED
GUM TREE RETAINED
EXTENT OF WORKS WITHIN LOT A D.P.308641
EXISTING ROCK LINED CREEK
MATCH EXISTING ROCK LINED CHANNEL (TRANSITION OVER 3m MIN.)
ROCK ARMOURING TO PROTECT TREES ON STEEP BANKS
EXISTING ROCK BATTERS
EXISTING HEADWALL
EXISTING
LEGEND
EXISTING CREEK ALIGNMENT
EXISTING CREEK BANKS
PROPOSED CREEK ALIGNMENT (ROCK STABILISED, REFER TO DETAIL ON SHEET 8)
PROPOSED REGRADED BANKS
PROPOSED HIGH FLOW CHANNEL (STABILISED WITH VEGETATION AS PER LANDSCAPE ARCHITECTS PLAN)
R1 RIFFLE LOCATION
ROCK REVETMENT (REFER TO DETAIL ON SHEET 08)
TREE TO BE RETAINED
TREE TO BE REMOVED
NOTES:
1. ALL BATTERS TO BE STABILISED WITH JUTE MESH PEGGED IN PLACE.
2. RIPARIAN CORRIDOR TO BE VEGETATED AS PER LANDSCAPE ARCHITECTS DRAWINGS
1:100 @ A1
FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD
WARRIEWOOD PROPERTIES PTY LTD
CRAIG & RHODES
90th ANNIVERSARY 1923 - 2013
ISO 9001 Approved Company
1736
1736E05 [03] - 02




**C.M.S. Surveyors Pty Limited**
ACN: 096 240 201
PO Box 463 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Telephone: (02) 9971 4802
Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au

AS BUILT SURVEY AT CNR GARDEN & MACPHERSON STREETS, WARRIEWOOD

REF: 6118B
DATE OF SURVEY: AUGUST 2015
CAD FILE: 6118B AS BUILT

WE HEREBY CERTIFY THAT THE REDUCED LEVELS & DIMENSIONS SHOWN HEREON IN RED REPRESENT FINISHED WORKS.

Civil Certification
Accredited Certifiers
Civil Engineering
Michael Shaw
Principal
Civil Cert

DIAL 1100

Project: FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD

Principal: WARRIEWOOD PROPERTIES PTY LTD
Scale: LONG. H.1:200 V. 1:100 CROSS. 1:100 NAT.
Date: 8.11.13
Detail: A.H.D.
Council Ref.
L.G.A. PITTWATER
Calc's: A.D.
Drawn: C.G.H.
Proj.Mgr.: A.D.
Client Ref.

CRAIG & RHODES
ABN 71 650 299 901
Level 4, Suite 400
16-18 Cambridge St
EPPING NSW 2121
PO Box 232
EPPING NSW 1710
ACN 050 299 901
DX 4408 EPPING
Tel. 9869-1914
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reception@crhodes.com.au
www.craigandrhodes.com.au
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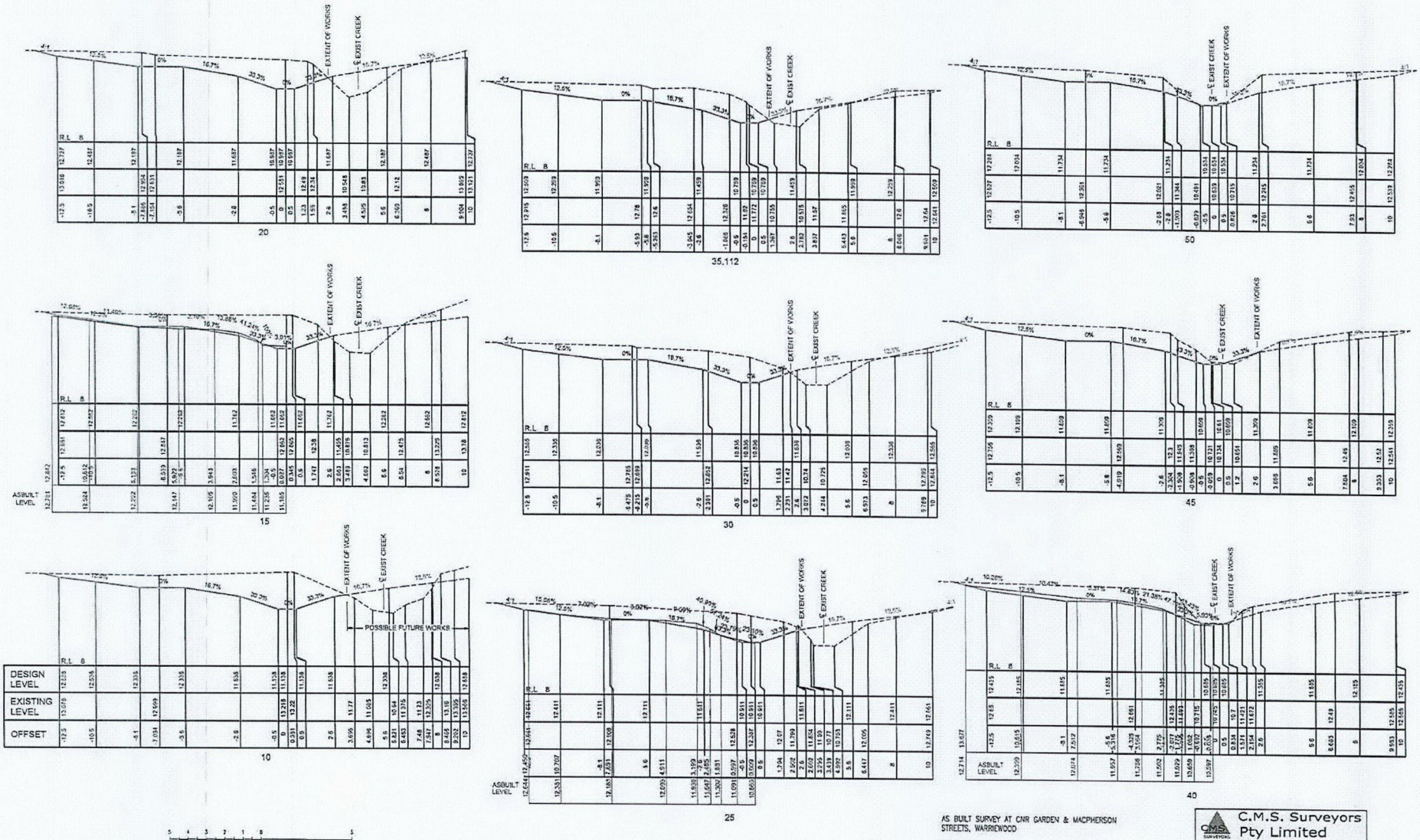
90th ANNIVERSARY 1923 - 2

KQMS ISO 9001 Approved Company

Our Ref. 1736
Dwg File Ref. [Rev] - Sheet Ref.
6118Basbuilt 3 - 03




AS BUILT SURVEY AT CNR GARDEN & MACPHERSON STREETS, WARRIEWOOD

REF: 6118B
DATE OF SURVEY: AUGUST 2015
CAD FILE: 6118B AS BUILT

WE HEREBY CERTIFY THAT THE REDUCED LEVELS & DIMENSIONS SHOWN HEREON IN RED REPRESENT FINISHED WORKS.

C.M.S. Surveyors Pty Limited
ACN: 096 240 201
PO Box 463 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Telephone: (02) 9971 4822
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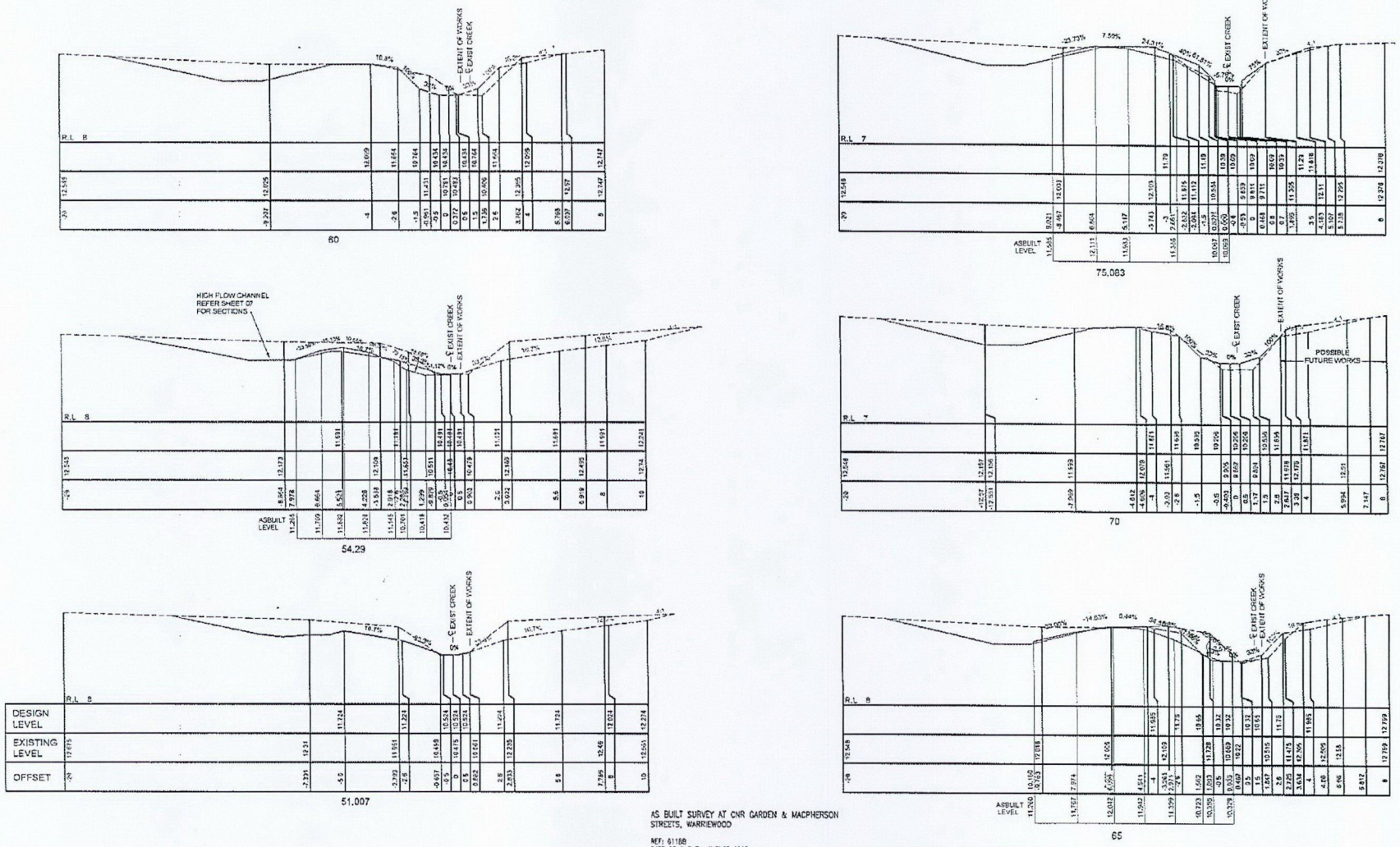
E-mail: info@cmssurveyors.com.au

FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD

Prepared: WARRIEWOOD PROPERTIES PTY LTD
Scale: 1:100 NAT.
Date: 6.11.15
Council Ref.:
Datum: A.H.D.
L.G.A.: PITTWATER
Cad's: A.D.
Drawn: C.G.H.
Proj.Man.: A.D.
Client Ref.:

CRAIG & RHODES

Our Ref.: 1736
Dwg File Ref. [Rev] - Sheet Ref.: 6118Basbuilt 3 - 04




AS BUILT SURVEY AT CNR GARDEN & MACPHERSON STREETS, WARRIEWOOD

REF: 6118B
DATE OF SURVEY: AUGUST 2015
CAD FILE: 6118B AS BUILT

WE HEREBY CERTIFY THAT THE REDUCED LEVELS & DIMENSIONS SHOWN HEREON IN RED REPRESENT FINISHED WORKS.


C.M.S. Surveyors Pty Limited
ACN: 096 240 201
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Telephone: (02) 9971 4802
Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au


Civil Certification Amended Certificate Civil Engineering
Michael Ruhr
Principal
Civil Cert
DIAL 1100 DIAL 1100 DIAL 1100

Project: FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD

Principal: WARRIEWOOD PROPERTIES PTY LTD

| | | | |
|---|---|---|---|
| Scale: 1:100 NAT. | Date: 8.11.13 | Council Ref. | |
| | Datum: A.H.D. | L.G.A. PITTWATER | |
| Calc'd: A.D. | Drawn: C.C.H. | Proj.Mgr.: A.D. | Client Ref. |

CRAIG & RHODES
ABN 77 050 234 991
Level 4, Suite 403
16-18 Cambridge St
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PO Box 237
EPPING NSW 1710
ACN 050 239 991
DX 4606 EPPING
Tel. 9868-1053
Fax. 9868-2341
mail@craigrhodes.com.au
www.craigrhodes.com.au
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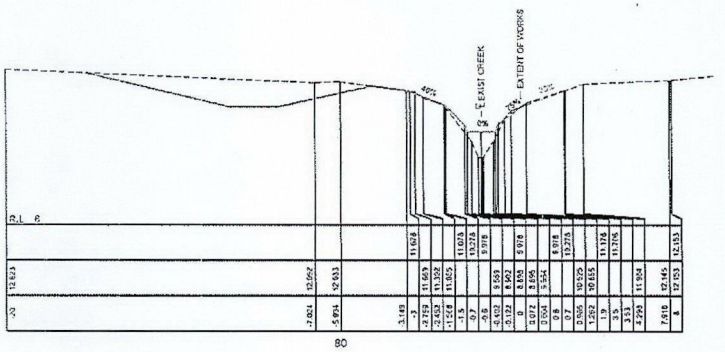
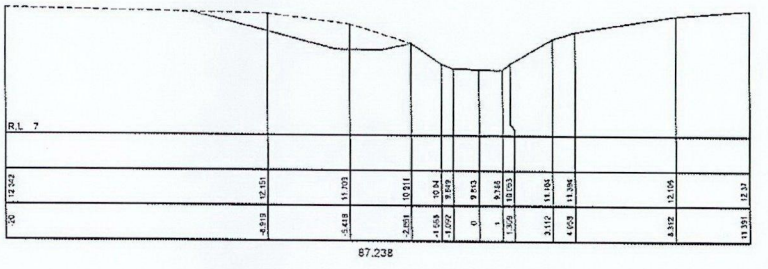
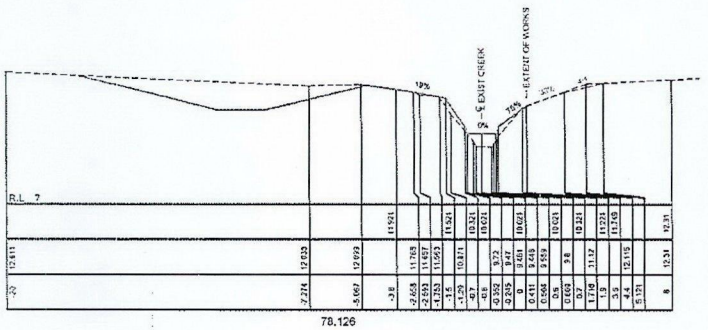
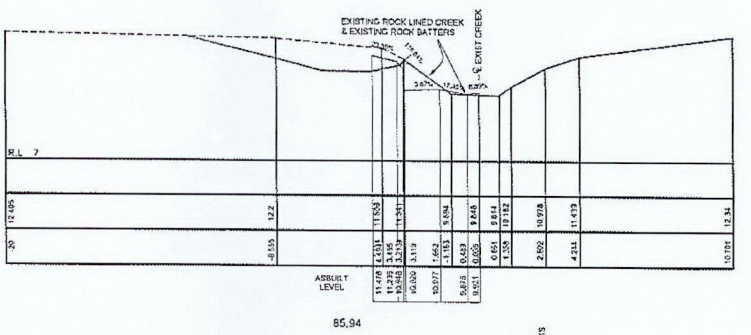
90th ANNIVERSARY 1923 - 2
KMS ISO 9001 Approved Company

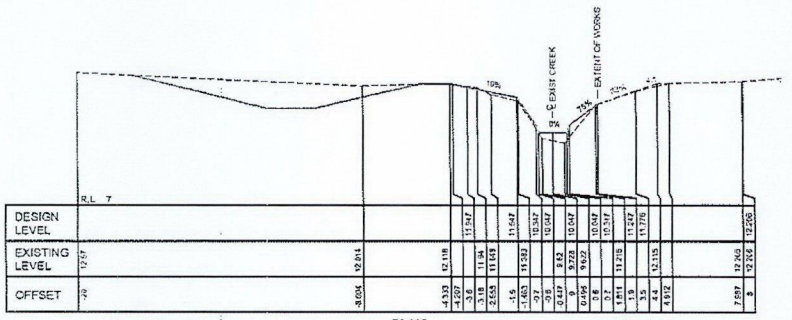
Cert Ref. 1736
Dwg File Ref. (Rev) - Sheet Ref.
6118Basbuilt 3 - 05

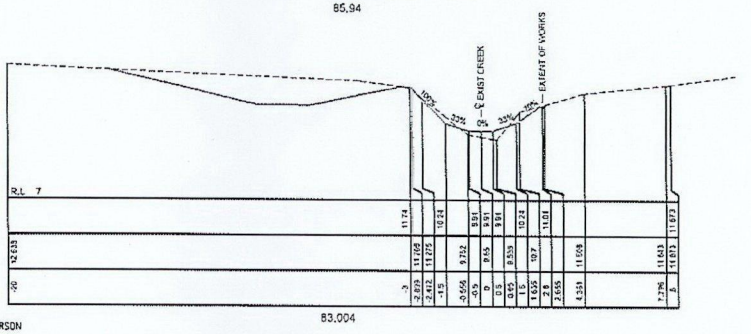



AS BUILT SURVEY AT CNR GARDEN & MACPHERSON STREETS, WARRIEWOOD

REF: 6118B
DATE OF SURVEY: AUGUST 2015
CAD FILE: 6118B AS BUILT

WE HEREBY CERTIFY THAT THE REDUCED LEVELS & DIMENSIONS SHOWN HEREON IN RED REPRESENT FINISHED WORKS.


C.M.S. Surveyors Pty Limited
ACN: 096 240 201
PO Box 483 Dee Why NSW 2099
1/32 Campbell Avenue, Dee Why NSW 2099
Telephone: (02) 9971 4802
Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au


1:100 @ A1

FERN CREEK RECONSTRUCTION
LOT 11 SECTION C D.P.5464
Cnr. GARDEN & MACPHERSON STREETS
WARRIEWOOD

Prepared: WARRIEWOOD PROPERTIES PTY LTD

| Scale | Date | Council Ref. |
|---|---|---|
| 1:100 NAT. | 8.11.13 | |
| | Datum A.H.D. | L.G.A. PITTWATER |
| Calcs A.D. | Drawn C.O.H. | Proj.Mgr. A.D. Client Ref. |

CRAIG & RHODES

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EPPING NSW 2121
PO Box 212
EPPING NSW 1710

ACN 050 209 991
DX 4418 EPPING
Tel. 9868 1277
Fax. 9868 2461

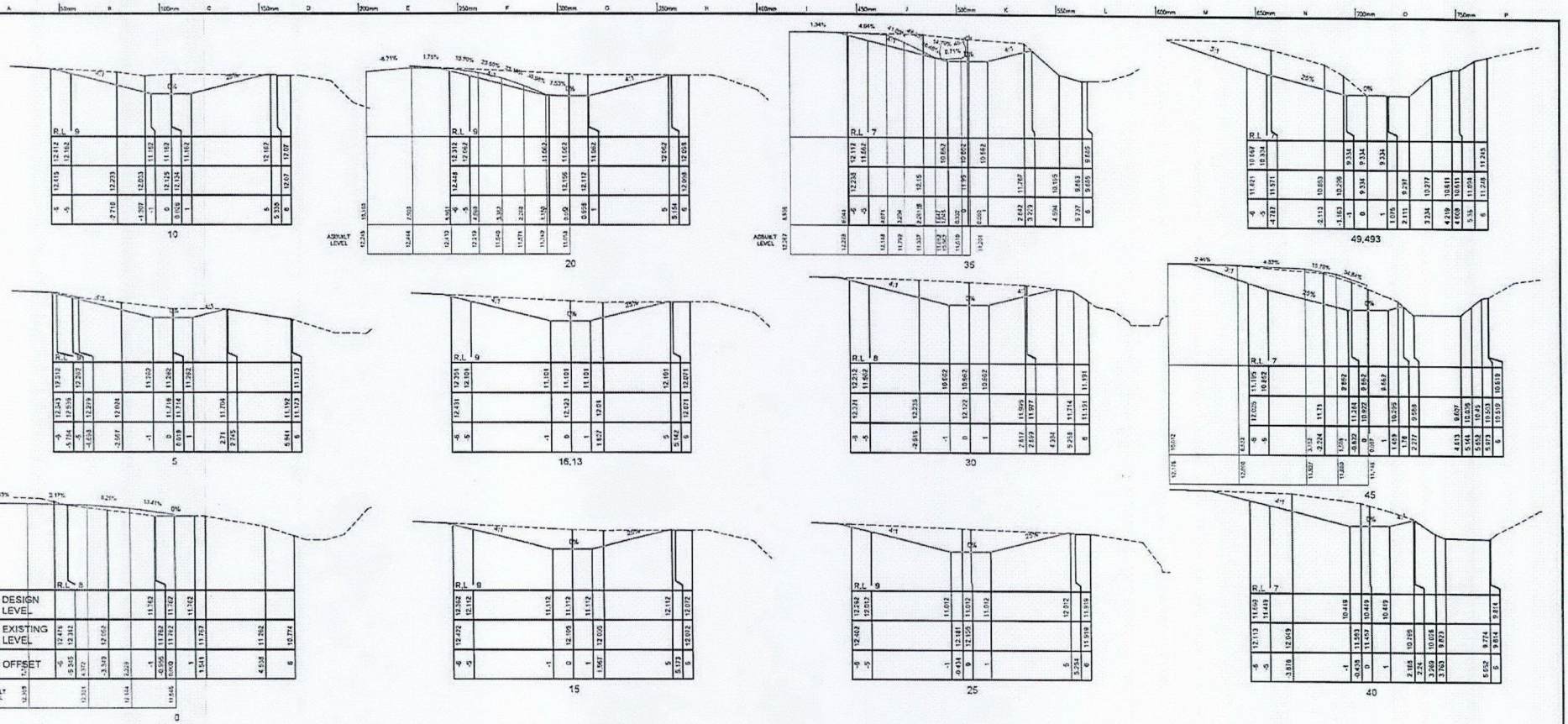
90th ANNIVERSARY 1923 – 2013

Approved Company

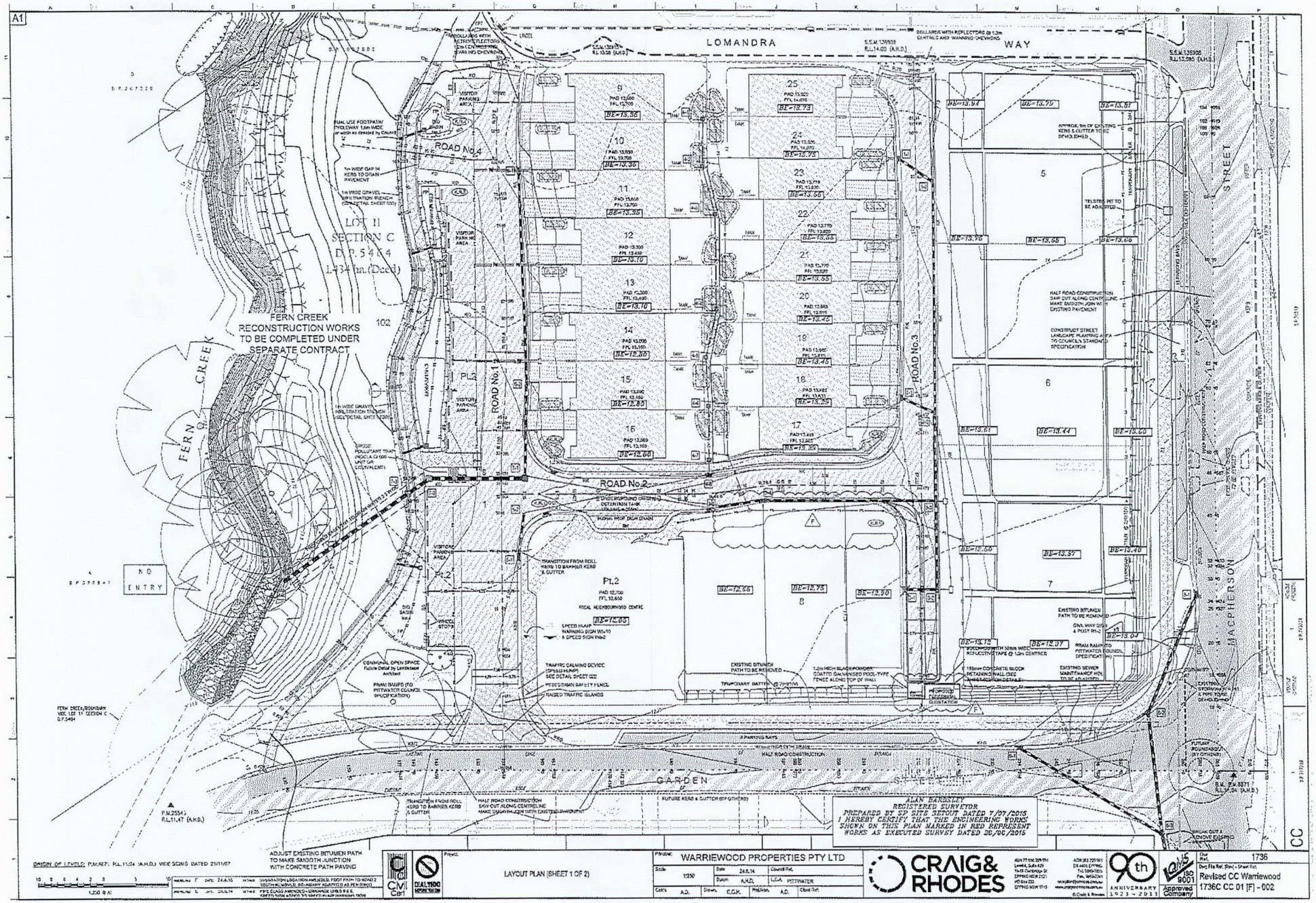
Dwg No. 1736

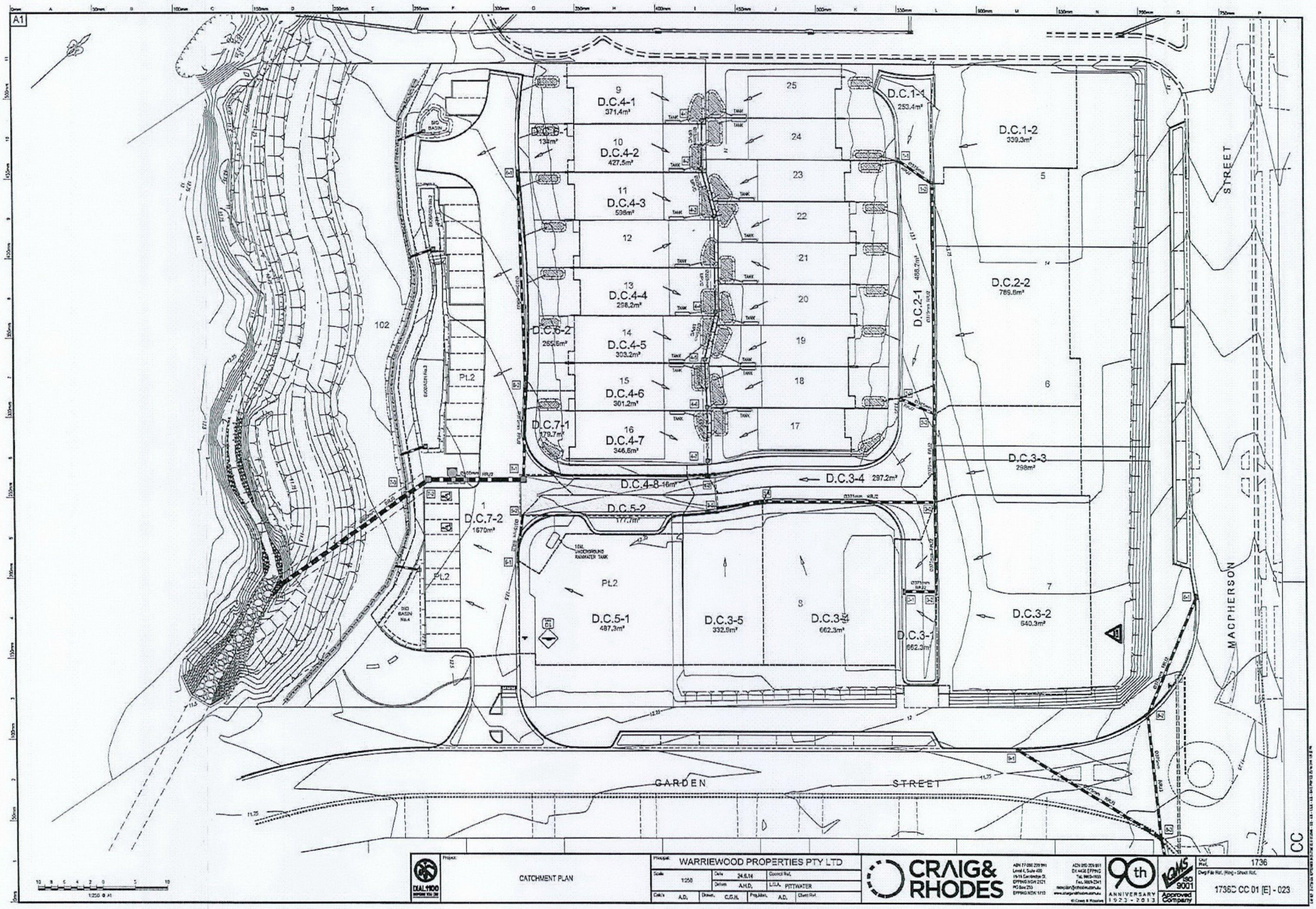
Dwg File Ref. [Rev] - Sheet Ref.

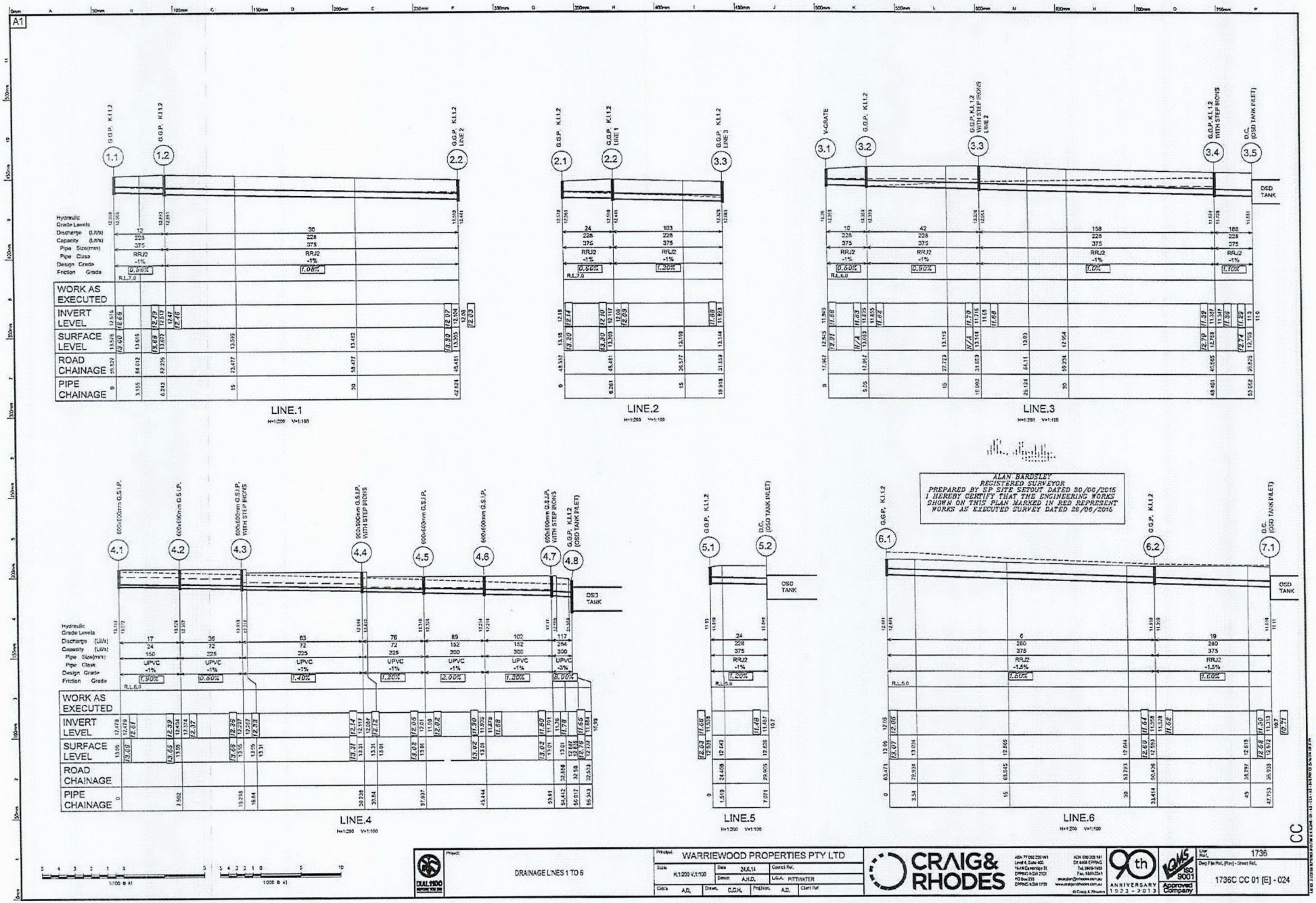
6118Basbuilt 3 - 06


10
20
35
49.493
5
16.13
30
45
0
15
25
40

| | | |


LOMANDRA WAY
ROAD No.1
ROAD No.2
ROAD No.3
ROAD No.4
FERN CREEK
RECONSTRUCTION WORKS
TO BE COMPLETED UNDER
SEPARATE CONTRACT
LOT 11
SECTION C
D.P.5464
1.434 ha.(Deed)
FERN CREEK
GARDEN STREET
JACPHERSON STREET
NO ENTRY
Pt.2
LOCAL NEIGHBOURHOOD CENTRE
COMMUNAL OPEN SPACE
Future Detail by Landscape Architect
ALAN BARNSLEY
REGISTERED SURVEYOR
PREPARED BY SP SITE SURVEY DATED 7/07/2015
I HEREBY CERTIFY THAT THIS ENGINEERING WORKS
SHOWN ON THIS PLAN MARKED IN RED REPRESENT
WORKS AS EXECUTED SURVEY DATED 30/06/2015
ORIGIN OF LEVELS: P.M.4471 R.L.11.04 (A.H.D.) VIDE SCIMS DATED 21/11/07
ADJUST EXISTING BITUMEN PATH
TO MAKE SMOOTH JUNCTION
WITH CONCRETE PATH PAVING
LAYOUT PLAN (SHEET 1 OF 2)
WARRIEWOOD PROPERTIES PTY LTD
CRAIG& RHODES
90th ANNIVERSARY 1923 - 2013
Revised CC Warriewood
1736C CC 01 [F] - 002
1736
CC


A1
9
D.C.4-1
371.4m²
10
D.C.4-2
427.5m²
11
D.C.4-3
596m²
12
13
D.C.4-4
298.2m²
14
D.C.4-5
303.2m²
15
D.C.4-6
301.2m²
16
D.C.4-7
346.6m²
D.C.6-2
265.6m²
D.C.7-1
179.7m²
D.C.1-1
253.4m²
D.C.1-2
339.3m²
D.C.2-1
488.2m²
D.C.2-2
789.6m²
D.C.3-3
298m²
D.C.3-4
297.2m²
D.C.4-8
16m²
D.C.5-2
177.7m²
D.C.7-2
1670m²
D.C.5-1
487.3m²
D.C.3-5
332.9m²
D.C.3-4
662.3m²
D.C.3-1
662.3m²
D.C.3-2
640.3m²
102
Pt.2
BIO BASIN
TANK
GARDEN
STREET
MACPHERSON
STREET
CC
1:250 @ A1
DIAL 1100
Project:
CATCHMENT PLAN
Principal:
WARRIEWOOD PROPERTIES PTY LTD
Scale
1:250
Date
24.6.14
Datum
A.H.D.
L.G.A.
PITTWATER
Calc's
A.D.
Drawn
C.G.H.
Proj.Mgr.
A.D.
Client Ref.
CRAIG& RHODES
90th ANNIVERSARY 1923 - 2013
Approved Company
Our Ref.
1736
Dwg File Ref. (Ring) - Sheet Ref.
1736D CC 01 [E] - 023


A1
LINE.1
H=1:200 V=1:100
LINE.2
H=1:200 V=1:100
LINE.3
H=1:200 V=1:100
LINE.4
H=1:200 V=1:100
LINE.5
H=1:200 V=1:100
LINE.6
H=1:200 V=1:100
OSD TANK
ALAN BARDSLEY
REGISTERED SURVEYOR
PREPARED BY SP SITE SETOUT DATED 30/06/2015
I HEREBY CERTIFY THAT THE ENGINEERING WORKS
SHOWN ON THIS PLAN MARKED IN RED REPRESENT
WORKS AS EXECUTED SURVEY DATED 26/06/2015
CC
DRAINAGE LINES 1 TO 6
WARRIEWOOD PROPERTIES PTY LTD
H.1:200 V.1:100
24.6.14
A.H.D.
PITTWATER
A.D.
C.G.H.
A.D.
CRAIG& RHODES
90th ANNIVERSARY 1923 - 2013
ISO 9001 Approved Company
1736
1736C CC 01 [E] - 024

## HYDROLOGICAL DESIGN SHEET

| PIT | LAND USE | FLOW LENGTH | SLOPE | "n" | TIME | TIME | INTENSITY | CODE | COEFF | AREA | C.A. | SUM AREA | Q | BY PASS | TOTAL FLOW | GUTTER SLOPE | FLOW WIDTH | PIT TYPE | LEVEL | INFLOW | BY FLOW | BY PIT | KINEMATIC MIN TIME 5 MAX TIME 20 WARRIEWOOD REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | m | % | | min | min | mm/h | | | ha | ha | ha | L/s | L/s | L/s | % | m | | m | L/s | L/s | | |
| 1.1 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.025 | 0.023 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.023 | 13 | | 13 | 1 | 1.095 | 1 | 1.2 | 13 | | 2.1 | |
| 1.2 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.034 | 0.031 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.031 | 17 | | 17 | 1 | 1.274 | 1 | 1.2 | 17 | | 2.2 | |
| 2.1 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.049 | 0.044 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.044 | 25 | | 25 | 1 | 1.512 | 1 | 1.2 | 25 | | 4.8 | |
| 2.2 | 1 | 30.5 | 1 | 0.170 | 9.763 | 5 ADP | 203 20Yr | -0.9 -0.650 | 0.908 0.815 | 0.079 0.027 | 0.072 0.022 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.094 | 53 | | 53 | 1 | 2.1 | 1 | 1.2 | 53 | | 3.3 | |
| 3.1 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.021 | 0.019 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.019 | 11 | | 11 | 0.7 | 1.091 0.02PH | 1 SAG | | 11 | | | |
| 3.2 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.064 | 0.058 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.058 | 33 | | 33 | 0.5 | 1.095 0.02PH | 1 SAG | 1.2 | 33 | | 3.2 | |
| 3.3 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.030 | 0.027 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.027 | 15 | | 15 | 1 | 1.104 | 1 | 1.2 | 15 | | 3.4 | |
| 3.4 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.066 | 0.060 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.06 | 34 | | 34 | 0.5 | 2.014 | 1 | 1.2 | 34 | | 5.2 | |
| 4.1 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.037 | 0.030 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.03 | 17 | | 17 | | | 4 | | 17 | | 4.2 | |
| 4.2 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.043 | 0.035 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.035 | 20 | | 20 | | | 4 | | 20 | | 4.2 | |
| 4.3 | 1 | 19 | 2 | 0.230 | 4.334 | 5 | 203 20Yr | -0.650 | 0.815 | 0.060 | 0.049 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.049 | 27 | | 27 | | 0.02PH | 4 SAG | | 27 | | 4.5 | |
| 4.4 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.030 | 0.024 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.024 | 14 | | 14 | | | 4 | | 14 | | 4.5 | |
| 4.5 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.030 | 0.025 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.025 | 14 | | 14 | | | 4 | | 14 | | 4.6 | |
| 4.6 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.030 | 0.025 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.025 | 14 | | 14 | | | 4 | | 14 | | 4.7 | |
| 4.7 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.035 | 0.028 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.028 | 16 | | 16 | | | 4 | | 16 | | 4.8 | |
| 5.1 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.049 | 0.044 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.044 | 25 | | 25 | 1 | 1.514 | 1 | 1.2 | 25 | | 5.2 | |
| 6.1 | | | | | | 6 | 203 20Yr | -0.9 | 0.908 | 0.013 | 0.012 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.012 | 7 | | 7 | 1 | 0.731 | 1 | 1.2 | 7 | | 6.2 | |
| 6.2 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.027 | 0.024 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.024 | 14 | | 14 | 1 | 1.124 | 1 | 1.2 | 14 | | 7.1 | |
| 7.1 | | | | | | 5 | 203 20Yr | -0.9 | 0.908 | 0.015 | 0.016 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.016 | 9 | | 9 | 2 | 0.702 0.02PH | 1 SAG | 1.2 | 9 | | | |
| 7.2 | | | | | | 5 | 203 20Yr | -0.650 | 0.815 | 0.107 | 0.136 | | | | | | | | | | | | |
| | | | | | | | | | | | | 0.136 | 77 | | 77 | 1 | 4.626 0.02PH | 4 SAG | | 77 | | 7.2 | |
| 7.3 | | | | | | 5 | 203 20Yr | | | | | | | 268 ADP | 268 | | | 4 | | | ADP | 268 | |

## HYDRAULIC DESIGN SHEET

| PIT | TIME | INTENSITY | AREAS | FLOW | LENGTH | DIAMETER | GRADE | HGL GRADE | VEL C/A | K | HEADLOSS | VEL CAP | PIPE VEL | PIPE CAP | PIPE TIME | C=C.W., N=MANNINGS MAX TIME 20 WARRIEWOOD BY PASS=AREA AREA=SUM.CA REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min | mm/hr | ha | L/s | m | mm | % | % | m/s | | m | m/s | m/s | L/s | min | |
| LINE 1 1.1-1.2 | 5 | 203 20Yr | 0.023 | 13 | 6.242 C0.0003 | 381 | 1 | 0.005 | 0.113 | 4.7 | 0.003 | 2.007 | 0.98 | 229 | 0.11 | |
| 1.2-2.2 | 5.1 | 201 20Yr | 0.054 | 33 | 96.582 C0.0003 | 381 | 1 | 0.02 | 0.263 | 3 | 0.011 | 2.007 | 1.2 | 229 | 0.61 | |
| LINE 2 2.1-2.2 | 5 | 203 20Yr | 0.044 | 25 | 6.261 C0.0003 | 381 | 1 | 0.015 | 0.215 | 4.7 | 0.011 | 2.007 | 1.15 | 229 | 0.09 | |
| 2.2-3.3 | 5.6 | 194 20Yr | 0.102 | 104 | 12.657 C0.0003 | 381 | 1 | 0.219 | 0.91 | 2.8 | 0.118 | 2.007 | 1.73 | 229 | 0.13 | |
| LINE 3 3.1-3.2 | 5 | 203 20Yr | 0.019 | 11 | 6.05 C0.0003 | 381 | 1 | 0.003 | 0.093 | 4.7 | 0.002 | 2.007 | 0.84 | 229 | 0.09 | |
| 3.2-3.3 | 5.1 | 201 20Yr | 0.077 | 43 | 14.042 C0.0003 | 381 | 1 | 0.04 | 0.377 | 3.4 | 0.025 | 2.007 | 1.31 | 229 | 0.18 | |
| 3.3-3.4 | 5.7 | 193 20Yr | 0.256 | 159 | 29.309 C0.0003 | 381 | 1 | 0.501 | 1.391 | 2.7 | 0.267 | 2.007 | 1.97 | 229 | 0.25 | |
| 3.4-3.5 | 6 | 192 20Yr | 0.356 | 188 | 4.681 C0.0003 | 381 | 1 | 0.7 | 1.65 | 1.1 | 0.153 | 2.007 | 2.07 | 229 | 0.04 | |
| LINE 4 4.1-4.2 | 5 | 203 20Yr | 0.03 | 17 | 7.502 C0.00005 | 152 | 1 | 0.57 | 0.934 | 1.8 | 0.681 | 1.371 | 1.34 | 25 | 0.09 | |
| 4.2-4.3 | 5.1 | 201 20Yr | 0.065 | 36 | 7.736 C0.00005 | 229 | 1 | 0.31 | 0.894 | 1.8 | 0.972 | 1.759 | 1.57 | 72 | 0.08 | |
| 4.3-4.4 | 5.2 | 200 20Yr | 0.114 | 62 | 76 C0.00005 | 229 | 1 | 0.875 | 1.535 | 1.8 | 0.216 | 1.759 | 1.85 | 72 | 0.14 | |
| 4.4-4.5 | 5.3 | 198 20Yr | 0.138 | 76 | 7.669 C0.00005 | 229 | 1 | 1.243 | 1.846 | 1 | 0.174 | 1.759 | 1.9 | 72 | 0.07 | |
| 4.5-4.6 | 5.4 | 197 20Yr | 0.163 | 89 | 7.307 C0.00005 | 305 | 1 | 0.402 | 1.222 | -0.1 | -0.005 | 2.09 | 1.95 | 153 | 0.06 | |
| 4.6-4.7 | 5.4 | 196 20Yr | 0.187 | 102 | 8.366 C0.00005 | 305 | 1 | 0.62 | 1.4 | 0.8 | 0.08 | 2.09 | 2.04 | 153 | 0.07 | |
| 4.7-4.8 | 5.5 | 195 20Yr | 0.215 | 117 | 2.533 C0.00005 | 305 | 3 | 0.673 | 1.605 | 0.8 | 0.105 | 3.621 | 3.11 | 265 | 0.01 | |
| LINE 5 5.1-5.2 | 5 | 203 20Yr | 0.044 | 25 | 7.671 C0.0003 | 381 | 1 | 0.015 | 0.215 | 4.7 | 0.011 | 2.007 | 1.15 | 229 | 0.1 | |
| LINE 6 6.1-6.2 | 5 | 203 20Yr | 0.012 | 7 | 33.414 C0.0003 | 381 | 1.5 | 0.002 | 0.06 | 4.7 | 0.001 | 2.458 | 0.97 | 280 | 0.57 | |
| 6.2-7.1 | 5.6 | 193 20Yr | 0.008 | 20 | 14.036 C0.0003 | 381 | 1.5 | 0.009 | 0.172 | 3.8 | 0.006 | 2.458 | 1.28 | 280 | 0.19 | |
| LINE 7 7.1-7.2 | 5.8 | 192 20Yr | 0.053 | 196 ADP | 14.412 C0.0003 | 610 | 1 | 0.068 | 0.671 | 3.2 | 0.073 | 2.681 | 1.92 | 784 | 0.13 | |
| 7.2-7.3 | 5.9 | 191 20Yr | 0.189 | 264 ADP | 3.529 C0.0003 | 610 | 1 | 0.124 | 0.917 | 4.1 | 0.176 | 2.681 | 2.12 | 784 | 0.03 | |
| 7.3-7.4 | 5.9 | 191 20Yr | +0.257 -0.478 | 268 ADP | 26.203 C0.0003 | 610 | 2.348 | 0.124 | 0.917 | 0.2 | 0.099 | 4.186 | 2.85 | 1201 | 0.15 | |

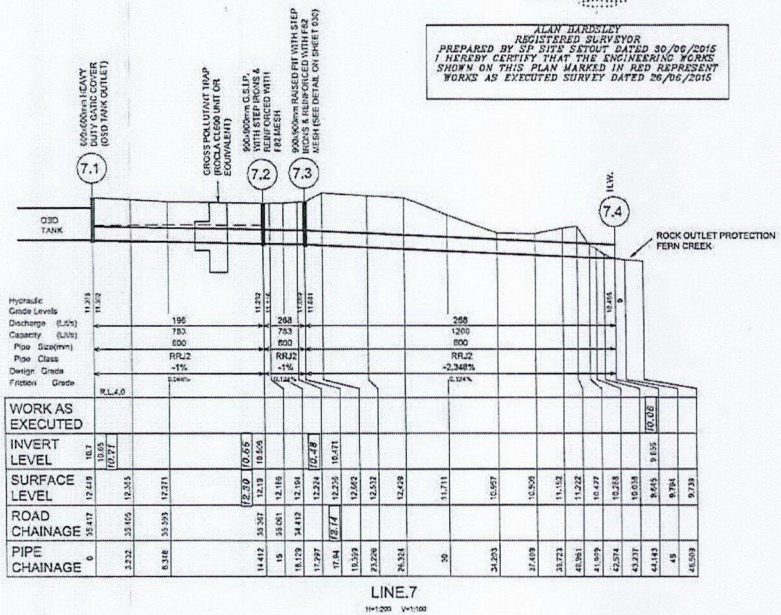
## DRAINAGE NOTES

1. CALCULATIONS BASED ON AUSTRALIAN RAINFALL RUNOFF (1987)
2. DESIGN RECURRENCE INTERVAL FOR ROAD AND INTERALLOTMENT DRAINAGE IS 20 YEARS FOR THE PIPED SYSTEM
3. THE ROUGHNESS VALUE FOR THE COLEBROOK-WHITE EQUATION ADOPTED IS AS FOLLOWS:
   FOR THE UPVC PIPE = 0.6mm
4. PIT LOSS FACTORS BASED ON THE MISSOURI CHARTS
5. KERB INLET DIMENSIONS (e.g. K.I. 1.2m) REFER TO THE OPENING OF LINTELS
6. PRECAST PIT LINTELS ARE TO BE USED
7. ALL PITS ARE TO BE BENCHED WITH MASS CONCRETE TO HALF DIAMETER TO STREAMLINE FLOW
8. GULLY PIT CLOGGING FACTORS ARE: 0.7 FOR GRATES, 0.9 FOR LINTELS
9. CONCRETE BULK HEADS TO BE PROVIDED AT MAX. 2.5m SPACINGS WHERE PIPE GRADES EXCEED 12% OR AS DIRECTED

## PIT TYPES

1 – G.G.P. – STANDARD GRATED GULLY PIT
4 – G.I.S.P. – GRATED SURFACE INLET PIT
5 – J.P. – JUNCTION PIT
7 – D.C. – DIRECT CONNECTION
10 – G.P.T. – GROSS POLLUTANT TRAP
H.W. – HEAD WALL

ALAN HARDELEY
REGISTERED SURVEYOR
PREPARED BY SP SITE SETOUT DATED 30/06/2015
I HEREBY CERTIFY THAT THE ENGINEERING WORKS SHOWN ON THIS PLAN MARKED IN RED REPRESENT WORKS AS EXECUTED SURVEY DATED 26/06/2015




LINE.7
H=1:200 V=1:100

1:100 @ A1 1:200 @ A1

DRAINAGE LINE 7
DRAINAGE NOTES & CALCULATION SHEETS

Principal: WARRIEWOOD PROPERTIES PTY LTD
Scale: H.1:200 V.1:100 | Date: 26.6.14 | Council Ref.
Datum: A.H.D. | L.G.A.: PITTWATER
Calc's: A.D. | Drawn: C.G.H. | Proj.Mgr: A.D. | Client Ref.

CRAIG & RHODES

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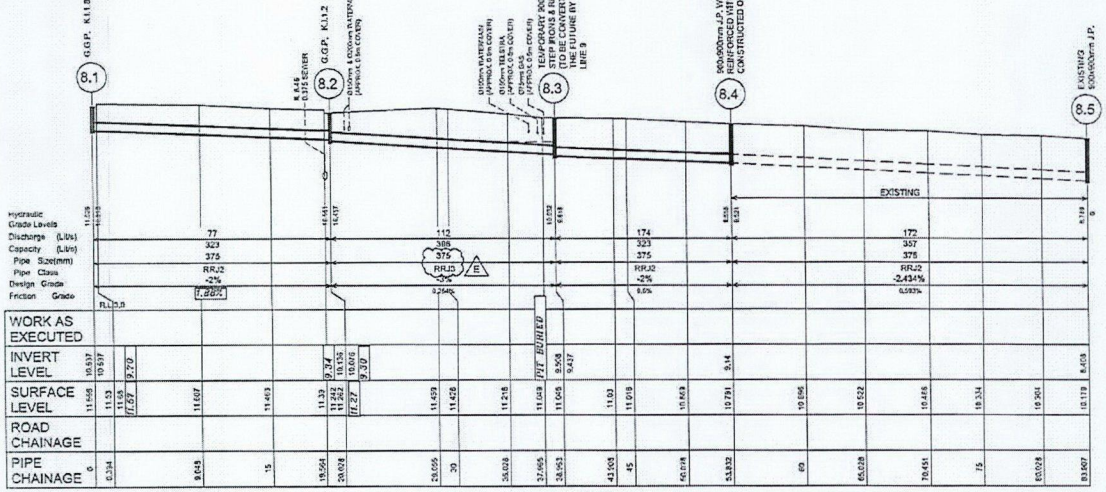
## HYDROLOGICAL DESIGN SHEET

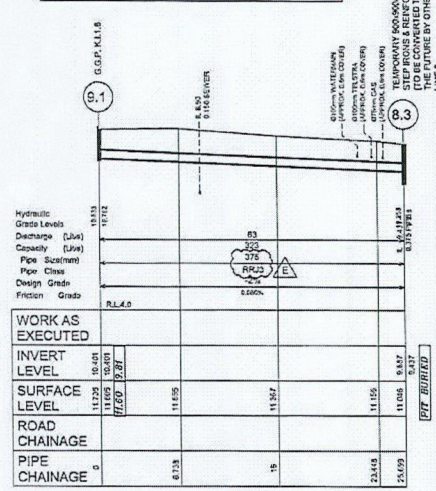
| PIT | LAND USE | FLOW LENGTH | SLOPE | "n" | TIME | TIME | INTENSITY | CODE | COEFF | AREA | C.A | SUM AREA | Q | BY PASS | TOTAL FLOW | GUTTER SLOPE | FLOW WIDTH | PIT TYPE | LINTEL | INFLOW | BY FLOW | BY PIT | KINEMATIC MIN TIME 5 MAX TIME 20 WARRIEWOOD REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | m | % | | min | min | mm/h | | | ha | ha | ha | L/s | L/s | L/s | % | m | | m | L/s | L/s | | |
| 9.1 | | | | | | 5 | 203 20Yr | 0.650 | 0.815 | 0.140 | 0.114 | 0.114 | 64 | | 64 | 1 | 2.272 | 1 | 1.8 | 64 | | 8.2 | |
| 8.1 | | | | | | 5 | 203 20Yr | 0.650 | 0.815 | 0.169 | 0.138 | 0.138 | 78 | | 78 | 0.7 | 2.533 | 1 | 1.8 | 78 | | 8.2 | |
| 8.2 | | | | | | 5 | 203 20Yr | 0.9 | 0.908 | 0.070 | 0.064 | 0.064 | 36 | | 36 | 0.7 | 2.469 0.03PH | 1 SAG | 1.2 | 36 | | | |
| 8.3 | | | | | | 5 | 200 20Yr | | | | | | | | | 1.4 | | 1 | 1.2 | ADP | | | |
| 8.4 | | | | | | 5 | 200 20Yr | | | | | | | | | 1.4 | | 5 | | ADP | | | |

## HYDRAULIC DESIGN SHEET

| PIT | TIME | INTENSITY | AREAS | FLOW | LENGTH | DIAMETER | GRADE | H.G.L GRADE | VEL OF A | K | HEAD LOSS | VEL OF P | PIPE VEL | PIPE CAP | PIPE TIME | C=C.W.  N=MANNINGS MAX TIME 20 WARRIEWOOD BY PASS=AREA AREA=SUM.CA REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min | mm/hr | ha | L/s | m | mm | % | % | m/s | | m | m/s | m/s | L/s | min | |
| LINE 9 9.1-8.3 | 5 | 200 20Yr | 0.114 | 64 | 25.055 C0.0003 | 381 | 2 | 0.060 | 0.561 | 3.2 | 0.051 | 2.839 | 1.89 | 324 | 0.23 | |
| LINE 8 8.1-8.2 | 5 | 202 20Yr | 0.138 | 78 | 30.075 C0.0003 | 381 | 2 | 0.124 | 0.68 | 4.6 | 0.100 | 2.839 | 2.01 | 324 | 0.17 | |
| 8.2-8.3 | 5.2 | 200 20Yr | 0.202 | 112 | 18.833 C0.0003 | 381 | 3 | 0.254 | 0.994 | 1.9 | 0.094 | 3.477 | 2.6 | 396 | 0.12 | |
| 8.3-8.4 | 5.3 | 196 20Yr | 0.315 | 174 | 14.859 C0.0003 | 381 | 2 | 0.6 | 1.526 | 1.8 | 0.214 | 2.839 | 2.59 | 324 | 0.1 | |
| 8.4-8.5 | 5.4 | 197 20Yr | 0.315 | 173 | 30.075 C0.0003 | 381 | 2.434 | 0.595 | 1.517 | 8.3 | 0.035 | 3.131 | 2.76 | 397 | 0.18 | |




LINE.8
H=1:200 V=1:100




LINE.9
H=1:200 V=1:100

ALAN BARDSLEY
REGISTERED SURVEYOR
PREPARED BY SP SITE SETOUT DATED 30/06/2015
I HEREBY CERTIFY THAT THE ENGINEERING WORKS SHOWN ON THIS PLAN MARKED IN RED REPRESENT WORKS AS EXECUTED SURVEY DATED 26/06/2015

DRAINAGE LINES 8 & 9
DRAINAGE CALCULATION SHEETS

Principal: WARRIEWOOD PROPERTIES PTY LTD
Scale: H:1:200 V:1:100
Date: 24.6.14
Datum: A.H.D.
L.G.A.: PITTWATER
Calc's: A.D.
Drawn: C.G.H.
Proj.Mgr: A.D.
Client Ref:
Council Ref:

CRAIG & RHODES

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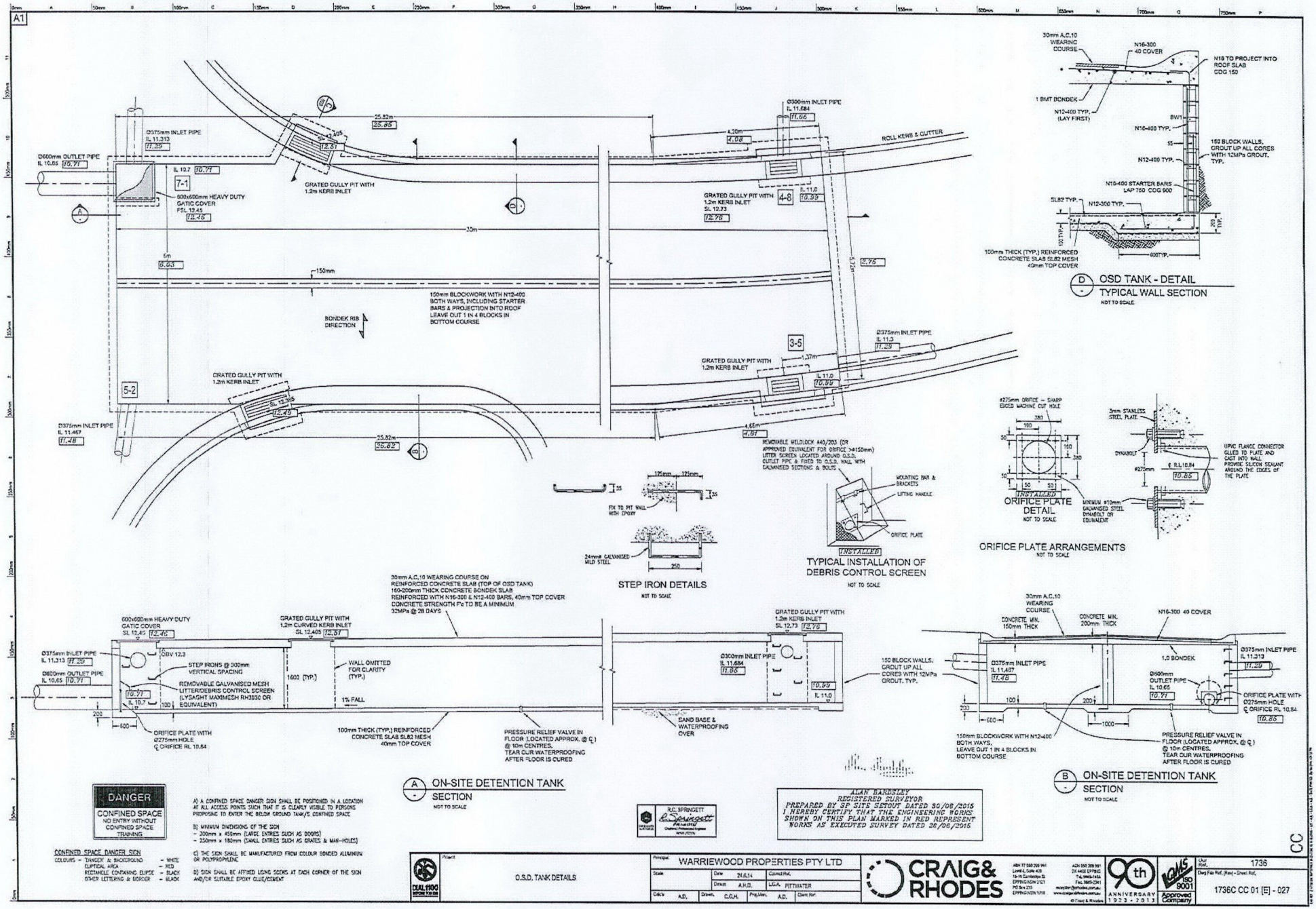
Our Ref. 1736
Dwg File Ref. [Rev] - Sheet Ref.
1736C CC 01 [E] - 026

CC


Ø600mm OUTLET PIPE IL 10.65 10.71
Ø375mm INLET PIPE IL 11.313 11.29
7-1
600x600mm HEAVY DUTY GATIC COVER FSL 12.45 12.46
GRATED GULLY PIT WITH 1.2m KERB INLET
25.82m 25.85
12.61
Ø300mm INLET PIPE IL 11.684 11.66
4.20m 4.08
ROLL KERB & GUTTER
GRATED GULLY PIT WITH 1.2m KERB INLET SL 12.73 12.78
4-8
IL 11.0 10.99
33m
6m 6.03
150mm
12.76
150mm BLOCKWORK WITH N12-400 BOTH WAYS, INCLUDING STARTER BARS & PROJECTION INTO ROOF LEAVE OUT 1 IN 4 BLOCKS IN BOTTOM COURSE
BONDEK RIB DIRECTION
3-5
Ø375mm INLET PIPE IL 11.0 11.29
GRATED GULLY PIT WITH 1.2m KERB INLET
1.37m
IL 11.0 10.99
5-2
GRATED GULLY PIT WITH 1.2m KERB INLET SL 12.395 12.49
Ø375mm INLET PIPE IL 11.467 11.48
25.82m 25.82
4.65m 4.61
REMOVABLE WELDLOCK 440/203 (OR APPROVED EQUIVALENT FOR ORIFICE >Ø150mm) LITTER SCREEN LOCATED AROUND O.S.D. OUTLET PIPE & FIXED TO O.S.D. WALL WITH GALVANISED SECTIONS & BOLTS
MOUNTING BAR & BRACKETS
LIFTING HANDLE
ORIFICE PLATE
INSTALLED
TYPICAL INSTALLATION OF DEBRIS CONTROL SCREEN
NOT TO SCALE
125mm 125mm
35
FIX TO PIT WALL WITH EPOXY
24mmø GALVANISED MILD STEEL
250
STEP IRON DETAILS
NOT TO SCALE
30mm A.C.10 WEARING COURSE
N16-300 40 COVER
N16 TO PROJECT INTO ROOF SLAB CDG 150
1 BMT BONDEK
N12-400 TYP. (LAY FIRST)
BW1
N16-400 TYP.
150 BLOCK WALLS, GROUT UP ALL CORES WITH 12MPa GROUT, TYP.
N12-400 TYP.
N16-400 STARTER BARS LAP 760 CDG 900
SL82 TYP.
N12-300 TYP.
100 TYP.
100mm THICK (TYP.) REINFORCED CONCRETE SLAB SL82 MESH 40mm TOP COVER
600 TYP.
D
OSD TANK - DETAIL
TYPICAL WALL SECTION
NOT TO SCALE
Ø275mm ORIFICE — SHARP EDGED MACHINE CUT HOLE
380
180
50
160
50
50
INSTALLED
ORIFICE PLATE DETAIL
NOT TO SCALE
3mm STAINLESS STEEL PLATE
DYNABOLT
Ø275mm
℄ R.L.10.84
10.85
UPVC FLANGE CONNECTOR GLUED TO PLATE AND CAST INTO WALL. PROVIDE SILICON SEALANT AROUND THE EDGES OF THE PLATE
MINIMUM ø10mm GALVANISED STEEL DYNABOLT OR EQUIVALENT
ORIFICE PLATE ARRANGEMENTS
NOT TO SCALE
30mm A.C.10 WEARING COURSE ON REINFORCED CONCRETE SLAB (TOP OF OSD TANK) 160-200mm THICK CONCRETE BONDEK SLAB REINFORCED WITH N16-300 & N12-400 BARS, 40mm TOP COVER CONCRETE STRENGTH f'c TO BE A MINIMUM 32MPa @ 28 DAYS
600x600mm HEAVY DUTY GATIC COVER SL 12.45 12.46
GRATED GULLY PIT WITH 1.2m CURVED KERB INLET SL 12.405 12.57
GRATED GULLY PIT WITH 1.2m KERB INLET SL 12.73 12.78
Ø375mm INLET PIPE IL 11.313 11.29
Ø600mm OUTLET PIPE IL 10.65 10.71
OBV 12.3
STEP IRONS @ 300mm VERTICAL SPACING
REMOVABLE GALVANISED MESH LITTER/DEBRIS CONTROL SCREEN (LYSAGHT MAXIMESH RH3030 OR EQUIVALENT)
10.71
IL 10.7
100
1600 (TYP.)
WALL OMITTED FOR CLARITY (TYP.)
1% FALL
Ø300mm INLET PIPE IL 11.684 11.66
10.99
IL 11.0
200
600
ORIFICE PLATE WITH Ø275mm HOLE ℄ ORIFICE RL 10.84
100mm THICK (TYP.) REINFORCED CONCRETE SLAB SL82 MESH 40mm TOP COVER
PRESSURE RELIEF VALVE IN FLOOR LOCATED APPROX. @ ℄ @ 10m CENTRES. TEAR OUR WATERPROOFING AFTER FLOOR IS CURED
SAND BASE & WATERPROOFING OVER
A
ON-SITE DETENTION TANK
SECTION
NOT TO SCALE
30mm A.C.10 WEARING COURSE
CONCRETE MIN. 150mm THICK
CONCRETE MIN. 200mm THICK
N16-300 40 COVER
150 BLOCK WALLS, GROUT UP ALL CORES WITH 12MPa GROUT, TYP.
Ø375mm INLET PIPE IL 11.467 11.48
1.0 BONDEK
Ø375mm INLET PIPE IL 11.313 11.29
Ø600mm OUTLET PIPE IL 10.65 10.71
ORIFICE PLATE WITH Ø275mm HOLE ℄ ORIFICE RL 10.84 10.85
100
200
200
600
1000
150mm BLOCKWORK WITH N12-400 BOTH WAYS, LEAVE OUT 1 IN 4 BLOCKS IN BOTTOM COURSE
PRESSURE RELIEF VALVE IN FLOOR (LOCATED APPROX. @ ℄ @ 10m CENTRES. TEAR OUR WATERPROOFING AFTER FLOOR IS CURED
B
ON-SITE DETENTION TANK
SECTION
NOT TO SCALE
DANGER
CONFINED SPACE
NO ENTRY WITHOUT CONFINED SPACE TRAINING
A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE
B) MINIMUM DIMENSIONS OF THE SIGN
– 300mm x 450mm (LARGE ENTRIES SUCH AS DOORS)
– 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MAN-HOLES)
C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINIUM OR POLYPROPYLENE
D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN AND/OR SUITABLE EPOXY GLUE/CEMENT
CONFINED SPACE DANGER SIGN
COLOURS – 'DANGER' & BACKGROUND – WHITE
ELIPTICAL AREA – RED
RECTANGLE CONTAINING ELIPSE – BLACK
OTHER LETTERING & BORDER – BLACK
R.C. SPRINGETT
ALAN BARNSLEY REGISTERED SURVEYOR PREPARED BY SP SITE SETOUT DATED 30/08/2015 I HEREBY CERTIFY THAT THE ENGINEERING WORKS SHOWN ON THIS PLAN MARKED IN RED REPRESENT WORKS AS EXECUTED SURVEY DATED 26/06/2015
DUAL1100 BEFORE YOU DIG
Project: O.S.D. TANK DETAILS
Principal: WARRIEWOOD PROPERTIES PTY LTD
State: NSW Date: 24.6.14 Council Ref.:
Drawn: A.H.D. LGA: PITTWATER
Check: A.D. Drawn: C.G.H. Proj.Man.: A.D. Client Ref.:
CRAIG & RHODES
ABN 77 068 209 941 Level 6, Suite 603 19-25 Cumberland St SYDNEY NSW 2000 PO Box 230 EPPING NSW 1710
ABN 068 209 941 Ph: 9411 2777 Fax: 9869 2161 mail@craigandrhodes.com.au www.craigandrhodes.com.au
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1736C CC 01 [E] - 027
CC

A1

## GENERAL

1) THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS, SPECIFICATIONS AND OTHER INSTRUCTIONS ISSUED FOR THE WORKS. ANY DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
2) DIMENSIONS SHALL NOT BE OBTAINED BY SCALING.
3) DIMENSIONS FOR SETTING OUT AND OF EXISTING WORKS SHALL BE VERIFIED BY THE BUILDER.
4) THE BUILDER SHALL AT ALL TIMES OBSERVE RECOGNISED GOOD BUILDING PRACTICE, CONFORMING TO ALL RELEVANT CODES. HE SHALL MAINTAIN THE WORKS IN A SAFE AND STABLE CONDITION AT ALL TIMES.
5) TRUSS LAYOUT AND/OR PITCHING POINTS FOR ROOF LOADS TO BE APPROVED BY ENGINEER BEFORE CONSTRUCTION.

## FOOTINGS

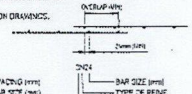
1) THE FOOTINGS HAVE BEEN DESIGNED FOR MATERIAL WITH A MINIMUM BEARING CAPACITY OF 100 kPA UNLESS OTHERWISE NOTED. THIS IS TO BE CONFIRMED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

## EXCAVATION & FILLING

1) TOP SOIL CONTAINING GRASS, ROOTS OR OTHER ORGANIC MATERIAL SHALL BE REMOVED FROM THE AREA ON WHICH THE SLAB IS TO BE CONSTRUCTED.
2) IF THE SITE CONDITIONS ENCOUNTERED VARY FROM THE CONDITIONS INDICATED ON THE DRAWINGS OR REPORTED IN THE GEOTECHNICAL REPORT, THE STRUCTURAL ENGINEER AND/OR THE GEOTECHNICAL ENGINEER SHOULD BE NOTIFIED IMMEDIATELY.
3) FILL USED IN THE CONSTRUCTION OF A SLAB EXCEPT WHERE THE SLAB IS SUSPENDED SHALL CONSIST OF CONTROLLED FILL OR ROLLED FILL IN ACCORDANCE WITH AS2870 CLAUSE 6.4.2.
4) CONTROLLED FILL
4.A) SAND FILL UP TO 800MM DEEP COMPACTED IN LAYERS NOT MORE THAN 300MM THICK USING A VIBRATING PLATE OR VIBRATING ROLLER.
4.B) NON-SAND FILL UP TO 400MM THICK COMPACTED IN LAYERS NOT MORE THAN 150MM THICK USING A MECHANICAL ROLLER. CLAY FILL SHALL BE MOIST DURING COMPACTION.
5) ROLLED FILL CONSISTS OF MATERIAL COMPACTED IN LAYERS BY REPEATED ROLLING WITH AN EXCAVATOR. SAND FILL UP TO 600MM DEEP COMPACTED IN LAYERS NOT MORE THAN 300MM THICK. NON-SAND FILL UP TO 300MM DEEP COMPACTED IN LAYERS NOT MORE THAN 150MM THICK.
6) BACK FILL MATERIAL SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY.

## REINFORCEMENT

1) ALL REINFORCING BAR AND FABRIC IS DESIGNATED AS INDICATED BELOW:
R - DENOTES GRADE 250 HOT ROLLED PLAIN BARS TO AS/NZS 4671-2001.
S - DENOTES GRADE 250 HOT ROLLED DEFORMED BARS TO AS/NZS 4671-2001.
N - DENOTES GRADE D500N DEFORMED BARS TO AS/NZS 4671-2001.
SL/RL - DENOTES GRADE D500L SQUARE/RECTANGULAR MESH TO AS/NZS 4671-2001.
TM - DENOTES TRENCH MESH TO AS/NZS 4671-2001.
2) THE FIGURES FOLLOWING THE MESH DESIGNATION IS THE REFERENCE NUMBER FOR FABRIC TO AS/NZS 4671-2001.
3) REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
4) SLAB REINFORCEMENT SHALL EXTEND AT LEAST 75MM INTO MASONRY SUPPORT WALLS AND 50 PERCENT OF THE BOTTOM REINFORCEMENT SHALL BE DOGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS.
5) FABRIC SHALL BE LAPPED SUCH THAT THE TWO OUTER MOST WIRES OF ONE SHEET OVERLAP THE TWO OUTER MOST WIRES OF THE OTHER SHEET BY A MINIMUM OF 250MM.
6) NOTATION ON DRAWINGS.




7) SPLICES IN REINFORCEMENT SHALL NOT BE MADE EXCEPT AS INDICATED ON THE DRAWINGS OR APPROVED BY THE ENGINEER.
8) ALL REINFORCEMENT SHALL BE ADEQUATELY SUPPORTED TO ENSURE POSITION IS MAINTAINED DURING PLACEMENT OF CONCRETE. THIS MAY BE ACHIEVED BY USING PURPOSE MADE STEEL OR PLASTIC SUPPORTS DEPENDING ON THE EXPOSURE CONDITION TO ACHIEVE THE REQUIRED CONCRETE COVER TO REINFORCEMENT. SUPPORTS SHALL BE LOCATED AT NOT MORE THAN 60 BAR DIAMETERS EACH WAY FOR BARS AND NOT MORE THAN 1000MM EACH WAY FOR MESH.
9) A MINIMUM OF 24 HOURS NOTICE SHALL BE GIVEN FOR INSPECTION OF THE REINFORCEMENT BY THE ENGINEER AS REQUIRED BY THE SPECIFICATION.

## CONCRETE

1) ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.
2) CONCRETE QUALITY

| ELEMENT | STRENGTH (MPa) | MAX. AGG. SIZE (mm) | SLUMP (mm) |
|---|---|---|---|
| FOOTINGS | 28 | 20 | 80 |
| SLAB ON GROUND | 25 | 20 | 80 |
| PIERS | 20 | 20 | 65 |
| SUSPENDED SLABS | 40 | 20 | 80 |
| COLUMNS | 40 | 20 | 80 |

3) NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED BY THE ENGINEER. ADMIXTURES CONTAINING CHLORIDES WILL NOT BE APPROVED.
4) SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE APPLIED FINISHES.
5) DEPTH OF BEAMS AND BANDS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
6) NO HOLES, CHASES OR EMBEDMENT OF PIPES OR OTHER REDUCTION IN MEMBER DIMENSIONS OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

## CONCRETE (CONT)

7) CLEAR CONCRETE COVER TO REINFORCEMENT FOR DURABILITY AND FIRE RESISTANCE SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE.

| ELEMENT | INTERNAL ENVIRONMENT | EXTERNAL ENVIRONMENT | CAST AGAINST GROUND |
|---|---|---|---|
| FOOTINGS | - | - | 40 |
| SLAB ON GROUND | 20 | 45 | 30*+ |
| PIERS | - | - | 60 |
| SLABS | 20 TOP 30 BTM | 45 | 30*+ |
| COLUMNS | 45 | 45 | - |

*+ IF PROTECTED BY A VAPOUR PROOF MEMBRANE OTHERWISE 40MM.

8) CONDUITS, PIPES ETC. WILL ONLY BE ALLOWED TO BE LOCATED IN THE MIDDLE ONE THIRD OF THE SLAB DEPTH AND SPACED AT NOT LESS THAN THREE DIAMETERS. PIPES OR CONDUITS SHALL NOT BE PLACED IN THE COVER ZONE TO THE REINFORCEMENT.
9) CONSTRUCTION JOINTS SHALL BE AS SHOWN OR TO THE APPROVAL OF THE ENGINEER.
10) SLABS AND BEAMS SHALL BE CONSTRUCTED TO ONLY BE SUPPORTED ON THE BEAMS, WALLS, COLUMNS ETC, AS SHOWN ON THE STRUCTURAL DRAWINGS. ALL OTHER BUILDING ELEMENTS SHALL BE KEPT A MINIMUM OF 15MM CLEAR FROM THE SOFFITS OF THE STRUCTURE UNLESS NOTED OTHERWISE.
11) THE FINISHED CONCRETE SHALL BE A HOMOGENEOUS MASS FREE OF POCKETS, COMPLETELY FILLING THE FORMWORK AND THOROUGHLY EMBEDDING THE REINFORCEMENT. ALL CONCRETE SHALL BE COMPACTED USING MECHANICAL VIBRATORS.
12) WHERE THE VERTICAL FACE CONCRETE IS PLACED AGAINST BRICKWORK, A 10MM JOINT OF COMPRESSIBLE MATERIAL SHALL BE PLACED AGAINST THE BRICKWORK FOR THE FULL DEPTH OF THE CONCRETE.
13) CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS, UNLESS SPECIFIED OTHERWISE. APPROVED SPRAY ON CURING COMPOUNDS THAT COMPLY WITH AS3799 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED. POLYTHENE SHEETING OR WET HESSIAN MAY BE USED TO RETAIN CONCRETE MOISTURE WHERE PROTECTED FROM WIND AND TRAFFIC. CURING IS TO COMMENCE IMMEDIATELY AFTER CONCRETE PLACEMENT.
14) CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REMOVED AND THE SLAB HAS DEFLECTED UNDER ITS SELF WEIGHT.

## REINFORCED BLOCKWORK

1) MASONRY BLOCKS SHALL BE GRADE 12 (AS/NZS 4455). LAID WITH MORTAR MIXED 1 CEMENT, 0.1 LIME AND 3 SAND. CORE GROUT SHALL HAVE MAX. 10MM AGGREGATE IN A 200MM MIN. 230 SLUMP.
2) ALL BLOCKS SHALL BE DOUBLE 'U' BLOCKS U.N.O.
2) PROVIDE CLEANOUT SPACE AT THE BASE OF EACH CORE. GROUTING SHOULD NOT EXCEED LIFTS OF 800MM. LIFT STAGES SHOULD BE AT LEAST 20MINUTES APART.
4) FILL SHALL NOT BE PLACED BEHIND BLOCKWORK WALLS UNTIL THE CORE GROUT IS AT LEAST 7 DAYS OLD, AND SHALL NOT PROCEED PAST HALF DEPTH UNTIL CORE GROUT IS 21 DAYS OLD.

## STRUCTURAL STEELWORK

1) ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100 AND AS1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2) UNLESS OTHERWISE NOTED, ALL STEEL SHALL BE:
- GRADE 250 HOT ROLLED PLATES, ANGLES 100X100 EA OR 125X75 UA AND SMALLER.
- GRADE 300 FOR UB'S, UC'S, PFC'S AND LARGER ANGLES.
- GRADE 300 FOR WB'S AND WC'S.
- GRADE 250 FOR RHS, SHS AND CHS.

3) UNLESS OTHERWISE NOTED, ALL WELDS SHALL BE 6MM CONTINUOUS FILLET FROM E48XX ELECTRODES. ALL WELDS SHALL BE CATEGORY CP. ALL BOLTS M16 COMMERCIAL GRADE AND ALL CLEATS AND GUSSETS 8MM PLATE.
4) FOR BOLTS OTHER THAN AS NOTED ABOVE, THE FOLLOWING NOTATION IS USED: BOLTS - DESIGNATED BY THE NUMBER, DIAMETER, GRADE AND TIGHTENING PROCEDURE.
E.G. 4M16 4.6/S DENOTES 4 NO. M16 GR COMMERCIAL GRADE BOLTS, SNUG TIGHT.
6M20 8.8/TF DENOTES 6 NO. M20 HIGH STRENGTH STRUCTURAL BOLTS FULLY TENSIONED IN A NO SLIP JOINT.
8M24 8.8/TB DENOTES 8 NO. M24 HIGH STRENGTH STRUCTURAL BOLTS FULLY TENSIONED IN A BEARING JOINT (SOME SLIP ALLOWED)
5) COMMERCIAL GRADE BOLTS SHALL CONFORM TO AS1111 AND AS4100. HIGH STRENGTH STRUCTURAL BOLTS SHALL CONFORM TO AS1252 AND AS4100. WELDS SHALL CONFORM TO AS1554 AND WELDING ELECTRODES TO AS1553.
6) STRUCTURAL STEELWORK SHALL HAVE THE FOLLOWING SURFACE TREATMENT IN ACCORDANCE WITH AS2312 AND THIS SPECIFICATION:
ALL EMBEDDED STRUCTURAL STEELWORK SHALL BE HOT-DIP GALVANISED. ALL EXPOSED STRUCTURAL STEELWORK SHALL BE GALVANISED OR EQUIVALENT. SHELTERED STEELWORK SHALL BE GALVANISED OR PAINTED WITH A PRIMER AND A ZINC-RICH PAINT. ALL SITE WELDS SHALL BE CLEANED AND MADE GOOD WITH TWO COATS OF A ZINC-RICH PAINT.

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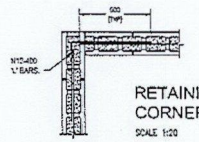
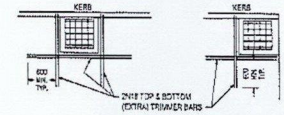
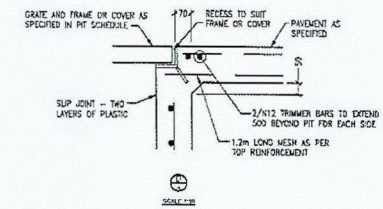
R.C. SPRINGETT
Registered Architect
NSW 6729




RETAINING WALL
CORNER DETAIL
SCALE 1:20




TYPICAL TRIMMER BARS AROUND PIT
SCALE 1:50

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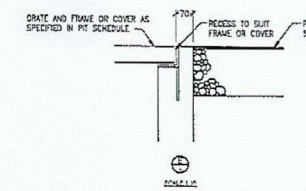


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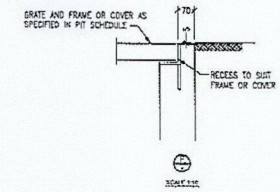


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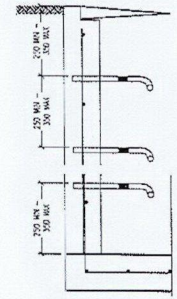


SECTION
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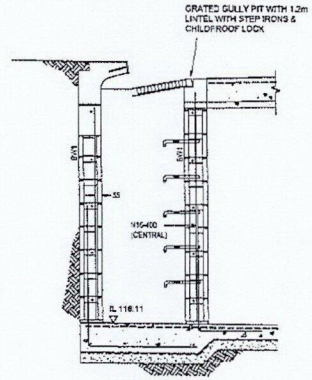


C/027 BELOW GROUND OSD
SECTION
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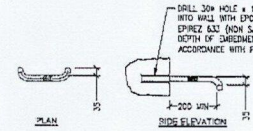
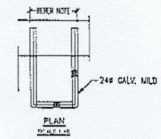



PLAN
SIDE ELEVATION




PLAN

### PIT ACCESS STEP DETAILS

NOTES
1. WHEN POSITIONED IN STRAIGHT ALIGNMENT, STEP TO BE 400 WIDE.
2. STAGGERED STEPS TO BE 200 WIDE, STEPS TO BE STAGGERED 200 CENTRE TO CENTRE FOR ALTERNATE STEPS.
3. SPACING OF STEPS TO BE UNIFORM TO WITHIN ±5mm IN EACH PIT.

CC

| | | | | | |
|---|---|---|---|---|---|
| Project | O.S.D. TANK DETAILS | Principal | WARRIEWOOD PROPERTIES PTY LTD | Job No. | 1736 |
| | | Scale | Date 24.6.14 Council Ref. | Dwg File Ref. (Proj.-Dwg No.) | |
| | | Drawn A.D. | Design A.H.D. LGA PITTWATER | | 1736C CC 01 [E] - 028 |
| | | Chkd | Drawn C.G.H. Project A.D. Client Ref. | | |

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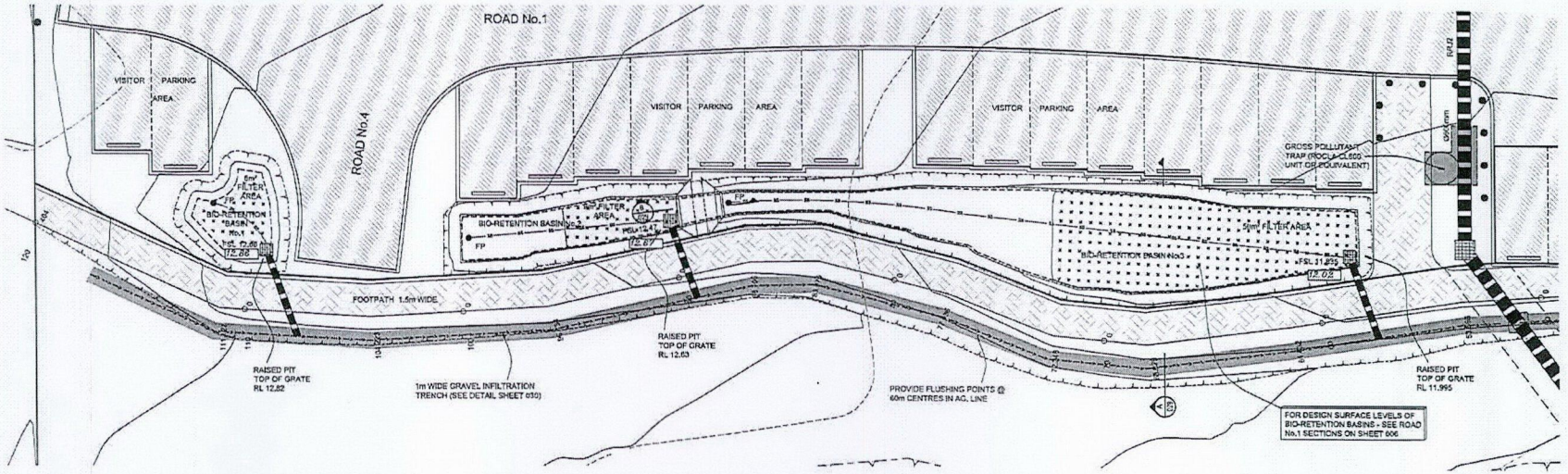
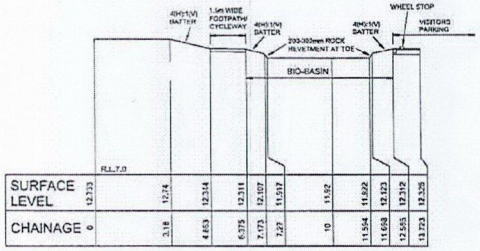
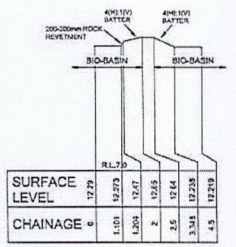


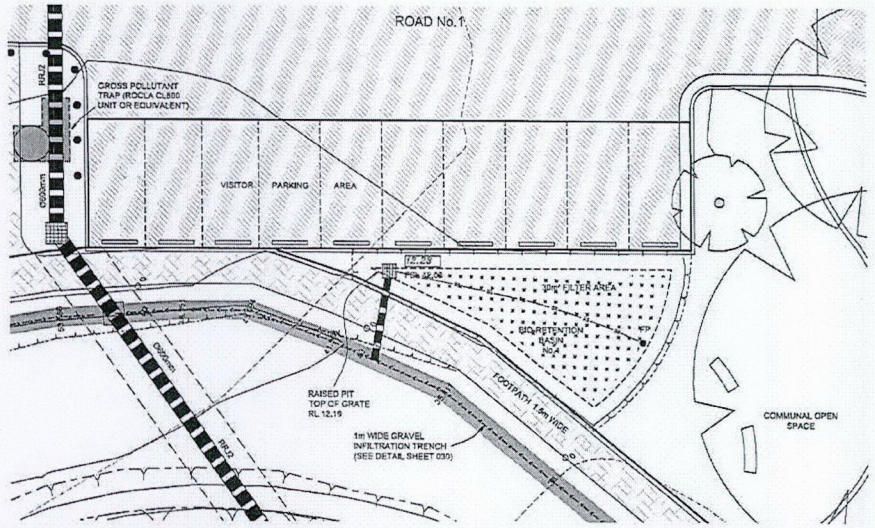




A 029 BIO-BASIN TYPICAL SECTION

H=1:100 V=1:100




B 029 BIO-BASIN SEPARATION MOUND SECTION




ALAN BARDSLEY
REGISTERED SURVEYOR
PREPARED BY SP SITE SETOUT DATED 30/06/2016
I HEREBY CERTIFY THAT THE ENGINEERING WORKS SHOWN ON THIS PLAN MARKED IN RED REPRESENT WORKS AS EXECUTED SURVEY DATED 26/06/2016

ORIGIN OF LEVELS: P.M.6871 R.L.11.04 (A.H.D.) VIDE SCIMS DATED 21/11/07

1:100 @ A1

Civil Cert | DIAL1100 | Project: BIO RETENTION BASIN PLAN & SECTIONS

Principal: WARRIEWOOD PROPERTIES PTY LTD

| Scale | Date | Counsel Ref. |
|---|---|---|
| 1:100 | 24.8.14 | |
| | Datum A.H.D. | L.G.A. PITTWATER |
| Calc's A.D. | Drawn C.C.H. | Proj.Mgr. A.D. |

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90th ANNIVERSARY 1923 - 2013

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Our Ref. 1736

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1736C CC 01 [E] - 029

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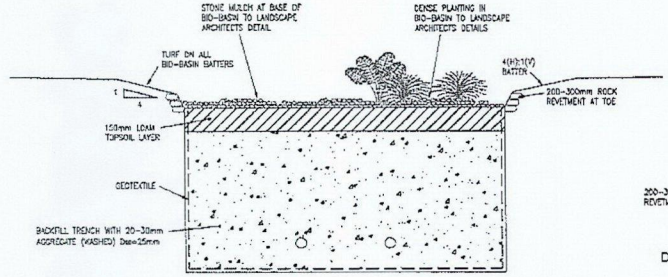
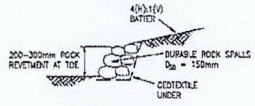


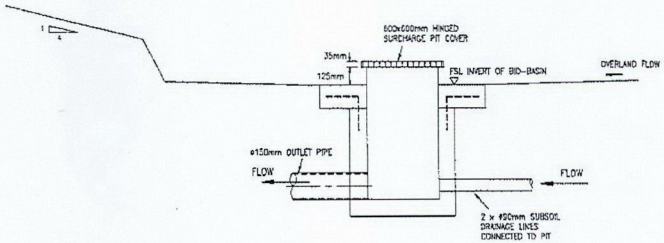

TYPICAL BIO-RETENTION BASIN DETAIL
NOT TO SCALE



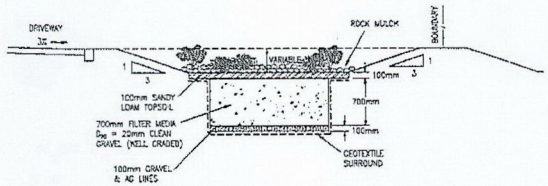

DETAIL FOR ROCK REVETMENT
NOT TO SCALE

| BIO-RETENTION BASIN TABLE | | | | | | |
|---|---|---|---|---|---|---|
| MEASURE TYPE | SURFACE AREA (m²) | INVERT LEVEL (m AHD) | PONDING DEPTH (mm) | FILTER AREA (m²) | TOTAL FILTER DEPTH (m) | PONDING VOLUME (m³) |
| BIO-BASIN No.1 | 10 | 12.500 | 400 | 5 | 1 | 3.2 |
| BIO-BASIN No.2 | 25 | | 400 | 13 | 1 | 6.6 |
| BIO-BASIN No.3 | 120 | | 400 | 60 | 1 | 16.2 |
| BI-BASIN No.4 | 45 | | 400 | 23 | 1 | 6.6 |
| LOT 1-25 FRONTYARD BIO-BASINS (17 No.) | 3m²/LOT | VARIES | 200 | 1.5m²/LOT | 0.9 | 0.6m³/LOT |
| LOT 9 - 25 BACKYARD BIO-BASINS (17 No.) | 6m²/LOT | VARIES | 400 | 3m²/LOT | 0.9 | 2.4m³/LOT |
| LOT 26 - 38 FRONTYARD BIO-BASINS (13 No.) | 5m²/LOT | VARIES | 400 | 2.5m²/LOT | 0.8 | 2m³/LOT |

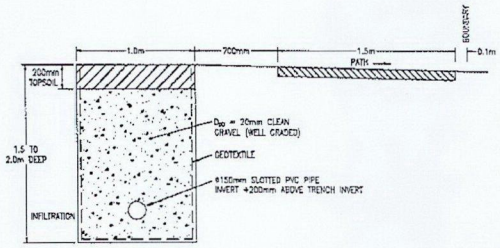
| O.S.D. TABLE | | | |
|---|---|---|---|
| MEASURE TYPE | STORAGE VOLUME (m³) | EFFECTIVE DETENTION (%) | O.S.D. VOLUME (m³) |
| LOT 9 - 25 RAINWATER TANKS (3kL) | 51 | 25 | 12.75 |
| FOCAL NEIGHBOURHOOD CENTRE RAINWATER TANK (10kL) | 10 | 25 | 2.500 |
| LOT 39-46 RAINWATER TANKS (1kL) | 8 | 25 | 2 |
| LOT 26-38 RAINWATER TANKS (3kL) | 39 | 25 | 9.75 |
| BIO-BASIONS 1-4 | 35.8 | 100 | 35.8 |
| ABOVE GROUND PONDING ROAD No.1 SAG | 71.7 | 100 | 71.7 |
| ROAD No.2 U/G O.S.D. TANK | 255 | 100 | 255 |
| LOT 8 - 25 FRONTYARD BIO-BASINS (3m² x 0.2m DEEP) | 10.2 | 100 | 10.2 |
| LOT 9 - 25 BACKYARD BIO-BASINS (6m² x 0.4m DEEP) | 40.8 | 100 | 40.8 |
| LOT 26 - 38 FRONTYARD BIO-BASINS (5m² x 0.4m DEEP) | 26 | 100 | 26 |
| TOTAL | | | 466.3m³ |
| TOTAL REQUIRED | | | 464m³ |




TYPICAL RAISED PIT DETAIL
(BIO-RETENTION BASIN OUTLETS)
NOT TO SCALE




TYPICAL LOT RAIN GARDEN DETAIL
NOT TO SCALE




TYPICAL GRAVEL INFILTRATION TRENCH DETAIL
NOT TO SCALE

CC

Civil Cert | DUAL1100 BEFORE YOU DIG

Project: BIO-BASIN & RAIN GARDEN DETAILS

Principal: WARRIEWOOD PROPERTIES PTY LTD

Scale: N.T.S. | Date: 24.5.14 | Council Ref.: | Datum: A.H.D. | L.G.A.: PITTWATER

Des'n: A.D. | Draft: C.G.H. | Prf/Man.: A.D. | Client Ref.:

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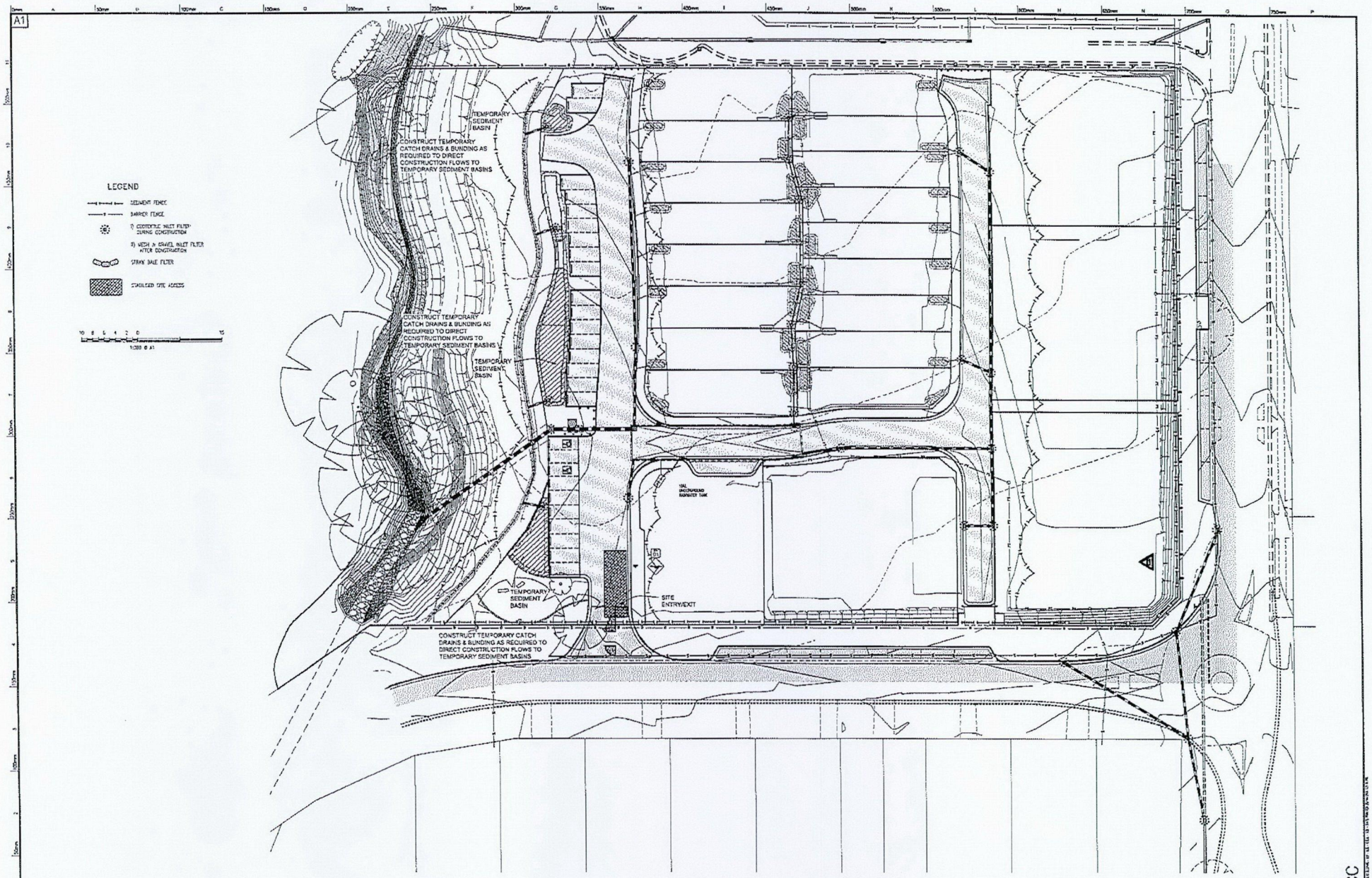


SEDIMENT & EROSION CONTROL PLAN

WARRIEWOOD PROPERTIES PTY LTD

| | | | |
|---|---|---|---|
| Scale | 1:200 | Date | 24.6.14 |
| Datum | A.H.D. | Council Ref. | |
| L.G.A. | PITTWATER | | |
| Calcs | A.D. | Drawn | C.G.H. |
| Proj.Assm. | A.D. | Client Ref. | |

CRAIG & RHODES

90th ANNIVERSARY 1923 - 2013

Your Ref. 1736

Dwg File Ref. [Rev] - Sheet No.

1736C CC 01 [E] - 031

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:1 of 42
Ref: /Src:X

# THE GROVE ESTATE

DP270822 M

## COMMUNITY MANAGEMENT STATEMENT

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REGISTERED 28-01-2016



TERMS OF INSTRUMENT NOT CHECKED IN LAND AND PROPERTY INFORMAT

DP270822


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# "THE GROVE ESTATE"

## COMMUNITY LAND DEVELOPMENT ACT 1989

## COMMUNITY LAND MANAGEMENT ACT 1989

## COMMUNITY MANAGEMENT STATEMENT

**WARNING**

The terms of this Management Statement are binding on the Community Association, each Subsidiary Body (if any) within the Community Scheme and each person who is a Lot Owner, lessee, Occupier or mortgagee in possession of a Community Development Lot within the Community Scheme.

## PART I

## BY-LAWS FIXING DETAILS OF DEVELOPMENT

These By-Laws relate to the control and preservation of the essence or theme of the Community Scheme and as such may only be amended or revoked by a unanimous resolution of the Community Association (see *Section 17(2) Community Land Management Act 1989*).

**1. THEME**

**1.1 Theme**

The management objectives of the Estate are to maintain a prestigious residential development within a controlled environment.

**2. ARCHITECTURAL AND LANDSCAPING CODE**

**2.1. Architectural and Landscape Standards**

(a) The Community Association may from time to time make Rules and Regulations pursuant to and in accordance with By-Law 11 prescribing architectural and landscape standards for the Community Scheme ("Standards") subject to the following:

(i) No dwelling or structure shall exceed 2 storeys in height.
(ii) External structures and fixtures must not be visible from outside the Lot.
(iii) No solar panels are to be visible from outside the Lot.
(iv) No carport is permissible on any Lot.
(v) No security screens or doors are permissible on any Lot.
(vi) Sheeting, screens or shading devices must not be attached to first floor balconies.
(vii) Shading devices or external shutters are not permitted, unless already installed by the Original Proprietor.
(v) Flyscreens may be installed provided they match the powder coated finish of windows and doors installed by the Original Proprietor.
(viii) External colours and materials must remain consistent with colours and finishes provided by the Original Proprietor. Refer to external colour schedule annexed.
(ix) Architectural intent must remain consistent with the quality and standard of dwellings developed at the Estate.
(x) Plantings on Community Property must remain consistent with species installed by the Original Proprietor.
(xi) Any replacement planting in a private Lot and visible outside the Lot must be consistent in type, style and species of planting installed by the Original Proprietor. In particular, the

feature tree in the front of the Lot (being that part of the Lot with a driveway) being Magnolia Little Gem for Lots 9-16 and Elaeocarpus Eumundi Quandong for Lots 17-25.

(b) The Original Proprietor may prescribe the Standards for any Community Development Lot.

#### 2.1.1 Comply with Council

The landscaping should also comply with the requirements of Council's Development Control Plan relevant to the Community Scheme

#### 2.1.2 Undeveloped Community Development Lots

The Original Proprietor or Owner of any undeveloped Community Development Lot must ensure that the landscaping is of comparable standard and compatible with the landscaping provided in the initial development stages, which will not require the approval of the Community Association.

### 2.2 Approval Required for Alterations

An Owner must not, except with the approval of the Community Association and subject to 2.1 (a) and (b), make any alterations or additions to a Lot including without limitation an alteration to the colour of any improvements constructed thereon or the addition to the Lot of any sign, any transmitting or receiving device, screen, pergola or awning or anything else.

#### 2.2.1 Owner to Provide Plans and Specifications

At the time of request for approval in accordance with By-Law 2.2 an Owner who wishes to alter or add to a Lot shall provide to the Secretary of the Executive Committee a copy of such plans and specifications as are sufficient to show the nature, dimensions, colour and location of the proposed alterations or additions together with any additional plans, specifications and/or information which the Community Association may reasonably require to properly consider the Owner's request

#### 2.2.2 Community Association Not to Unreasonably Refuse

The Community Association will promptly consider and give its approval or refusal to any request made by an Owner for its approval under By-Law 2.2 and shall not unreasonably refuse any such request where the proposed alteration or addition is in harmony with the Standards.

#### 2.2.3 Community Association may impose Conditions of Approval

The Community Association may impose conditions on an approval given pursuant to By-Law 2.2 including without limitation a condition requiring the Owner to provide a bank guarantee in favour of the Community Association or other sufficient security on account of any damage that may be caused to Community Property as a result of any such alteration or addition provided that any bank guarantee or other security so given shall be returned to the respective Owner on completion of the alteration or addition subject to the right of the Community Association to deduct any such amount as is reasonably necessary to cover the cost of repairing any damage caused by the Owner to Community Property.

### 2.3 Maintenance of Landscaping

#### 2.3.1 Maintenance of Landscaping on Community Property

The Community Association may enter into and maintain a contract containing such terms and conditions as are reasonably satisfactory to the Community Association with reputable and appropriately qualified and insured persons or companies for the provision of landscaping services to the Community Association for the Community Property.

All plants and landscaping on the site listed above are to be maintained by the Community Association at all times. The Community Association must ensure that any plants that die or are removed must be replaced with plants of the same species or similar appearance and of a similar stage of growth.

#### 2.3.2 Maintenance of Landscaping on Lots

The Owner of a Lot shall keep the landscaped areas of the Lot clean and tidy and in a state of good repair and condition.

### 2.4 Maintenance and Repairs

The Owner of a Lot shall effect all maintenance and repairs to the Lot in a proper and workmanlike manner to the reasonable satisfaction of the Executive Committee.

#### 2.4.1 Failure to Carry Out Maintenance and Repairs

(a) The Community Association may give notice to the Owner of a Lot requiring him to comply with the terms of this By-Law.

(b) The Community Association shall be empowered to carry out maintenance and repairs to a Lot if the Owner should fail to carry out the required maintenance and repairs under By-Law 2.4. and 2.3.2. The costs incurred by the Community Association in carrying out any work referred to in this clause may be recovered by the Community Association as a debt from the levy account of the Owner of the Lot.

## PART 2

## RESTRICTED COMMUNITY PROPERTY

These by-laws may not be amended during the Initial Period and may only be amended after the expiry of the Initial Period by special resolution and with the written consent of each person entitled by the by-law to use the Restricted Community Property (see *Section 54 Community Land Management Act 1989).*

### 3. RESTRICTED PROPERTY

The Owner of the Retail Lot shall be entitled to the non-exclusive use and enjoyment of the Open Space Area denoted 'A' on the Community Property Plan attached to this management statement for the purpose of passive recreation provided:

(a) the Open Space Area is kept clean and tidy after use;
(b) noise is kept to a minimum so that is not likely to interfere with other Owners; and
(c) The Open Space Area shall not be used before 7.00 am and after 9.00 pm unless prior approval from the Community Association has been obtained.

The Owner(s) of Community Development Lot 8 (including lots created by the subdivision of Lot 8) shall be entitled to the exclusive use of car spaces labelled V8 and V9 on the Community Property Plan attached to this management statement for the purposes of car parking. The Owner(s) shall be entitled to install parking equipment such as parking locks and barriers to secure and protect these car spaces.

### 4. DEVELOPMENT RIGHTS

### 4.1 Development Rights

The Owner for the time being of all Community Development Lots and all persons authorised by it shall have the following rights for the purpose of enabling that Original Proprietor to complete the development of the Community Property (including altering, amending, varying or adding to the Community Property) and Community Development Lots in stages and carry out Development Activities on the Community Property:

(a) complete an unrestricted access by foot or motor vehicle over Community Property;
(b) the right to park motor vehicles and equipment on Community Property;
(c) the right to place on or attach to Community Property temporary offices, sheds, depots, building materials, cranes and other equipment;
(d) the right to install Services on Community Property;
(e) the right to connect Services with Community Property;
(f) the right to attach and place marketing and advertising signs, placards, banners, notices or advertisements on the Community Property; and
(g) the right to conduct sales and marketing activities (including auctions) on the Community Property.

**4.1.1 Development Rights End**

The rights of the Original Proprietor under this by-law:

(a) in relation to the Community Scheme as a whole, end when the Original Proprietor notifies the Community Association that building and development work has finished; and

(b) in relation to part of the Community Scheme, end when the Original Proprietor notifies the Community Association that building and development work for that part of the Community Scheme is finished.

**4.2 Development in Stages**

(a) For the purpose of By-Law 4, the following undeveloped land in the Community Plan is referred to as "Stage Lots". Stage One means the Retail Lot and Community Development Lots 3 and 4. Stage Two is Community Development Lots 5 to 8 inclusive.

(b) The Owner for the time being of all Community Development Lots and all persons authorised by it shall have the following rights for the purpose of enabling that Original Proprietor to complete the development of the Community Property (including altering, amending, varying or adding to the Community Property) and Community Development Lots in stages and carry out Development Activities on the Community Property:

(i) the right to build on and develop the Stage Lots in stages;

(ii) the right to carry out building and development work in its discretion;
(iii) the right to do demolition work, building and associated work on the Stage Lots;
(iv) the right to do landscaping and associated work on the Stage Lots;
(v) the right to use any part of the Stage Lots to exercise its rights under this by-law;
(vi) the right to subdivide land in on the Stage Lots;
(vii) the right to put marketing and advertising signs on the Stage Lots;
(viii) the right to conduct real estate activities on the Stage Lots including, without limitation, sales, auctions and leasing; and
(ix) the right to carry out other works which the Original Proprietor considers reasonably necessary or desirable in order to develop and construct buildings on the Stage Lots and carry out any of the rights and objectives contemplated by this by-law.

**4.3 Original Proprietor's Obligations**

(a) The Original Proprietor must:

(i) repair any damage caused to the Community Property as a result of the Development Activities as soon as practicable after that damage occurs;
(ii) keep interference with the use by Owners of Lots to a minimum so far as is consistent with the

Development Activities;

(iii) maintain any Community Property that the Original Proprietor has been given the exclusive rights to use; and

(iv) on completion each part of the Development Activities, leave the relevant Community Property areas in a clean and tidy condition.

(b) Owners acknowledge that as a result of the Original Proprietor's rights to carry out the Development Activities set out in this by-law 4, Owners may be subjected to noise and dust resulting from the Development Activities.

### 4.4 Levies

There are no matters relating to the determination, imposition and collection of levies arising with respect to the rights under this by-law 4.

## PART 3

## MANDATORY MATTERS

These are matters which must be addressed in every Management Statement.

### 5. COMMUNITY PROPERTY

### 5.1 Details of Community Property

The Community Property comprises the following:

(a) Open Access Ways;
(b) Street Lights;
(c) the Water Management Facilities;
(d) Foot paths and Walkways;
(e) Retaining walls;
(f) Open area (including Open Space Area);
(g) Services;
(h) Landscaping; and
(i) Estate feature walls and signage.

### 5.2 Responsibility of Community Association

The Community Association is responsible for the control, management, operation, maintenance, replacement and repair of Community Property (including rapid repair of vandalism and graffiti).

### 5.3. Permitted Uses of the Community Property

An Owner shall not except with the prior approval of the Community Association use any part of the Community Property other than in accordance with the uses for which the respective part of the Community Property was intended to be used and shall immediately notify the Community Association upon becoming aware that any part of the Community Property is damaged or otherwise in a state of disrepair.

### 5.4 Open Access Ways

That part of the Community Property designated as an open access way in the Plan of Access Ways is an Open Access Way. No part of the Community Property is designated as a private access way.

#### 5.4.1 Responsibility

The Community Association shall be responsible for the control, management, operation, maintenance and repair of the open access way.

The Community Association may enter into and maintain a contract containing such terms and conditions as are reasonably satisfactory to the Community Association with reputable and appropriately qualified and insured persons or companies for the provision of control, management, operation, maintenance and repair of the open access way.

#### 5.4.2 Conditions of Use

The following conditions apply to the use of the Open Access Way:

(a) An Owner or visitor shall not drive, park or stand any vehicle on the Open Access Way unless:

(j) if the vehicle must be registered under Traffic Laws, it is registered and complies with the Traffic Laws;

(ii) if a license is required for the use of the vehicle on a public road, that person holds a current drivers licence under the Traffic Laws;

(iii) temporary parking is required in the designated visitor parking spaces; and

(iv) resident Owners must not park in designated visitor or disabled parking spaces.

(b) An Owner or visitor must not:

(i) drive, park or stand any vehicle in a manner that is or may be dangerous, causes obstruction or prevents or restricts the free movement of vehicles or pedestrians;

(ii) sound any horn other than in an emergency;

(iii) park or stand an unregistered vehicle on any part of the Open Access Way;

(iv) park any vehicle, including trailer, truck, caravan etc on any part of the Open Access Way at anytime, excluding visitors in designated spaces; and

(v) repair any vehicle or motor mower on the Open Access Way, except where a vehicle experiences an unforseen breakdown requiring professional servicing e.g. NRMA.

(c) Any person driving a vehicle in the Open Access Way must not exceed 20 kph.

(d) An Owner of a Lot must not park vehicles on the Open Access Way on the designated day for Council waste collection.

(e) In the event that an Owner of a Lot requires any form of emergency service the condition of this by-law will not apply, provided sufficient room is available for other Owners using the Open Access Way.

(f) A resident Owner must provide the Community Association with the registered number of each of its vehicles.

If considered necessary the Executive Committee shall have the power to make any required adjustment to the conditions of usage.

## 6. INTERNAL FENCING

### 6.1 Application of Dividing Fences Act 1991

Subject to *Section 117 of the Community Land Management Act 1989*, the provisions of the Dividing *Fences Act 1991* shall have effect in relation to dividing fences between:

(a) one Lot and another Lot;

(b) a Lot and Community Property;

### 6.2 Owner to Reimburse Community Association

Where pursuant to *Section 117 of the Community Land Management Act 1989* the Community Association is obliged to make a contribution to an Owner of land outside the Community Parcel in relation to a dividing fence between that land and a Lot within the Community Parcel the Owner, being the Owner of that Lot, shall reimburse the Community Association in respect of any such contribution.

### 6.3 Owner to Maintain

An Owner of a Lot must maintain any fences including any dividing fences in good condition and repair and, if in need of repair or replacement, must to the extent reasonably possible use the same materials having the same colour, style, appearance and characteristics as, or be consistent with, the current or previously existing fence (as the case may be) promptly undertake such repair or replacement.

In respect of a dividing fence between one Lot and another Lot (excepting a Lot that is Community Property); the obligations of the Owner of each Lot under this By-Law are joint and several in terms of the Community Association being entitled to require the Owner to comply with this clause.

### 6.4 Owner not Permitted To

An Owner is not permitted to:

(a) erect a fence on the internal front street alignment or between the internal front street boundary and the building line.

(b) construct any new fence on a Lot without the approval of the Executive Committee.

## 7. GARBAGE

### 7.1 Garbage Container

An Owner of a Lot must provide and use a garbage container as required by the Council from time to time for the removal of garbage from the Lot.

### 7.2 Storage

An Owner must keep any garbage container and/or garbage secure and:

(a) so that it does not emit odours; and

(b) hidden from view from outside the Lot and is not visible externally from the Lot unless the garbage container has been placed on the designated area set aside on the Community Property to enable the collection and removal of garbage by the Council on that or the following day.

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### 7.3 Make Available

The Owner of a Lot must ensure that garbage in his/her garbage bin and on or from the Lot is made available for collection by the Council in accordance with the Council's by-laws and ordinances relating to the disposal and collection of garbage.

Garbage containers, including for recyclable material, must only be placed in the designated collection area no more than 12 hours before or 12 hours after the scheduled Council collection time.

### 7.4 Recyclable Material

An Owner must ensure that recyclable materials are made available for collection by the Council in accordance with the Council's by-laws and ordinances relating to the disposal and collection of recyclable materials.

### 7.5 Access

An Owner of a Lot shall ensure that no vehicles are parked on the Open Access Way on the designated day for Council waste collection.

### 7.6 Garbage Collection

If required by Council, the Community Association must permit Council to do anything reasonably necessary for carrying out garbage collection from the Community Parcel, including passing over or remaining on the Open Access Way on foot or within garbage collection vehicles.

The Community Association releases the Council from any liability for damage or injury to the Open Access Way caused or contributed to by the Council whilst collecting garbage, except to the extent that the damage or injury is caused or contributed to by the negligence of the Council or its service providers.

### 7.7 Removal of Garbage and Waste

The Community Association may conclude such arrangements as it from time to time considers appropriate, whether with the Council or with other Service Providers, for the removal of garbage and other waste products left out for collection by either the Community Association or by the Owners of Lots. Amongst other matters, any such agreement may require the Community Association to indemnify the Council or any other Service Provider for damage sustained by the Community Association, including damage to the road pavement of the Open Access Way, arising out of or relating to the provision of any garbage removal or other waste removal service.

## 8. SERVICES

### 8.1 Services

This Management Statement includes a Services Plan showing the location of the following services:

(a) Electricity - Ausgrid
(b) Gas – Jemna Gas
(c) Water – Sydney Water Corporation
(d) Sewer – Sydney Water Corporation
(e) Stormwater - Community Association
(f) Telecommunications – Telstra, NBNCo.

### 8.2 Statutory Easements

On installation of a Service Line a statutory easement will be created over parts of the Community Property for the provision of services through the Service Lines.

### 8.3 Maintenance and Repairs

The Service Providers and other owners of Service Lines will operate, maintain and repair their respective Service Lines except as otherwise provided in Part 5.

### 8.4 Changes to Services Plan

If Service Lines are installed in locations which differ from the location shown in the Services Plan or further services are provided;

(a) the Association must submit a later Services Plan showing the true location of all Service lines to the Owners of any Lots that will be burdened by the easement in respect of the Service Line ("Burdened Owner").

(b) The Burdened Owner must give its consent to and duly sign and procure the consent and signature of any mortgagee and lessee of the Lot to the later Services Plan and provide the Association with all necessary documents (including any Certificate of Title) to enable registration of the alter Services Plan.

(c) On receipt of the alter Services Plan and all necessary documents, the Association must promptly procure registration of the later Services Plan.

### 8.5 Act or Omission of Owner

Where the Community Association is responsible for the repair and maintenance of Service Lines the Association will do so unless any requirement for repair or maintenance is the result of an act or omission of the Owner of a Lot in which case the Owner of that Lot will be responsible for the cost of any such repair or maintenance. The Community Association may if it thinks fit carry out work required as a result of the act or omission of the Owner of a Lot and shall be entitled to recover the cost of such work as a debt from the levy account of the Owner.

In respect of the internal connections within Community Development Lots for the services of electricity, gas, water supply, sewerage, stormwater, telecommunications and broadband referred to in 8.1 (a) to (g), be the responsibility of the Owner of the Lot concerned.

## 9. INSURANCE

### 9.1 Compulsory Insurance

The Community Association shall effect all insurances which it is required to effect from time to time under each of the *Community Land Development Act 1989* and *Community Land Management Act 1989* or any other Act in such manner and with such insurer as is provided therein or in the Regulations made pursuant thereto or in the event there is no such provision in the manner determined by the Community Association from time to time.

### 9.2 Optional Insurances

The Community Association may effect such insurances other than the insurances referred to in By-Law 9.1 hereof which it considers necessary in the best interests of Owners.

### 9.3 Insurance in respect of Lots

Each Owner shall be responsible for insuring against all and any risks of being the Owner of a Lot including without limitation the risk of injury to persons or of damage or destruction to any improvements constructed thereon.

### 9.4 Obligation to Rebuild

If any improvement constructed upon any Lot or any part thereof is destroyed or damaged by fire, flood,

lightning, storm, tempest or other disabling cause, the respective Owner shall rebuild or reinstate the respective improvement or part thereof within a reasonable time after such destruction or damage and such rebuilding or reinstatement shall be deemed to be an alteration or addition for which the Owner is required to obtain approval from the Executive Committee pursuant to By-Law 2.

## 10. EXECUTIVE COMMITTEE

### 10.1 The Executive Committee

The Executive Committee and the Chairperson, Secretary and Treasurer thereof must respectively be elected and appointed in accordance with *Division 2 of Part 2 of the Community Land Management Act 1989*.

#### 10.1.1 Notice of Executive Committee Meetings

The Executive Committee shall cause notice to be given to Owners in the manner prescribed by the Rules and Regulations (or if no manner is prescribed, in such other manner as it considers appropriate having regard to where Owners reside) to Owners of its intention to hold a meeting setting out the time, location and reasonable details of the agenda for the meeting not less than seventy two (72) hours prior to the scheduled commencement time of the meeting as set out in such notice. The Executive Committee shall not at any meeting held following the giving of such notice deal with any business the reasonable details of which were not included in the agenda set out in such notice.

#### 10.1.2 Owners at Executive Committee Meeting

An Owner or a nominee for the Owner is entitled to attend a meeting of the Executive Committee but may not address the meeting unless authorised by resolution of the Executive Committee and shall not be entitled to vote thereat.

#### 10.1.3 Voting in writing

Where:

(a) By-Law 10.1.1 has been complied with in relation to a meeting;

(b) each member of the Executive Committee has been served with a copy of any motion for a proposed resolution to be submitted at that meeting; and

(c) the proposed resolution has been approved in writing by a majority of the Executive Committee, then the resolution is, if a notice has not been given under *section 38(3) of the Management Act*, as valid as if it had been duly passed at a duly convened meeting of the Executive Committee, even though the meeting was not held.

#### 10.1.4 Minutes to be kept

(a) The Executive Committee shall within fourteen (14) calendar days after each meeting cause a copy of the minutes of the meeting prepared in accordance with *Section 38(7) of the Community Land Management Act 1989* to be given in the manner prescribed by the Rules and Regulations to all Owners (or if no manner is prescribed, in such a manner as the Executive Committee considers appropriate having regard to where the Owner or Occupiers reside).

(b) Minutes of the meetings of the Executive Committee and all resolutions passed must be placed with the minutes of the General Meetings of the Association.

#### 10.1.5 Conduct, Place and Frequency of Meetings

The Executive Committee shall:

(a) conduct its meetings in accordance with the Rules and Regulations or if there are no such Rules and Regulations which relate thereto in such manner as the Executive Committee thinks fit;

(b) hold its meetings as often as is necessary having regard to the interest of Owners and its obligations and functions under this Management Statement, the Rules and Regulations or any law;

(c) hold its meetings at such place as it considers appropriate and if the Rules and Regulations so provide may hold its meetings by correspondence.

**10.2 Powers and Duties of Secretary**

The powers and duties of the Secretary of the Association are:

(a) preparing and distributing minutes of meetings and resolutions of the Association and the Executive Committee;

(b) giving on behalf of the Association and the Executive Committee, notices required to be given under the Management Act;

(c) maintaining the Association Roll;

(d) making available for inspection, on behalf of the Association, the documents and records set out in *clause 1 of Schedule 4 of the Management Act;*

(e) supplying on behalf of the Association, certificates in accordance with *Schedule 4 of the Management Act;*

(f) answering communications addressed to the Association of the Executive Committee;

(g) convening meetings of the Executive Committee and the Association (other than the First Annual General Meeting);

(h) performing and exercising matters of an administrative or secretarial nature which are associated with the functions and duties of the Association or the- Executive Committee, and;

(I) keeping records for the Association under:

(i) *Part 3 of Schedule 1 of the Management Act*; and
(ii) *Part 3 of Schedule 3 of the Management Act.*

**10.3 Powers and Duties of Treasurer**

The powers and duties of the Treasurer of the Association include

(a) notifying Owners of Lots of contributions levied pursuant to the Management Act or the Management statement and collecting all contributions;
(b) receiving, acknowledging, banking and accounting for all money paid to the Community Association;
(c) preparing any certificate applied for under and in accordance with *section 26 and clause 2 of Schedule 4 of the Management Act;*
(d) keeping the prescribed accounting records referred to in clause *10 of Schedule 1 of the Management Act;*
(e) preparing the prescribed financial statements referred to in *clause 11 of Schedule 1 of the Management Act*; and
(f) the functions set out in *clause 36(1) of the Management Act.*

### 10.4 Executive Committee and Loss or Damage

The Executive Committee and its members shall not be liable for any loss or damage which arises as a result of any act done by the Executive Committee or the Owner in its, his or her respective capacity as the executive Committee or member of the Executive Committee except fraud on the part of the Executive Committee or that member.

#### 10.4.1 Executive Committee Reimbursement for Out of Pocket Expenses

Members of the Executive Committee are not entitled to any remuneration for the performance of their functions but are entitled to reimbursement for reasonable out-of-pocket expenses incurred by them in the performance of their functions.

### 10.5 Contributions

(a) An Owner must pay:

(i) contributions levied under this Management Statement and the Community Titles Legislation when they fall due; and

(ii) on demand, any costs of the Community Association incurred in connection with the contemplated or actual enforcement or preservation of any rights under the by-laws in relation to the Owner.

(b) If a contribution or amount payable under this Management Statement or the Community Titles Legislation is not paid when due, then Interest is payable under *section 79 of the Management Act.*

(c) Nothing in this by-law prevents the Community Association from recovering any amount exceeding interest calculated under this by-law as a consequence of any amount not being paid when due.

(d) An Owners ledger provided by, its Managing Agent or the secretary of the Executive Committee about a matter or a sum payable to the Community Association is prima facie evidence:

(i) the amount; or

(ii) any other fact stated in that certificate.

### 10.6 Decision Final

A decision of the Community Association made in accordance with these By-Laws shall be final and binding on the Owner, excluding the Original Proprietor.

## PART 4

## OPTIONAL MATTERS

### 11. RULES AND REGULATIONS

### 11.1 Community Association may make Rules and Regulations

The Community Association may at any time and from time to time make, amend, cancel, add to or suspend

the rules and regulations (" Rules and Regulations") which are not inconsistent with any By-Laws contained in this Management Statement or any function or obligation imposed on the Community Association under any Act. Each Owner shall be bound by the Rules and Regulations. If there is any inconsistency between the By-Laws contained in this Management Statement and any of the Rules and Regulations, the By-Laws contained in this Management Statement shall prevail.

**11.1.1 Copy of Rules and Regulations**

The Community Association must maintain and make available on request a copy of the current Rules and Regulations.

The Community Association must upon making, amending, cancelling or suspending any rule or regulation contained in or to be added to the Rules and Regulations, distribute a copy of the additional or altered rule or regulation to each Owner.

**11.1.2 Owners shall Observe Rules and Regulations**

Each Owner shall at all times observe and comply with the Rules and Regulations made in accordance with By-Law 11 and shall not do, permit or suffer to be done anything contrary thereto. A failure by an Owner to observe and comply with any rule or regulation contained in the Rules and Regulation shall constitute a breach by that Owner of this By-Law. An Owner shall be responsible for ensuring that the By-Laws contained in this Management Statement and the Rules and Regulations are continuously observed and complied with by all of that Owner's invitees and any persons claiming through or under that Owner. A failure by any such invitee or other person claiming through or under an Owner to observe and comply with any By-Law contained in this Management Statement or of the Rules and Regulations shall constitute a breach of this By-Law 11 by the Owner.

**11.1.3 Community Association to Give Notice**

In the event of a breach by a Owner of a By-Law contained in this Management Statement or of any rule or regulation contained in the Rules and Regulations, the Community Association shall (except in the case of a breach requiring the Community Association to act immediately to prevent damage to property or injury to person) serve a notice upon such Owner specifying the By-Law(s) and/or rule or regulation which the Owner has breached and the works to be carried out and/or the matters to be attended to by the Owner and the time within which such works must be carried out or matters attended to so mat the Owner shall no longer be in breach of the said By-law(s) or Rules and Regulations. In the event that such breach by any Owner has resulted in damage to any part of the Community Property such notice shall specify the damage to be repaired by the Owner and the period of time within which such repairs shall be completed.

**11.1.4 Failure to comply with Notice**

Where the Owner fails to comply with the notice served upon the Owner by the Community Association under By-Law 11.1.3, then the Community Association may, as soon as practicable thereafter, where appropriate:

(a) apply to the Community Schemes Commissioner Board for an order (or interim order as the case may be) directing the Owner to observe the said By-Law or rule or regulation in respect of which the Owner is in breach; or

(b) carry out the works and/or repairs set out in such notice and/or attend to the matters set out in such notice which should have been attended to by the Owner.

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#### 11.1.5 Power of Entry of Community Association

In addition to the powers conferred by *Section 60 of the Community Land Management Act 1989* upon the Community Association to enter upon any part of the Community Property for the purposes as specified therein, the Community Association shall also have the power to enter any part of the Community Property including any part of a Lot for the purpose of performing any of the functions conferred or imposed upon the Community Association by any Act or by this Management Statement

#### 11.1.6 Reimbursement of Costs, Charges and Expenses

A Owner must pay or reimburse the Community Association on demand for all costs and expenses incurred by the Community Association in connection with the contemplated or actual enforcement, or preservation of any rights under the By-Laws in relation to the Owner including, without limitation, all expenses incurred in retaining any independent consultant or other person to evaluate any matter and its administration costs in connection therewith.

#### 11.1.7 Community Association Not to be Liable

The Community Association shall not be liable for any loss or damage howsoever caused or arising from the non-enforcement of any By-Law contained in this Management Statement or of any of the rules and regulations contained in the Rules and Regulations in accordance with this By-Law 11.

#### 11.1.8 Owner to Comply at Own Expense

An Owner shall comply with the obligations under these By-Laws and the Rules and Regulations at the Owner's own cost except where the By-Laws or Rules and Regulations provide to the contrary.

### 11.2 Owner to Compensate

The Owner of a Lot shall be liable to compensate the Community Association in respect of all damage to the Community Property or personal property vested in it caused by such Owner of the Lot or their respective tenants or invitees.

## 12. BEHAVIOUR

### 12.1 Appearance

The Owner of a Lot must not hang any washing, bedding, towel, clothing, or other article on the outside of a building on a Lot or on any other part of the Lot so that it is visible externally from the Lot within or outside the Community Scheme.

**12.2 Noise Control and Behaviour** The Owner of a Lot must not create any noise or behave in a manner which interferes or may interfere with the peaceful use and enjoyment of the Owner of another Lot or any person lawfully using Community Property, nor shall they allow any invitee to create any noise or behave in a manner which interferes or may interfere with the peaceful use and enjoyment of the Community Property by any Owner.

These conditions may be relaxed with the consent of the Community Association for special event, such as New Years Eve.

### 12.3 Compliance with Requirements of Authorities

An Owner of a Lot must comply on time with all requirements and orders of authorities and all laws in connection with the Lot and use or occupation of the Lot.

### 12.4 Communications with Community Association

Complaints, notices or applications to or requests for consideration of matters by the Community Association must be in writing and forwarded to the Managing Agent of the Community Association or the Secretary if no managing agent is appointed.

### 12.5 Communications from Community Association

An approval, notice or authorisation by the Community Association under the By-Laws must be in writing.

## 13. RIGHTS TO ENTER CONTRACTS

### 13.1 Negotiation and Administration of Service Contracts

To allow the Community Association to more effectually perform the functions conferred and obligations imposed on it by any Act or by this Management Statement the Community Association may enter into any contracts for the provision of any service or services to be performed by any third party which contracts shall be on such terms and conditions as the Community Association reasonably determines and the consideration payable under such contracts shall be paid out of contributions to either of the Administrative or Sinking Funds levies on Owners.

### 13.2 Managing Agent

In the event that the Community Association appoints a managing agent pursuant to *Section 50 of the Community Land Management Act 1989*, the Community Association may delegate to the managing agent, in addition to the functions the Community Association is entitled to delegate to the managing agent under the said Act, the functions imposed upon the Community Association by this Management Statement or by any other Act. The consideration or fees payable to the managing agent for the performance of any of the functions of the Community Association delegated to the managing agent shall be payable out of the Administrative Fund.

### 13.3 Employees and Consultants

The Community Association may employ such staff advisers, consultants, agents or lawyers as it may require, whether on a permanent, part time or casual basis, to assist with its management control and maintenance of the Community Property and the performance of the functions conferred and obligations imposed on the Community Association by any Act or this Management Statement.

### 13.4 Agreement between Community Association and an Owner

A Community Association may only enter into an agreement under *Section 22 of the Community Land Management Act 1989* which has the effect of conferring a benefit on one (1) or some but not all Owners where the Community Association charges such Owner or Owners a reasonable fee for receiving such benefit.

### 13.5 Owner Not to Instruct

An Owner shall not instruct or request that any contractor, employee, consultant, agent or lawyer appointed or employed by the Community Association to do any act or thing, without the prior approval in writing of the Community Association. Any Owner who gives any such instruction or makes any such request shall be liable for all costs or expenses incurred by the Community Association as a consequence thereof.

## 14. INTEREST

### 14.1 Interest

If any monies payable by a Owner to the Community Association being other than a contribution to the administration fund or sinking fund levied by the Community Association under the *Community Land Management Act 1989* are not paid on their due dates for payment of the same as specified in any notice

given by the Community Association to that member or as otherwise specified, that Owner shall pay simple interest on the total amount which remains unpaid from the day after the date upon which the monies became due and payable up to and including the date of actual payment at the rate of ten percent (10%) per annum.

### 14.2 Recovery of Costs

In addition to the amounts recoverable under *Section 20(13) of the Community Land Management Act 1989* the Association shall be entitled to recover all expenses incurred in recovering these amounts.

## 15. COMMUNITY PROPERTY AND COMMON PROPERTY

### 15.1 Obstruct

The Owner of a Lot must not except with the approval of the Community Association leave anything on or obstruct the use of Community Property.

### 15.2 Damage

The Owner of a Lot must not mark, paint, drive nails or screws or the like into, or otherwise damage or deface Community Property including without limitation any structure, equipment, fitting, appliance, paved areas, landscape feature, lawn, garden, tree, shrub, plant or flower which is part of or situated on Community Property.

### 15.3 Own Purpose

The Owner of a Lot must not, except with the approval of the Community Association or pursuant to By-Laws in force in the Community Scheme, use for his own purposes any part of Community Property.

## 16. ACCESS BY AUSTRALIA POST

(a) The Community Association must do all that is reasonable required to ensure that Australia Post or any other relevant Government Agency has access to the Community Parcel for the purpose of mail delivery.

(b) The Owner of a Lot must maintain, repair and replace at the Owners cost the letterbox on their Lot. The letterbox may only be used for the purpose of a letterbox.

(c) The Owner must not remove or replace a letterbox unless the letterbox is damaged or destroyed in which case:

- (i) the structure of the replacement letterbox must be in accordance with the Standards; and
- (ii) the replacement letterbox must be located in the same position as the original letterbox.

## 17. PRIVATE SERVICES

(a) The Community Association may, on its own behalf:

- (i) provide Private Services to the Owner of a Lot;
- (ii) arrange for the installation and maintenance of Service Lines for the provision of Private Services; and
- (iii) contract with persons to monitor or provide, in part or in whole, Private Services.

(b) The Owner of a Lot must not:

- (i) carry out any works which interfere with Private Services;
- (ii) carry out any works which interfere with Private Services except with the approval of the Community Association; or
- (iii) obstruct access to, overload or damage Private Services.

## 18. CONTROL OF LESSEES / LICENSEES

A Owner whose Lot in whole or in part is the subject of a lease or licence agreement must-

(a) provide the lessee or licensee with a copy of this Management Statement;
(b) require the lessee or licensee to perform and-observe the obligations on the part of the Owner under the By-Laws; and
(c) take all reasonable steps including, without limitation, any action available to him/her under the lease or licence agreement to ensure that the lease or licensee of the Lot and any person on the Community Property with the consent (express or implied) of the lessee or licensee complies with the by-laws.

## 19. GARDEN SHEDS

The Owner of a Lot may construct a garden shed in the rear garden area of the Lot providing that it is not visible externally from the Lot.

## 20. SATELLITE DISH

An Owner wishing to install a satellite dish must obtain the written consent of the Community Association.

### 20.1 Submission

Any written submission for consent of the Community Association under By-Law 20 must contain a detailed specification of the proposed satellite dish, which indicates the type, design, style and location proposed.

### 20.1.1 Community Association Approval

The Community Association will not approve the installation of a satellite dish unless the submission complies with By-Law 20.1.

## 21. WINDOWS AND DOORS

The Owner of a Lot must ensure that windows and doors visible from the Open Access Way are furnished as follows:

(a) white or near white timber look Venetian Blinds; or
(b) white or near white backed curtains; or
(c) white or near white roller blinds.

## 22. INTRUDER ALARM

The Owner of a Lot shall have the right to install and intruder alarm providing that it complies with the requirements of the *Protection of the Environment Operations Act, 1997* and any other relevant legislation.

## 23. KEEPING OF ANIMALS

### 23.1 Animals that may be Kept

(a) An Owner may keep on a Lot, subject to By-Law 23.2 and 23.3:

(i) up to two small dogs; or
(ii) one dog; and
(iii) a guide dog, hearing dog, or other animal trained to assist to alleviate the affect of disability if an Owner needs a dog or other animal because of visual disability, a hearing

disability or any other disability. If the Owner needs the dog because he or she is visually or hearing impaired.

(b) It is a condition of development consent that cats, ferrets and rabbits are not permitted to be kept on a Lot.

(c) An Owner will need consent from the Executive Committee to keep any other type or numbers of animals. The Executive Committee may make conditions for giving consent. An Owner will be responsible for compliance by an Occupier with the terms of these By-Laws.

**23.2 Restrictions on the Keeping of animals**

An Owner must:

(a) ensure his or her dog or dogs is/are kept indoors within his or her Lot at night and otherwise within a fenced compound on the Lot or on a lead;

(b) ensure his or her dog or dogs is/are appropriately micro-chipped, vaccinated and have effective flea and worm control.

(c) in addition to this By-Law, comply with the development consent, easements and all laws, requirements of Government Agencies regarding the keeping of animals.

**23.3 When will the Executive Committee refuse consent**

The Executive Committee will not give consent to keep:

(a) an animal that is vicious, aggressive, noisy or difficult to control;

(b) an animal that is not registered under the *Companion Animals Act 1998 (NSW);* or

(c) a dangerous dog under the *Companion Animals Act 1998 (NSW).*

**23.4 Controlling an animal**

Any animal an Owner keeps under this By-Law must not be permitted to wander onto another Lot or Community Property. If it is necessary to take an animal onto Community Property it must be restrained (e.g. by leasn or pet cage) and controlled at all times.

**23.5 Removal of animals**

The Executive Committee has the right, at any time to order an Owner to remove his or her animal (and revoke any consent to keep an animal) if:

(a) it becomes offensive, vicious, aggressive, noisy or a nuisance;

(b) an Owner does not comply with his or her obligations under this By-Law;

(c) an Owner breaches a condition made by the Executive Committee when it gave consent to the keeping of the animal; or

(d) an Owner keeps a dog, the dog is a dangerous dog or is not registered under the *Companion Animals Act 1998 (NSW).*

**23.6 Responsibilities of Owner**

An Owner is responsible:

(a) to other Owners and people using Community Property for:

(i) any noise the animal makes which causes unreasonable disturbance; and

(ii) damage to or loss of property or injury to any person caused by the animal.

(b) to clean up after the animal.

### 23.7 Visitors

An Owner must not allow a visitor to bring animals onto the Community Property or onto any other Lot unless they are guide dogs, or hearing dogs and the visitors are visually or hearing impaired or other animals trained to assist to alleviate the affect of a disability if they need a dog or other animal because of a visual disability, a hearing disability or any other disability.

## 24. STREET LIGHTS

### 24.1 Street Lights

(a) The Street Lights are the property of the Community Association.

(b) The Community Association is responsible for the supply, maintenance and repair and replacement of the Street Lights.

(c) No unauthorised signage is to be affixed to the street lights or on any Common Property (i.e. lost pet or garage sale signs).

### 24.2 Obligations of the Community Association

The Community Association shall pay to Energy Australia or other electricity provider for electricity supplied to light the Lamps in accordance with the rates, charges or allowances charged from time to time.

(a) The Community Association shall at all times permit Ausgrid, its servants and agents to enter the Community Property, to erect, maintain, repair or renew any Electricity Works and for purposes reasonably incidental to repairing and maintain the Electricity Works.

(b) The Community Association shall not hold Ausgrid responsible for any damage caused to any property of the Community Association where such damage arises solely from the authorised operation and maintenance activities of Ausgrid.

(c) The Community Association agrees that if the surface of the Open Access Ways do not support the heavy vehicles, machinery and materials necessary to maintain Ausgrid's electrical equipment, the Community Association will be responsible for repairing any damage caused to the surface of the Open Access Ways during such maintenance.

## 25. WATER MANAGEMENT FACILITIES

### 25.1 Obligations of Community Association

In carrying out its responsibilities in connection with operating, maintaining and repairing those parts of Community Property comprising the Water Management Facilities, the Community Association must:

(a) establish a programme for the ongoing maintenance, repair, maintenance and renewal of the Water Management Facilities;

(b) for that purpose engage a suitably qualified contractor or consultant to prepare a suitable Water Management Facilities manual for the Community Association to adopt: and

(c) adopt and follow the procedures in the Water Management Facilities Manual.

### 25.2 Obligations of the Owner

The rain gardens or bio-basins located in the front and rear of each of Lots 9-25 are a Pittwater Council Water Management requirement in Warriewood Valley.

The rain gardens are designed with a surface area of 6 m2 (average ponding depth of 400 mm and ponding volume of 2.4 m3 per Lot) in the rear and a surface area of 3 m2 (average ponding depth of 200 mm and ponding volume of 0.6 m3 per Lot) in the front of Lots 9-25.

The rain gardens are integral to the overall water management function of the Estate. They must not be removed and Owners should maintain them by following the procedures in the Water Management Facilities Manual.

## 26. ESTATE FEATURE WALLS AND SIGNAGE

### 26.1 Obligations of Community Association

The Community Association is responsible for the maintenance and repair of the estate feature walls and signage erected around parts of the Community Property.

The Community Association may engage the services of appropriately qualified persons or companies to effect any necessary maintenance or repairs required to the estate feature walls and signage.

### 26.2 Owner to Compensate for Damage

The Owner of a Lot shall be liable to compensate the Community Association in respect of all damage to the Community Property the subject of this by-law caused by such Owner of the Lot or their respective invitees.

## 27. RETAIL BUILDING

### 27.1 Architectural and Landscape Standards

For the avoidance of doubt, Clauses 2.1, 2.2 and any other clause (where relevant) also applies to the Retail Building on the Retail Lot.

In addition to clause 2.1(a) (xi), landscaping shall be maintained in a healthy state and in perpetuity by the existing or future Owners. If any vegetation comprising that landscaping dies or is removed, it is to be replaced with vegetation of the same species and, to the greatest extent practicable, the same maturity, as the vegetation which died or was removed.

### 27.2 Signage

The Owner must ensure that external signs comply with the Signage Plan. Signs visible from outside the premises (including decorative or themed adhesive film on the shop front of the retail building) must be of a standard in keeping with the standard of the Estate.

No pylon signs are permissible on the Retail Lot.

### 27.3 Other

a) The operating hours of the retail building are from 7 am to 9 pm 7 days a week.

b) The operating hours of delivery and service vehicles to and from the retail building shall take place in the designated loading bay area and are limited to 7 am to 7 pm Monday to Saturday and 8 am to 6 pm Sundays and public holidays, or as otherwise determined by conditions of consent to operate the premises.

c) Noise from the operation of any plant and equipment shall comply with the noise provisions of the Protection of the Environment Operations Act 1997 in terms of regulating noise.

d) The roller doors located within the waste storage area shall operate quietly and be appropriately maintained.

e) Solid roller shutters are not permitted as security devices on shop fronts (windows and doors).

f) No mechanical plant rooms, mechanical equipment, air conditioning units or mechanical ventilation is to be located on the roof of the retail building.

g) All lighting including security lighting must meet AS4282 The Control of the Obtrusive Effects of Outdoor Lighting.

h) As soon as practicable after the Annual Fire Safety Statement is issued for the building, the Owner is to provide a copy to the Community Association.

### 28. SPACE MANAGEMENT

#### 28.1 Obligations of Community Association

The Community Association is responsible for the implementation and maintenance of space management strategies including activity coordination, site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements.

The Community Association may engage the services of a suitable qualified contractor to effect any necessary maintenance or repairs in relation to space management.

## PART 5

## BY-LAWS REQUIRED BY PUBLIC AUTHORITY

This part may specify by-laws made at the request of a public authority. These by-laws may provide that amendments may not be made without the consent of the public authority.

### 29. AUSGRID

Ausgrid is entitled to an Easement for Electricity and Other Purposes for the new Substation on Community Property. The easement is expected to be 5.3 m wide and 3.3 m long.

The Easement is to be created on the terms and conditions set out in Memorandum registered number AC289041 filed at the Land and Property Information Authority. In this easement, "easement for electricity and other purposes" is taken to have the same meaning as "easement for electricity works" in the memorandum.

The easement referred to above, is to be created on Community Property pursuant to Section 88 of the Conveyancing Act 1919, as amended, upon registration of the Community Plan at the Land and Property Information Authority.

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### 30. SYDNEY WATER CORPORATION

Sydney Water Corporation is entitled to an Easement for Water Supply Purposes 2.5 Wide and an Easement for Access and Drainage Purposes Variable Width. In support of the easements referred to above, a Positive Covenant will be created in favour of Sydney Water Corporation.

The Easement/Covenant is created on the terms and conditions set out in Memorandum registered number 5736755 filed at the Land and Property Information Authority.

The Easement/Covenant referred to above, are to be created on Community Property pursuant to Section 88 of the Conveyancing Act 1919, as amended, upon registration of the Community Plan at the Land and Property Information Authority.

## PART 6

## DICTIONARY

### 30. DEFINITIONS

Generally In this Management Statement, subject to contrary intention, words and terms shall have the same meaning as is given to such words and terms by the *Community Land Management Act 1989 or Community Land Development Act 1989* as the case may be.

Otherwise the following words have the meanings:

**Architectural and Landscaping Standards** means the architectural and landscaping standards prescribed under this Management Statement by:

(a) the Community Association from time to time for the Community Parcel; and
(b) the Original Proprietor for Community Development Lots.

**Community Association** means the community association constituted on registration of the Community Plan.

**Community Development Lot** means a Lot that is not:

(a) Community Property, a public reserve or a drainage reserve;

(b) land that has become subject to a Subsidiary Scheme; or

(c) severed from the Community Scheme.

**Community Parcel** means the land the subject of the Community Scheme (also described as the Estate in this Management Statement).

**Community Plan** means that plan of subdivision registered with the Management Statement.

**Community Property** means Lot 1 in the Community Plan and includes all items constructed on, erected on, or attached to Community Property.

**Community Scheme** is the community scheme constituted on registration of the Community Plan.

**Community Schemes Board** means the board established under the Community Titles Legislation.

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**Community Titles Legislation** means *Community Land Development Act 1989 (NSW)* and *Community Land Management Act 1989* and related legislation.

**Community Property Plan** means the plan of Community Property registered with the Community Plan.

**Council** means Pittwater Council.

**Development Activities** any work which the Original Proprietor and all persons authorised by the Original Proprietor must do or may undertake to complete any development on the Community Parcel including:

(a) any form of demolition work, building work, and work ancillary to or associated with building work on the Community Parcel;
(b) the installation of services;
(c) the construction of community property;
(d) any form of landscaping work or work ancillary to or associated with landscaping work on the Community Parcel;
(e) carrying out development in stages;
(f) any form of work which the Original Proprietor, in its absolute discretion, considers is necessary or desirable;
(g) the subdivision of land forming part of the Community Parcel by any means, including strata
(h) the exercise of any right or discretion given to the Original proprietor under this Management Statement.

**Dwelling** means the house constructed on the Community Development Lot.

**Electricity Works** means those items belonging to Ausgrid in connection with the supply of electricity in the Estate including the meters and the Services Lines for the supply of high voltage electricity, but do not include the lamps of the Service Lines for low voltage electricity which are the property and responsibility of the Community Association.

**Estate** the term used to describe the Community Parcel.

**Estate Feature Walls and Signage** means the estate feature walls and signage erected around parts of the Community Property.

**Executive Committee** means the executive committee of the Community Association as constituted or elected under this Management Statement and the *Community Land Management Act 1989 (NSW)*.

**External Colours** means the external colour schedule annexed.

**Footpaths means** those parts of Community Property comprising the footpaths.

**Government Agency** means a government or semi-government, administrative, fiscal or judicial department or entity, a statutory authority or a local council.

**Initial Period** has the meaning given to it by the Community Titles Legislation.

**Landscaping** means the landscaped areas on the Community Property.

**Management Statement** means the community management statement registered with the Community Plan, as amended from time to time under the Community Titles Legislation.

**Neighbourhood Association** means a neighbourhood association created on registration of a Neighbourhood Plan.

**Neighbourhood Plan** means a neighbourhood plan that subdivides a Community Development Lot.

**Neighbourhood Scheme** means a neighbourhood scheme constituted on registration of a Neighbourhood

Plan.

**Occupier** is the occupier or lessee of a Lot and includes a mortgagee in possession.

**Open Access Ways** means that part of the Community Property which has been set apart as a means of access connecting part of the Community Parcel and a public road shown on the Plan of Access Ways.

**Open Area** means the open areas on the Community Property including the Open Space Area.

**Open Space Area** means that part of the Community Property designated "A" on the Community Property Plan annexed.

**Original Proprietor** in relation to a Community Development Lot, means the registered proprietor in fee simple of the Community Development Lot at the time of registration of the Community Plan.

**Owner** means the registered proprietor of a Lot. In respect to each Lot, the expression includes in all cases the tenant, occupier and mortgagee in possession of the Lot.

**Owners Corporation** means an owners corporation created on registration of a Strata Plan.

**Permitted Persons** means a person on the Community Parcel with the express or implied consent of an Owner or the Community Association.

**Plan of Access Ways** means a plan (*if any*) attached to this Management Statement creating access ways pursuant to Part 5 of the Community Land Development Act 1989.

**Private Service** means a service running through or servicing Lots, Community Property or Common Property which is not a Statutory Service.

**Restricted Community Property** means the Open Space Area.

**Retail Building** means the building to be erected on the Retail Lot.

**Retail Lot** means Community Development Lot 2.

**Retaining Walls** means those parts of Community Property comprising the retaining walls.

**Rules and Regulations** have the same meaning as set out in by-law 11.

**Services** means the following:

(a) the supply of water, gas, electricity, artificially heated or cooled air or heating oil;
(b) the provision of sewerage and drainage;
(c) transmission by telephone, radio, television, satellite or other means;
(d) security systems; and
(e) any other facility, supply or transmission.

**Service Line** means a pipe, wire, cable, duct, conduit or pole by means of which a service is or is to be provided, the location of which is illustrated in the Services Plan.

**Service Provider** means any authorities or corporations that provide a service.

**Services Plan** means the diagram showing the private services and statutory services registered with the Community Plan.

**Signage Plan** means the signage plan for the retail building annexed.

**Statutory Service** means a service running through or servicing Lots, Community Property or Common Property provided by a Service Provider.

**Strata Plan** means a strata plan that subdivides a Community Development Lot.

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**Strata Scheme** means a strata scheme constituted on registration of a Strata Plan.

**Street Lighting** means those items comprising the street lamps and includes the standard for the lamp, the bracket, the reflector, the electric light bulbs, the fittings and all other appurtenances and fittings necessary so as to make the lamp complete and when electricity is turned on, light giving.

**Subsidiary Body** means a Neighbourhood Association or an Owners Corporation.

**Subsidiary Scheme** means a Neighbourhood Scheme or a Strata Scheme.

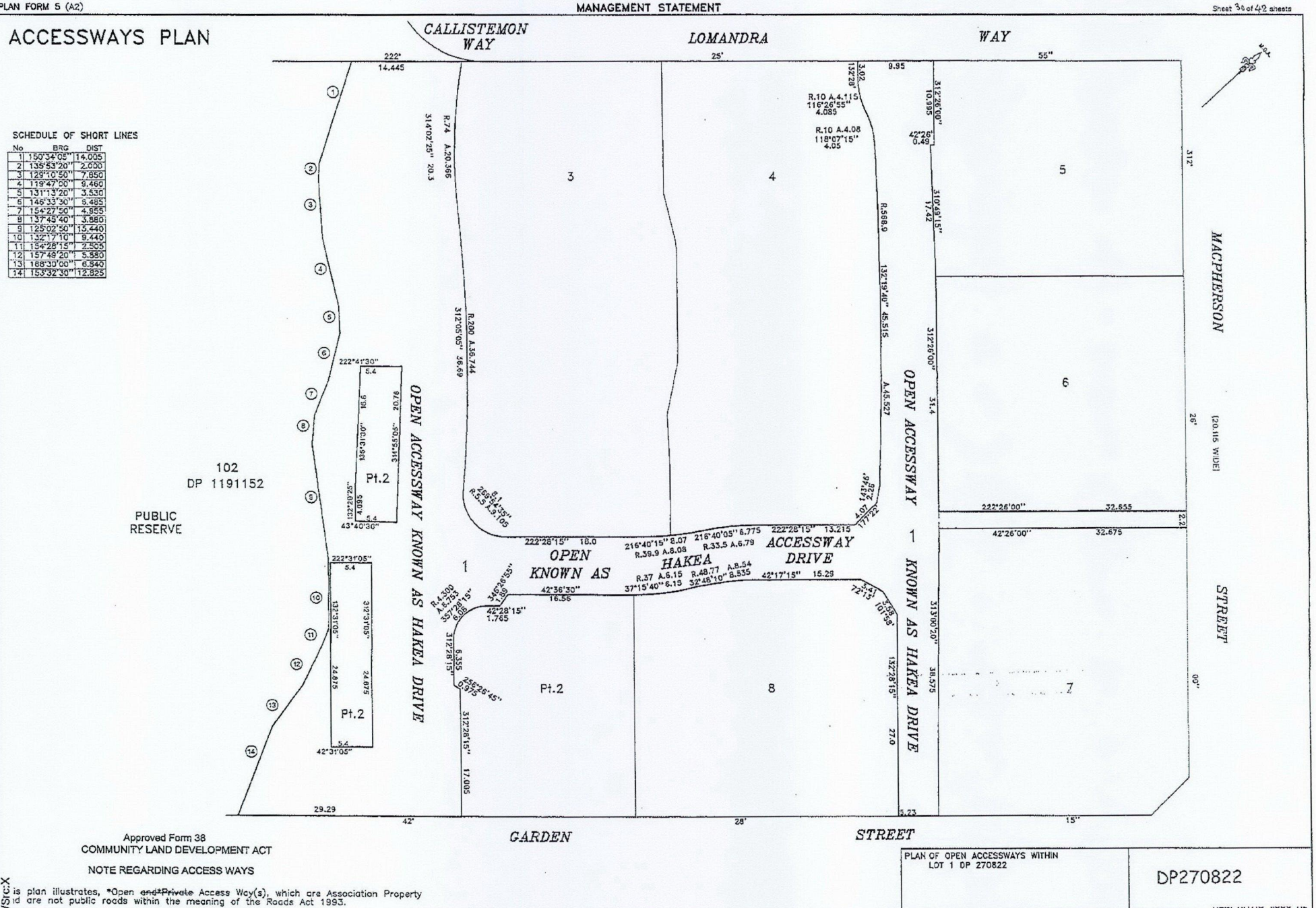
**Traffic Laws** means any applicable legislation or any regulations, ordinances, by-laws or orders made thereunder relating to the regulation and use of vehicles made by a Government agency.

**Visitor Car parking** means car spaces labelled V1 to V7 on the Community Property Plan attached to this management statement.

**Walkways** means those parts of Community property comprising the walkways.

**Water Management Facilities** means those parts of Community Property comprising the water management facilities including the underground detention tank, the gross pollutant trap, stormwater filtration and the bio retention and drainage swales.

# ACCESSWAYS PLAN




SCHEDULE OF SHORT LINES

| No | BRG | DIST |
|---|---|---|
| 1 | 150°34'05" | 14.005 |
| 2 | 135°53'20" | 2.000 |
| 3 | 129°10'50" | 7.850 |
| 4 | 119°47'00" | 9.460 |
| 5 | 131°13'20" | 3.530 |
| 6 | 146°33'30" | 8.485 |
| 7 | 154°27'50" | 4.955 |
| 8 | 137°45'40" | 3.880 |
| 9 | 125°02'50" | 13.440 |
| 10 | 132°17'10" | 9.440 |
| 11 | 154°28'15" | 2.505 |
| 12 | 157°49'20" | 5.580 |
| 13 | 168°30'00" | 6.840 |
| 14 | 153°32'30" | 12.825 |

Approved Form 38
COMMUNITY LAND DEVELOPMENT ACT

NOTE REGARDING ACCESS WAYS

This plan illustrates, *Open ~~and*Private~~ Access Way(s), which are Association Property and are not public roads within the meaning of the Roads Act 1993.

PLAN OF OPEN ACCESSWAYS WITHIN LOT 1 DP 270822

DP270822

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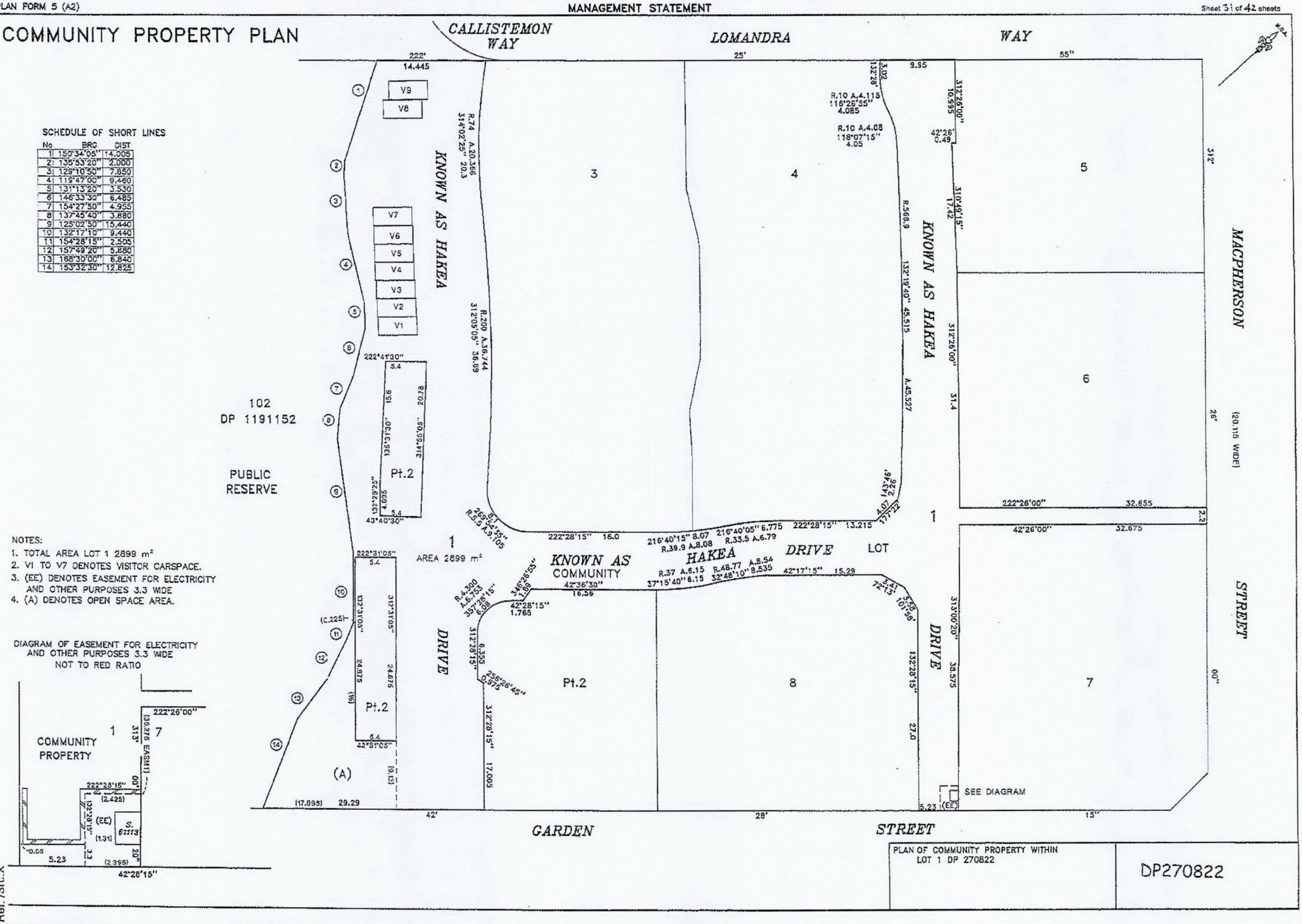
Ref: /Src:X

# COMMUNITY PROPERTY PLAN




SCHEDULE OF SHORT LINES

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| 2 | 135°53'20" | 2.000 |
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| 9 | 125°02'50" | 15.440 |
| 10 | 132°17'10" | 9.440 |
| 11 | 154°28'15" | 2.505 |
| 12 | 157°49'20" | 5.880 |
| 13 | 166°30'00" | 6.840 |
| 14 | 153°32'30" | 12.825 |

NOTES:
1. TOTAL AREA LOT 1 2699 m²
2. V1 TO V7 DENOTES VISITOR CARSPACE.
3. (EE) DENOTES EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 3.3 WIDE
4. (A) DENOTES OPEN SPACE AREA.

DIAGRAM OF EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 3.3 WIDE
NOT TO RED RATIO



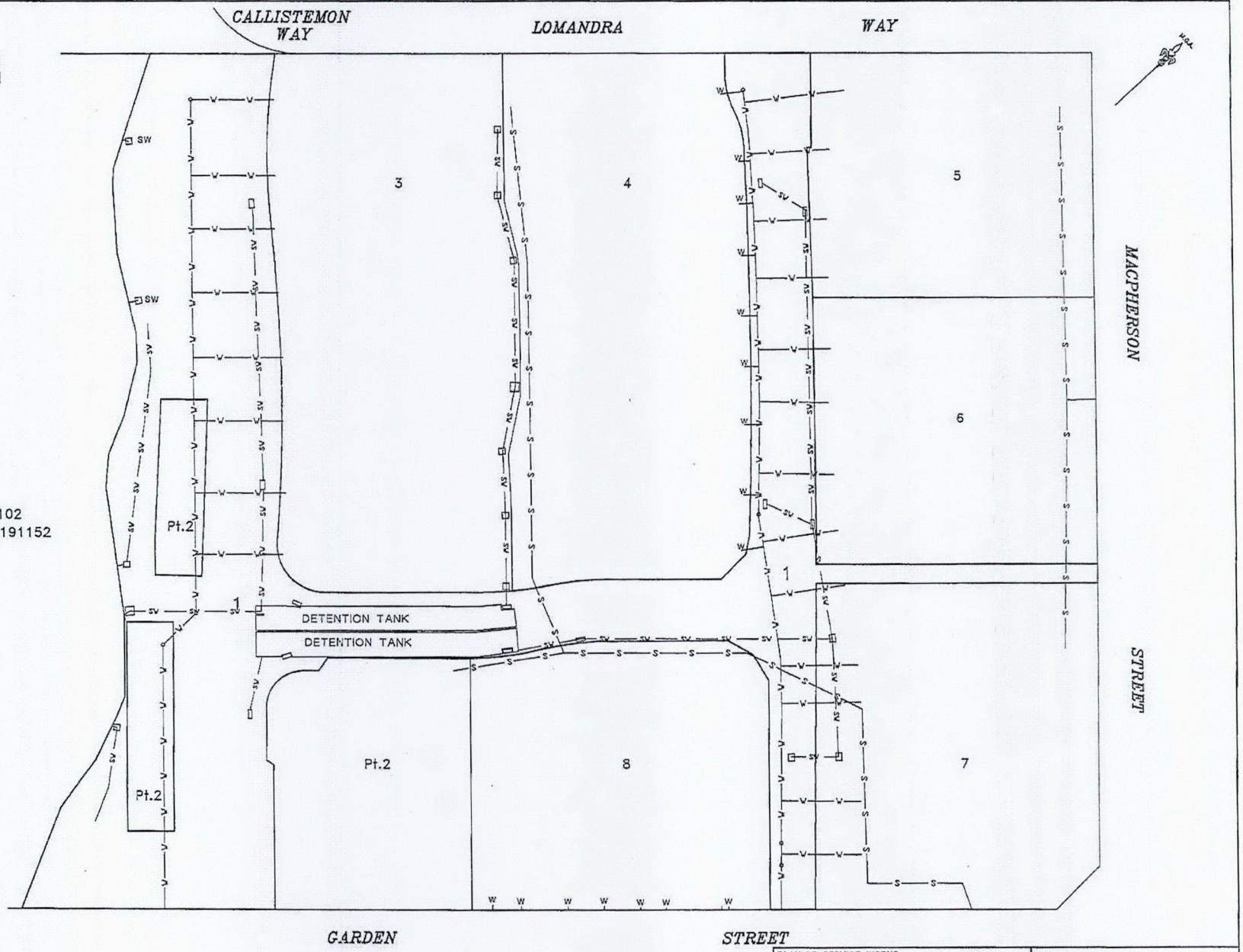

PLAN OF COMMUNITY PROPERTY WITHIN LOT 1 DP 270822

DP270822

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:31 of 42
Ref: /Src:X

# SERVICES PLAN

WATER, STORMWATER, SEWER AND STORMWATER DETENTION WORKS AS EXECUTED




NOTES:

SEWER —S—S—
WATER —W—W—
STORMWATER —SW—SW—

THIS IS NOT A RECORD OF ALL SERVICES IN THIS DEVELOPMENT.

PLAN OF SERVICE WORKS

DP270822

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:32 of 42
Ref: /Src:X

# SERVICES PLAN

ELECTRICITY WORKS
AS EXECUTED

NOTES:
ELECTRICITY —E—E—

THIS IS NOT A RECORD OF ALL SERVICES IN THIS DEVELOPMENT.

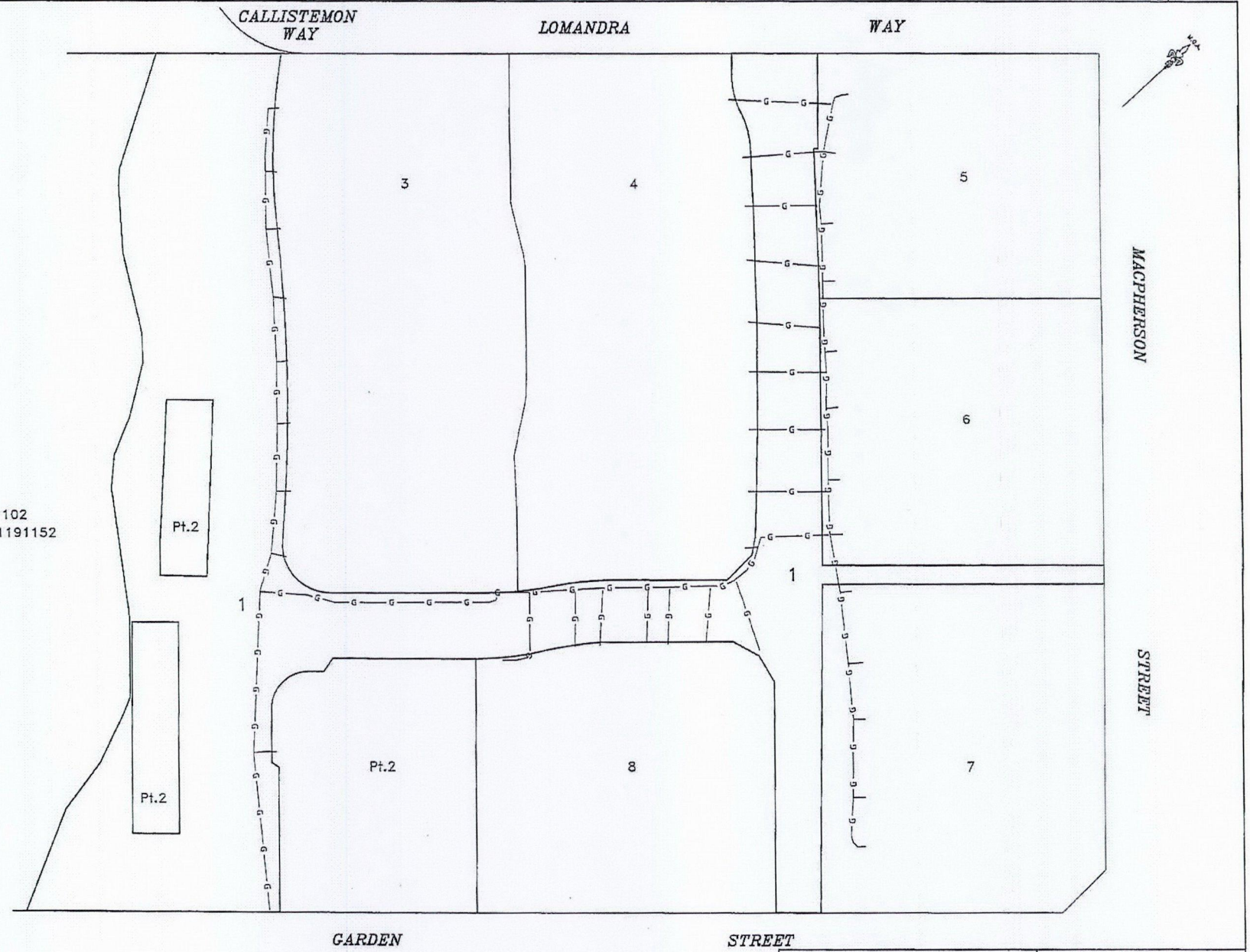
PLAN OF SERVICE WORKS

DP270822

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:33 of 42
Ref: /Src:X

# SERVICES PLAN

GAS WORKS
AS EXECUTED




NOTES:

GAS —G—G—

THIS IS NOT A RECORD OF ALL SERVICES IN THIS DEVELOPMENT.

PLAN OF SERVICE WORKS

DP270822

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:34 of 42
Ref: /Src:X

# SERVICES PLAN

TELECOMMUNICATIONS
WORKS AS EXECUTED

NOTES:
TELECOMMUNICATIONS —c——c—

THIS IS NOT A RECORD OF ALL SERVICES IN THIS DEVELOPMENT.

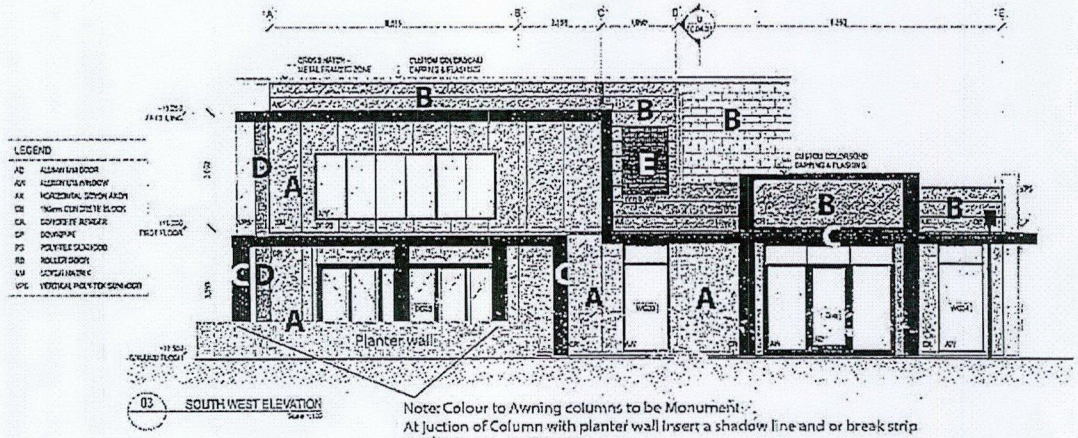
PLAN OF SERVICE WORKS

DP270822

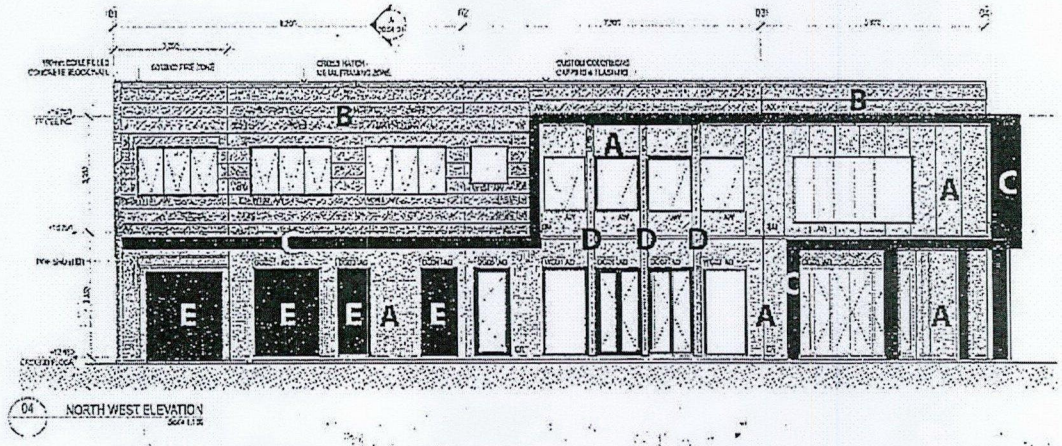
Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:35 of 42
Ref: /Src:X

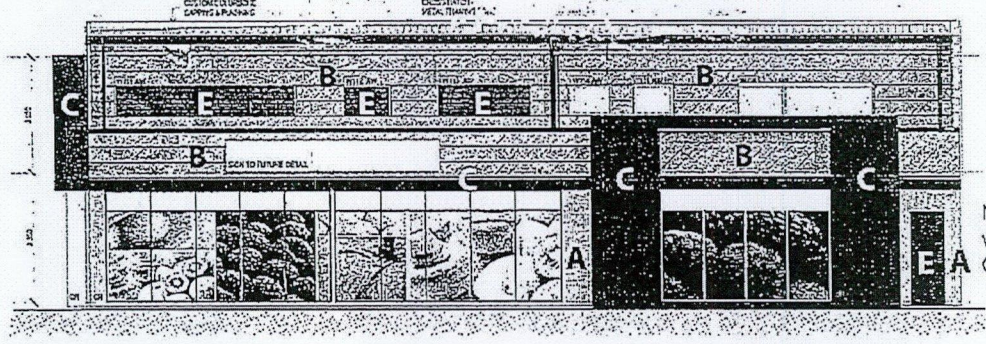
Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:36 of 42
Ref: /Src:X






Note: Colour to Awning columns to be Monument.
At juction of Column with planter wall insert a shadow line and or break strip where the colour changes



Note: Retail Window Signage to comply with signage requirements of the Community Management Statement

A — Lower wall Colour / Planter 'Tan'- Dulux 'Gnu Tan'

B — Upper wall Colour - Mid Grey Grey street150% (50% Darker)

C — Awning / Wall frame elements cafe outdoor area frame to match CB Monument

D — Highlight Column Colour Taubmans 'Rodeo Drive'

E — Window / Doors & frames / Louvres / Roof Colorbond Wallaby

STRONGBUILD

WARRIEWOOD PROPERTIES PTY LTD

WARRIEWOOD - THE GROVE - RETAIL

CNR MACPHERSON ST & GARDEN ST, WARRIEWOOD, NSW, 2102

ELEVATIONS 03 & 04

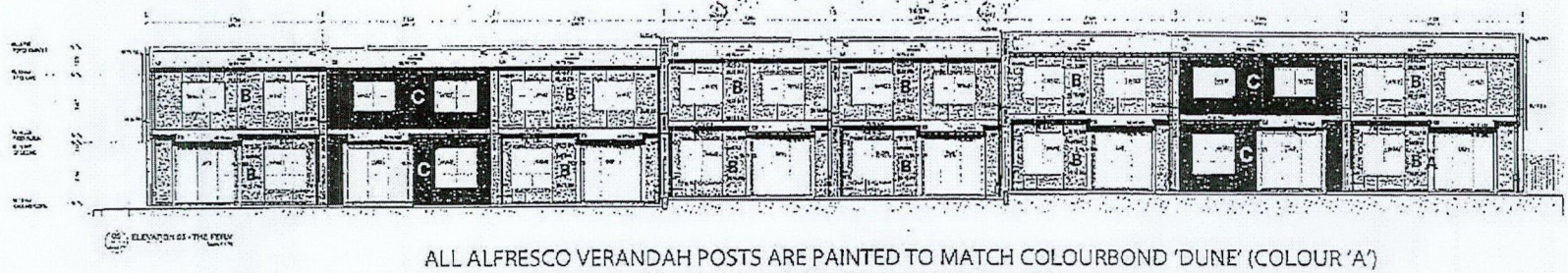
Lot No. 1 & D.P. 187861

ISSUED FOR INTERNAL REVIEW
NOT FOR CONSTRUCTION

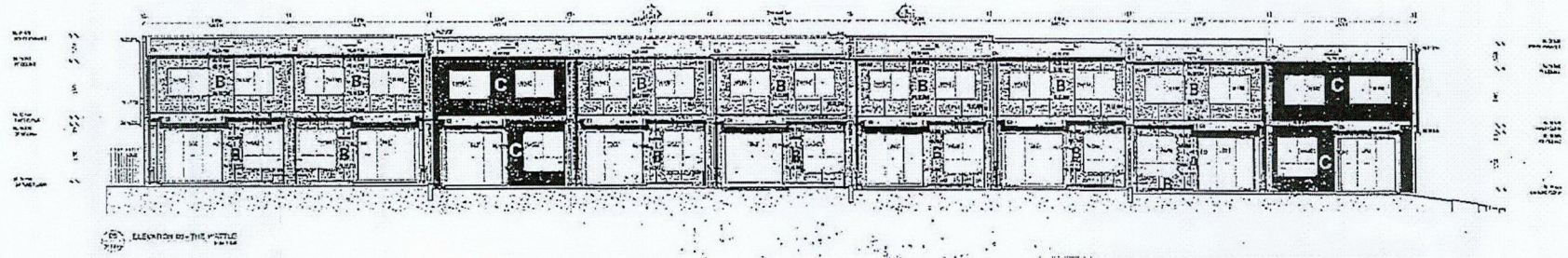
| | | | |
|---|---|---|---|
| CD | AB | TS/ML | 1:100 |
| CP01042 | 00.03.02 | | 5 |

DP270822

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:37 of 42
Ref: /Src:X



ALL ALFRESCO VERANDAH POSTS ARE PAINTED TO MATCH COLOURBOND 'DUNE' (COLOUR 'A')
SIDES OF ALFRESCO ARE PAINTED IN THE ADJOINING WALL COLOUR



A Light Grey - match Colourbond 'Dune'

B Mid grey - Grey Street - 50% (50% darker)

C Dark Grey - match Colourbond 'Monument'
D (Monument above front doors to Be Metalic)
Metalic Bronze

E Garage Doors - Colorbond
Mid Grey - Colorbond Wallaby
A Light Grey - Dune

C Front Doors - Match Monument (gloss)



DP270822

WARRIEWOOD PROPERTIES
WARRIEWOOD - THE GROVE
CORNER MACPHERSON STREET &
GARDEN STREET,
WARRIEWOOD NSW 2102

ELEVATIONS 02

ISSUED FOR CONSTRUCTION

CD DD ML 1:100
CP01842 02.03.02 C

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:38 of 42
Ref: /Src:X




Page 38 of 42

DP270822

WARRIEWOOD PROPERTIES

ELEVATIONS 01

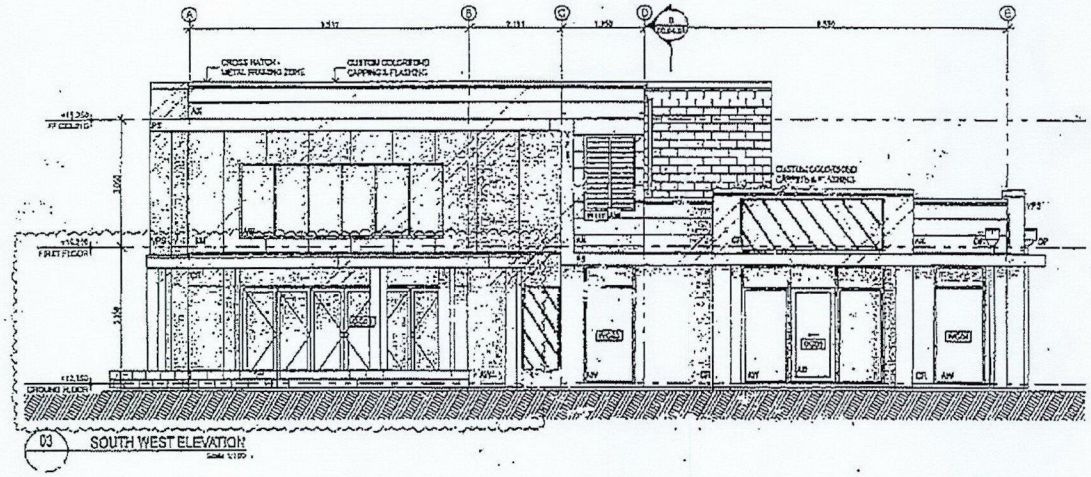
| | | | |
|---|---|---|---|
| CO | DD | ML | 1:100 |
| CPD1042 | 00.03.01 | | B |

Req:R562412 /Doc:DP 0270822 M /Rev:29-Jan-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:39 of 42
Ref: /Src:X

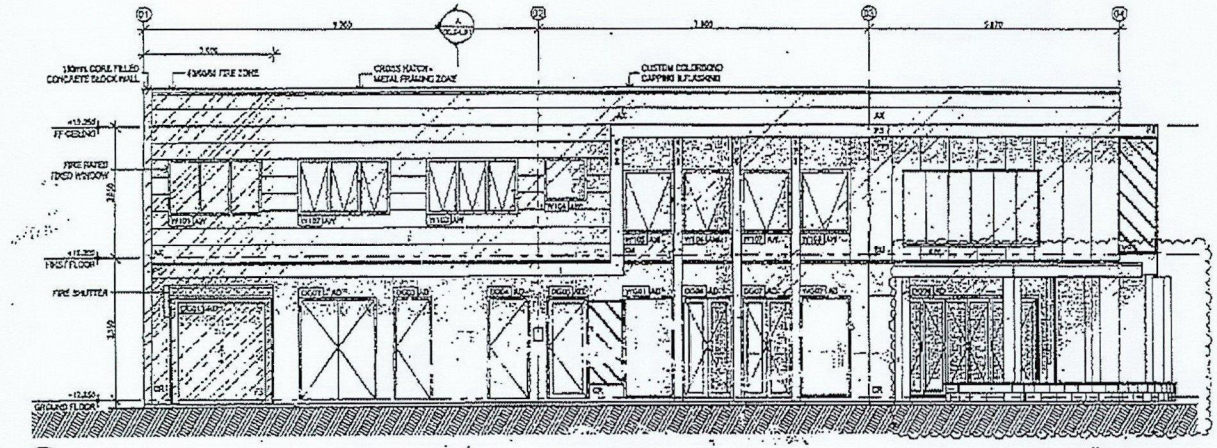
DP270822



# SIGNAGE PLAN




03 SOUTH WEST ELEVATION




04 NORTH WEST ELEVATION

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AUSTRALIAN STANDARDS AND BCA
ALL WORKS TO BE IN ACCORDANCE WITH AUSTRALIAN STANDARDS, THE LATEST EDITION OF THE BCA AND ALL OTHER RELEVANT STATUTORY REGULATIONS AND AUTHORITY REQUIREMENTS.

| LEGEND | |
|---|---|
| AD | ALUMINIUM DOOR |
| AW | ALUMINIUM WINDOW |
| AX | HORIZONTAL SLIDING AXION |
| CB | 190mm CONCRETE BLOCK |
| CR | CONCRETE RENDER |
| DP | DOWNPIPE |
| PT | POLYTEX BURNWOOD |
| RD | ROLLER DOOR |
| SX | SLIDING AXION |
| VP3 | VERTICAL POLYTEX BURNWOOD |

SIGNAGE ZONE

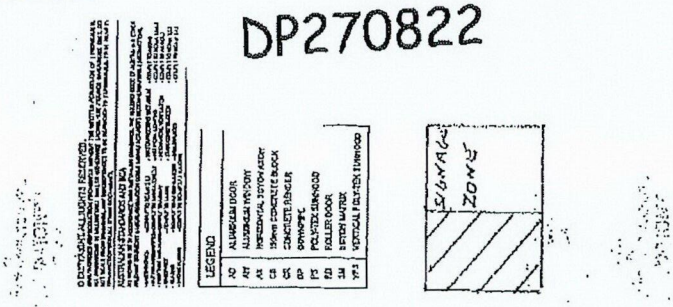
| | | |
|---|---|---|
| D | 23/02/2016 | AWNING AMEND TO INCL TITLE & COLORBOND |
| C | 15/02/2016 | PARAPET HEIGHT ADJUSTED |
| B | 12/02/2016 | WINDOW NUMBERS ADDED |
| A | 11/02/2016 | ISSUED FOR CONSTRUCTION CERTIFICATE |

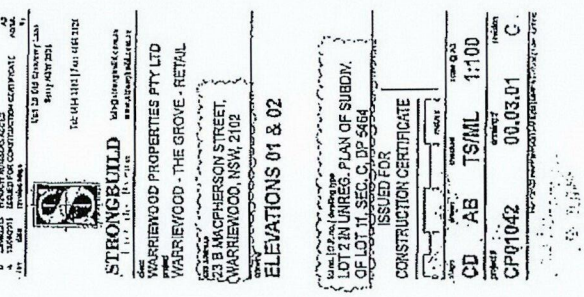
Unit 3B 104 Graham Lane
Berry NSW 2535
Tel: 4464 2812 | Fax: 4464 2525
STRONGBUILD
info@strongbuild.com.au
www.strongbuild.com.au

client
WARRIEWOOD PROPERTIES PTY LTD
project
WARRIEWOOD - THE GROVE - RETAIL
site address
23 B MACPHERSON STREET,
WARRIEWOOD, NSW, 2102
drawing
ELEVATIONS 03 & 04
lot no. | D.P. no. | dwelling type
LOT 2 IN UNREG. PLAN OF SUBDIV. OF LOT 11, SEC. C, DP 5464
ISSUED FOR CONSTRUCTION CERTIFICATE

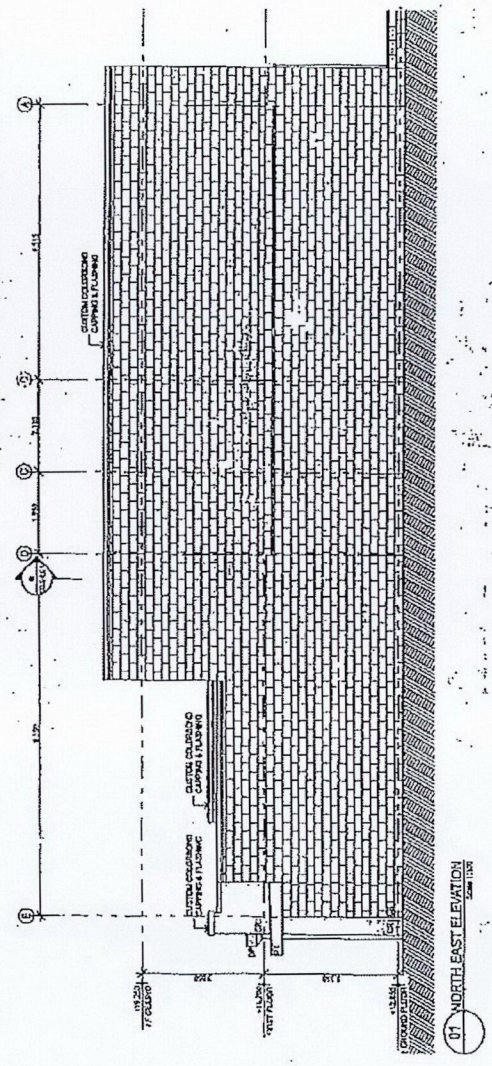
| stage | drawn | checked | scale @ A3 |
|---|---|---|---|
| CD | AB | TS/ML | 1:100 |
| project # | drawing # | revision |
| CP01042 | 00.03.02 | D |

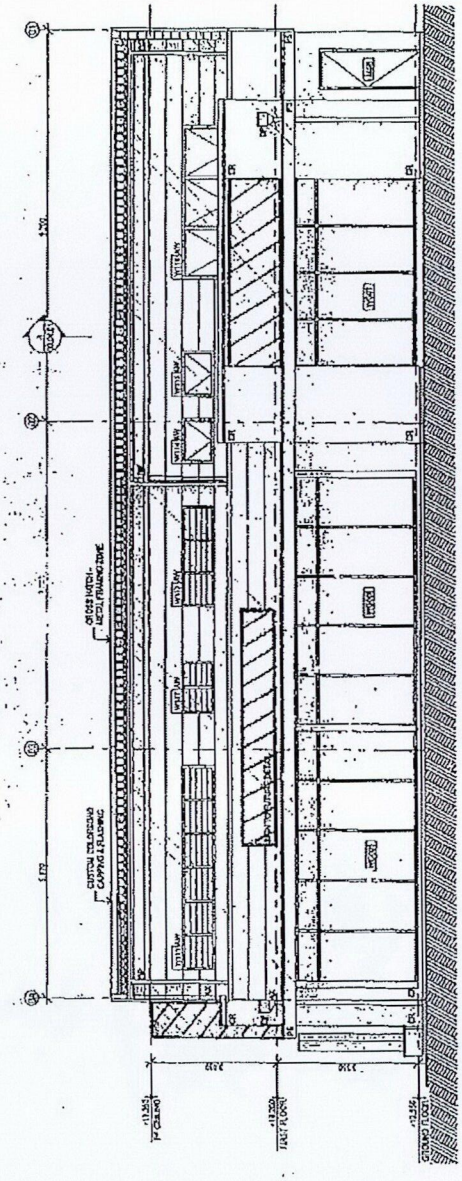
DP270822




SIGNAGE PLAN -



DP270822

**SIGNATURES, CONSENTS AND APPROVALS**

DATED 16th day of DECEMBER 2015

Executed on behalf of the corporation named below by the authorised persons whose signatures appear below pursuant to the authority specified.

Corporation: WARRIEWOOD PROPERTIES PTY LTD ACN 092 158 499

Authority: Section 127 Corporations Act 2001

Signature of authorised person:

Signature of authorised person:

RITCHIE COLIN STEINORT

Name of authorised person

Office held: Director

PETER ROBERT HAXELL

Name of authorised person:

Office held: Directory' Secretary

**CERTIFICATE OF APPROVAL**

It is certified:

(a) that the consent authority has approved of the development described in Development Application N0095/15 and

(b) that the terms and conditions of this management statement are not inconsistent with the development as approved.

Signature on behalf of consent authority.

DATED 15 day of December 2015

DP270822

Executed for and on behalf of )
**Australia and New Zealand Banking Group Limited** )
**ABN 11 005 357 522** )
under Power of Attorney dated *18th November 2002* )
and registered in *New South Wales* )
*Book: 4376 Folio: 410* by )
Steven Knight )
who certifies that he/she is a )
*Senior Manager/ Manager* )
and that he/she has not received )
notice of revocation of that Power )

Signature of Attorney
In the presence of

Signature of Witness
CHANNA JAYASURIYA.
Print name of Witness
242 Pitt Street
SYDNEY NSW 2000
Address of Witness

TERMS OF INSTRUMENT NOT CHECKED IN LAND AND PROPERTY INFORMATION.

REGISTERED dlc 28·1·2016

PLAN FORM 4 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 1 of 5 sheets

# LOCATION DIAGRAM

REDUCTION RATIO 1:500

THIS SHEET IS BEING CONTINUALLY UPDATED TO SHOW THE CURRENT SUBDIVISION PATTERN OF THE SCHEME. FOR DETAILS OF UPDATES AND ADDITIONAL AND REPLACEMENT SHEETS SEE SCHEDULE BELOW.

SCHEDULE OF CHANGES TO THE SCHEME

| LOT No | DETAILS | SHEET No |
|---|---|---|
| 3 | SUBDIVIDED INTO LOTS 9-16 | 6-7 |
| 4 | SUBDIVIDED INTO LOTS 17-25 | 6-7 |

Subdivision Certificate No.: P06/15

Date: 16/12/2015.

Surveyor: ANDREW P. MASON

Surveyors Ref: 33035CT1

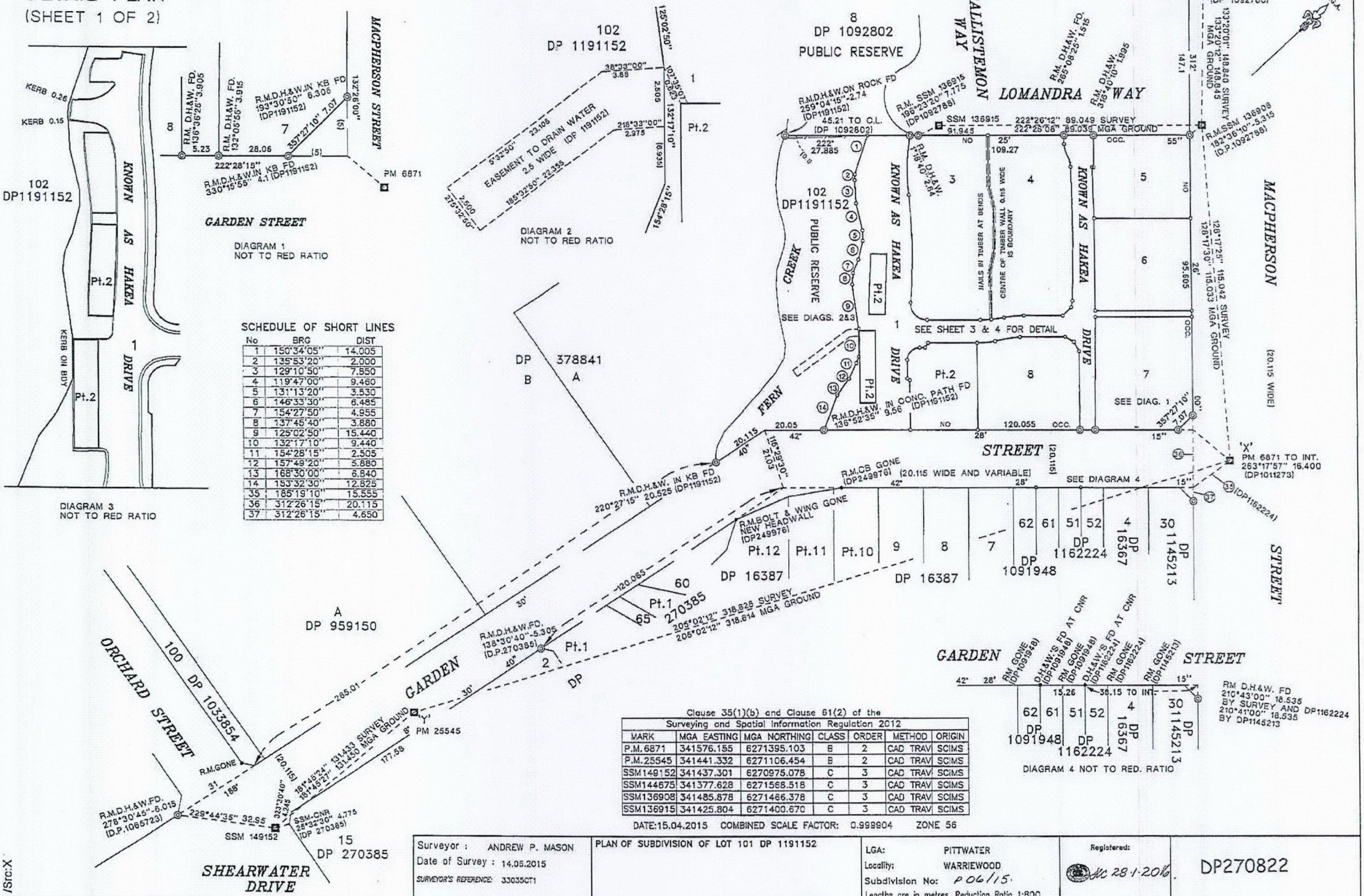
Registered JC 28.1.2016.

COMMUNITY/PRECINCT/NEIGHBOURHOOD PLAN

DP270822 P

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:1 of 18
Ref: /Src:X

# DETAIL PLAN
(SHEET 1 OF 2)




Clause 35(1)(b) and Clause 61(2) of the Surveying and Spatial Information Regulation 2012

| MARK | MGA EASTING | MGA NORTHING | CLASS | ORDER | METHOD | ORIGIN |
|---|---|---|---|---|---|---|
| P.M.6871 | 341576.155 | 6271395.103 | B | 2 | CAD TRAV | SCIMS |
| P.M.25545 | 341441.332 | 6271106.454 | B | 2 | CAD TRAV | SCIMS |
| SSM149152 | 341437.301 | 6270975.078 | C | 3 | CAD TRAV | SCIMS |
| SSM144675 | 341377.628 | 6271568.518 | C | 3 | CAD TRAV | SCIMS |
| SSM136908 | 341485.878 | 6271466.378 | C | 3 | CAD TRAV | SCIMS |
| SSM136915 | 341425.804 | 6271400.670 | C | 3 | CAD TRAV | SCIMS |

DATE:15.04.2015 COMBINED SCALE FACTOR: 0.999904 ZONE 56

| | | | | |
|---|---|---|---|---|
| Surveyor : ANDREW P. MASON<br>Date of Survey : 14.05.2015<br>SURVEYOR'S REFERENCE: 33035CT1 | PLAN OF SUBDIVISION OF LOT 101 DP 1191152 | LGA: PITTWATER<br>Locality: WARRIEWOOD<br>Subdivision No: P06/15.<br>Lengths are in metres. Reduction Ratio 1:800 | Registered: MC 28.1.2016. | DP270822 |

10 20 30 40 50 Table of mm 90 100 110 120 130 140

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:2 of 18
Ref: /Src:X

PLAN FORM 2 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 3 of 5 sheets

# DETAIL PLAN (SHEET 2 OF 2)

SCHEDULE OF SHORT LINES

| No. | BRG | DIST |
|---|---|---|
| 1 | 150°34'05" | 14.005 |
| 2 | 135°53'20" | 2.000 |
| 3 | 129°10'50" | 7.850 |
| 4 | 119°47'00" | 9.460 |
| 5 | 131°13'20" | 3.530 |
| 6 | 146°33'30" | 6.485 |
| 7 | 154°27'50" | 4.955 |
| 8 | 137°45'40" | 3.880 |
| 9 | 125°02'50" | 15.44 |
| 10 | 132°17'15" | 9.440 |
| 11 | 154°28'15" | 2.505 |
| 12 | 157°49'20" | 5.880 |
| 13 | 168°30'00" | 6.840 |
| 14 | 153°32'30" | 12.825 |

SCHEDULE OF CURVED LINES

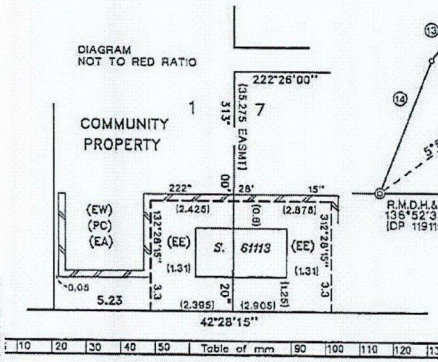
| No. | BRG | DIST | ARC | RADIUS |
|---|---|---|---|---|
| 15 | 219°48'00" | 3.725 | 3.725 | 39.9 |
| 16 | 33°59'50" | 4.355 | 4.360 | 39.9 |

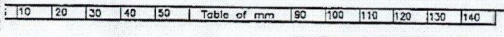
SCHEDULE OF REFERENCE MARKS

| No | BRG | DIST | DESCRIPTION |
|---|---|---|---|
| A | 46°14'05" | 10.795 | D.H.&W. IN KERB |
| | 56°58'40" | 1.565 | D.H.&W. IN KERB |
| B | 60°11'00" | 0.085 | D.H.&W. IN KERB |
| C | 218°40'10" | 2.000 | D.H.&W. IN KERB |
| D | 219°42'40" | 1.420 | D.H.&W. IN KERB |
| E | 44°00'45" | 1.565 | D.H.&W. IN KERB |
| F | 136°36'25" | 3.905 | D.H.&W. IN KERB |
| G | 132°05'55" | 3.915 | D.H.&W. IN KERB |
| H | 316°40'10" | 1.995 | D.H.&W. IN KERB |
| I | 265°08'25" | 1.515 | D.H.&W. IN KERB |
| J | 222°17'10" | 7.265 | D.H.&W. IN KERB |
| | 218°28'00" | 1.365 | D.H.&W. IN KERB |
| K | 229°39'10" | 7.715 | D.H.&W. IN KERB |
| | 256°11'10" | 1.500 | D.H.&W. IN KERB |
| L | 355°20'00" | 2.200 | D.H.&W. IN KERB |
| M | 309°25'45" | 1.590 | D.H.&W. IN KERB |
| N | 286°18'20" | 1.740 | D.H.&W. IN KERB |
| O | 317°35'25" | 1.600 | D.H.&W. IN KERB |
| P | 47°02'10" | 8.390 | D.H.&W. IN KERB |
| | 64°30'55" | 1.900 | D.H.&W. IN KERB |
| Q | 11°12'40" | 9.435 | D.H.&W. IN KERB |
| | 329°44'25" | 5.000 | D.H.&W. IN KERB |
| R | 1°18'40" | 2.640 | D.H.&W. IN KERB |
| S | 230°32'10" | 7.655 | D.H.&W. IN KERB |

(EA) DENOTES EASEMENT FOR ACCESS AND DRAINAGE PURPOSES VARIABLE WIDTH
(ED) DENOTES EASEMENT FOR DRAINAGE OF WATER 1.2 WIDE AND VARIABLE
(EE) DENOTES EASEMENT FOR ELECTRICITY & OTHER PURPOSES 3.3 WIDE
(EO) DENOTES EASEMENT FOR OVERHANG 1.8 WIDE AND VARIABLE WIDTH
(ES) DENOTES EASEMENT FOR SERVICES 1.2 WIDE
(ESS) DENOTES FOR SERVICES 2 WIDE AND VARIABLE WIDTH
(EW) DENOTES EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE
(PC) DENOTES POSITIVE COVENANT (SEE SHEET 5)

SEE SHEET 5 FOR EASEMENT DETAILS




CALLISTEMON WAY
LOMANDRA WAY
MACPHERSON STREET
KNOWN AS HAKEA DRIVE
KNOWN AS HAKEA COMMUNITY PROPERTY
GARDEN STREET
PUBLIC RESERVE
102 DP 1191152
C/L TIMBER WALL IS BOUNDARY
0.115 WIDE
RM SSM 136908 182°36'10"-5.315 (D.P.1092768)
SSM 136915 186°23'20"-7.775 (DP 1092768)
R.M.D.H.&W.ON KB FD 193°30'50" 6.305 (DP 1191152)
R.M.D.H.&W.ON KB FD 330°15'55" 4.100 (DP 1191152)
R.M.D.H.&W.ON CONC. FD 136°52'35"-9.56 (DP 1191152)
SEE DIAGRAM
1 2699m²
3 1714m²
4 1675m²
5 931m²
6 1025m²
7 1255m²
8 1074m²
Pt.2 (113m²)
Pt.2 (134m²)
Pt.2 (676m²)
Total 923m²
CONNECTION 6.392

| | | | |
|---|---|---|---|
| Surveyor : ANDREW P. MASON<br>Date of Survey : 14.06.2015<br>SURVEYOR'S REFERENCE: 33035CT1 | PLAN OF SUBDIVISION OF LOT 101 DP 1191152 | LGA: PITTWATER<br>Locality: WARRIEWOOD<br>Subdivision No: P06/15.<br>Lengths are in metres. Reduction Ratio 1:300 | Registered:<br>28/1/2016. | DP270822 |

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:3 of 18
Ref: /Src:X

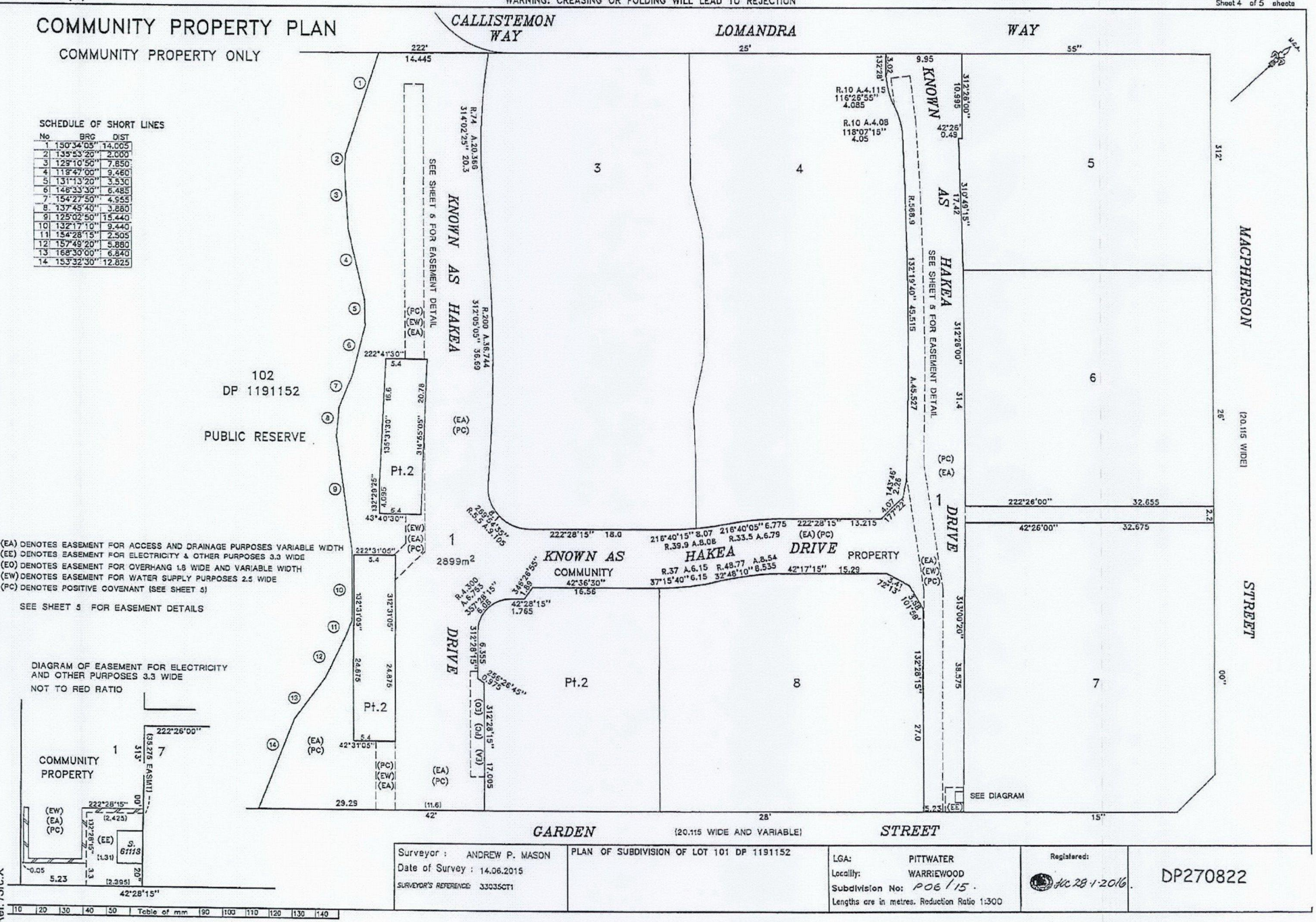
PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet 4 of 5 sheets

# COMMUNITY PROPERTY PLAN

COMMUNITY PROPERTY ONLY

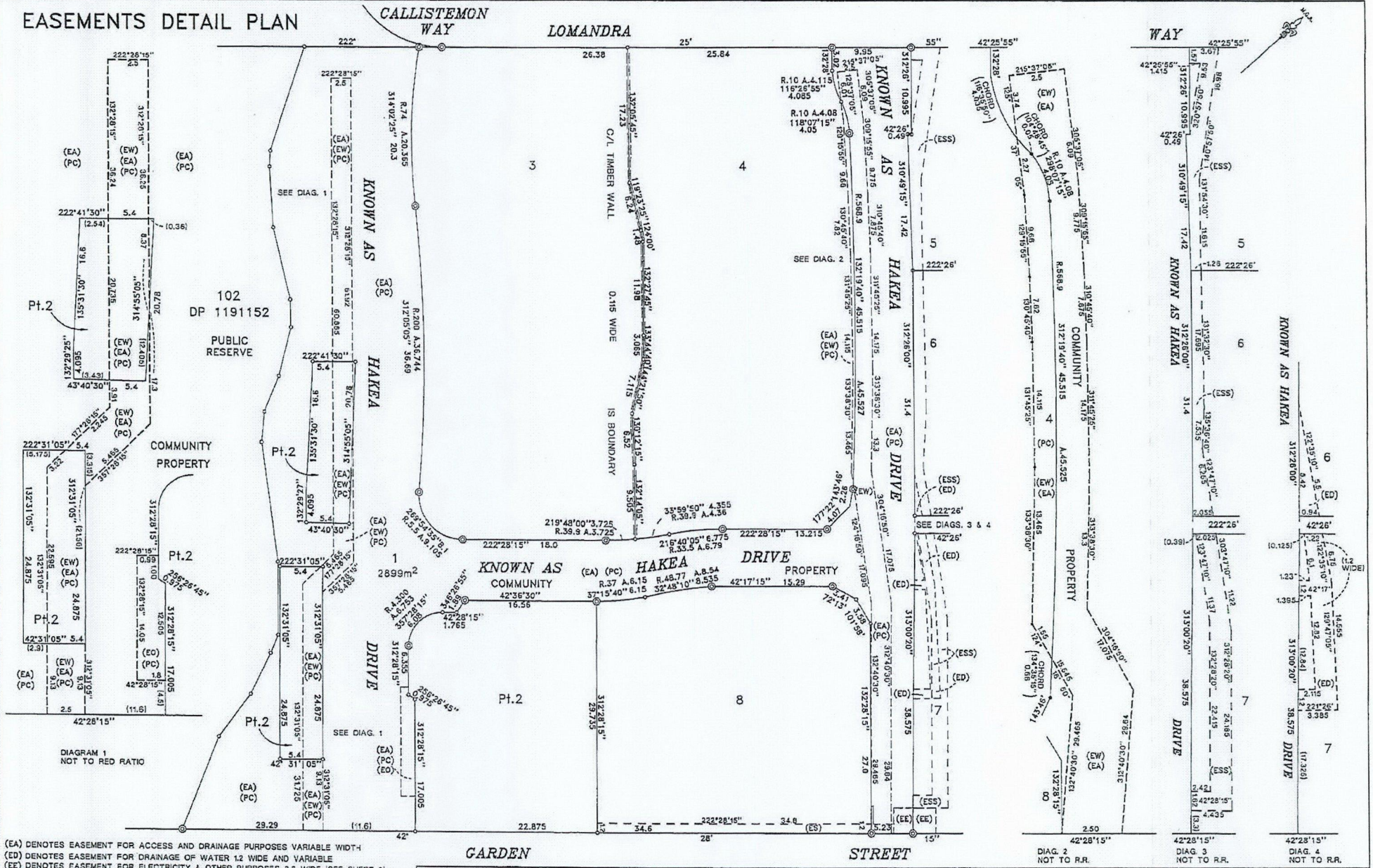



| | | | |
|---|---|---|---|
| Surveyor : ANDREW P. MASON<br>Date of Survey : 14.06.2015<br>SURVEYOR'S REFERENCE: 33035CT1 | PLAN OF SUBDIVISION OF LOT 101 DP 1191152 | LGA: PITTWATER<br>Locality: WARRIEWOOD<br>Subdivision No: P06/15.<br>Lengths are in metres. Reduction Ratio 1:300 | Registered: 28.1.2016. | DP270822 |

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:4 of 18
Ref: /Src:X

PLAN FORM 2 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 5 of 5 sheets

# EASEMENTS DETAIL PLAN




(EA) DENOTES EASEMENT FOR ACCESS AND DRAINAGE PURPOSES VARIABLE WIDTH
(ED) DENOTES EASEMENT FOR DRAINAGE OF WATER 1.2 WIDE AND VARIABLE
(EE) DENOTES EASEMENT FOR ELECTRICITY & OTHER PURPOSES 3.3 WIDE (SEE SHEET 3)
(EG) DENOTES EASEMENT FOR OVERHANG 1.8 WIDE AND VARIABLE WIDTH
(ES) DENOTES EASEMENT FOR SERVICES 1.2 WIDE
(S) DENOTES FOR SERVICES 2.0 WIDE AND VARIABLE WIDTH
(W) DENOTES EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE
(X) DENOTES POSITIVE COVENANT

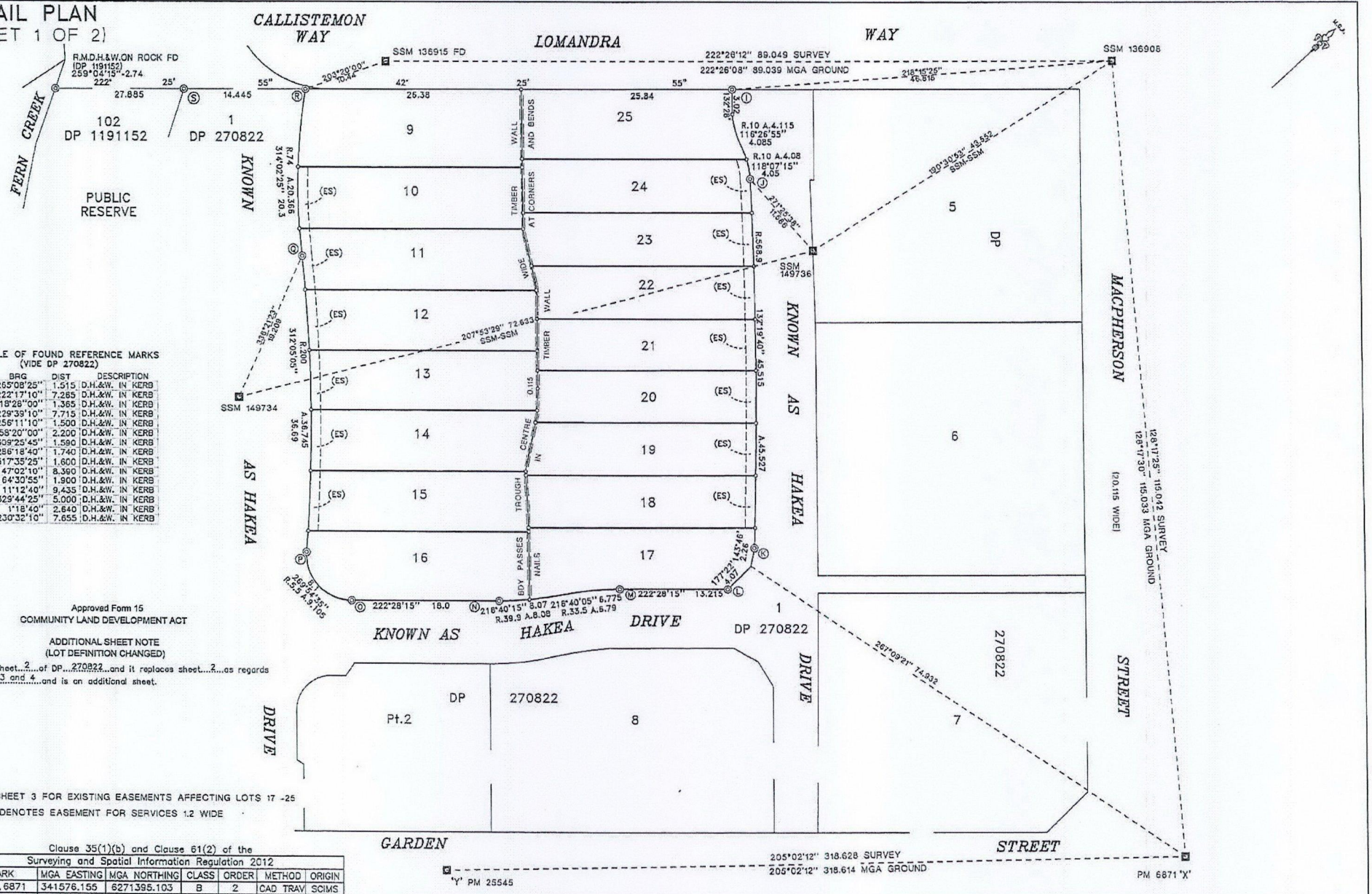
10 20 30 40 50 Table of mm 90 100 110 120 130 140

| | | | |
|---|---|---|---|
| Surveyor : ANDREW P. MASON<br>Date of Survey : 14.06.2015<br>SURVEYOR'S REFERENCE: 33035CT1 | PLAN OF SUBDIVISION OF LOT 101 DP 1191152 | LGA: PITTWATER<br>Locality: WARRIEWOOD<br>Subdivision No: P06/15.<br>Lengths are in metres. Reduction Ratio 1:300 | Registered: 28.1.2016 | DP270822 |

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:5 of 18
Ref: /Src:X

PLAN FORM 2 (A2) WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION Sheet 1 of 2 sheets

# DETAIL PLAN
(SHEET 1 OF 2)




SCHEDULE OF FOUND REFERENCE MARKS
(VIDE DP 270822)

| No | BRG | DIST | DESCRIPTION |
|---|---|---|---|
| I | 265°08'25" | 1.515 | D.H.&W. IN KERB |
| J | 222°17'10" | 7.265 | D.H.&W. IN KERB |
| | 218°28'00" | 1.365 | D.H.&W. IN KERB |
| K | 229°39'10" | 7.715 | D.H.&W. IN KERB |
| | 256°11'10" | 1.500 | D.H.&W. IN KERB |
| L | 358°20'00" | 2.200 | D.H.&W. IN KERB |
| M | 309°25'45" | 1.580 | D.H.&W. IN KERB |
| N | 286°18'40" | 1.740 | D.H.&W. IN KERB |
| O | 317°35'25" | 1.600 | D.H.&W. IN KERB |
| P | 47°02'10" | 8.390 | D.H.&W. IN KERB |
| | 64°30'55" | 1.900 | D.H.&W. IN KERB |
| Q | 11°12'40" | 9.435 | D.H.&W. IN KERB |
| | 329°44'25" | 5.000 | D.H.&W. IN KERB |
| R | 1°18'40" | 2.640 | D.H.&W. IN KERB |
| S | 230°32'10" | 7.655 | D.H.&W. IN KERB |

Approved Form 15
COMMUNITY LAND DEVELOPMENT ACT

ADDITIONAL SHEET NOTE
(LOT DEFINITION CHANGED)

This is sheet 2 of DP 270822 and it replaces sheet 2 as regards lot(s)* 3 and 4 and is an additional sheet.

NOTES:
1. SEE SHEET 3 FOR EXISTING EASEMENTS AFFECTING LOTS 17 -25
2. (ES) DENOTES EASEMENT FOR SERVICES 1.2 WIDE

Clause 35(1)(b) and Clause 61(2) of the Surveying and Spatial Information Regulation 2012

| MARK | MGA EASTING | MGA NORTHING | CLASS | ORDER | METHOD | ORIGIN |
|---|---|---|---|---|---|---|
| P.M.6871 | 341576.155 | 6271395.103 | B | 2 | CAD TRAV | SCIMS |
| P.M.25545 | 341441.332 | 6271106.454 | B | 2 | CAD TRAV | SCIMS |
| SSM136908 | 341485.878 | 6271466.378 | C | 3 | CAD TRAV | SCIMS |
| SSM136915 | 341425.804 | 6271400.670 | C | 3 | CAD TRAV | SCIMS |
| SSM149734 | 341443.936 | 6271359.373 | —— | —— | CAD TRAV | CALC. |
| SSM149736 | 341477.913 | 6271423.568 | —— | —— | CAD TRAV | CALC. |

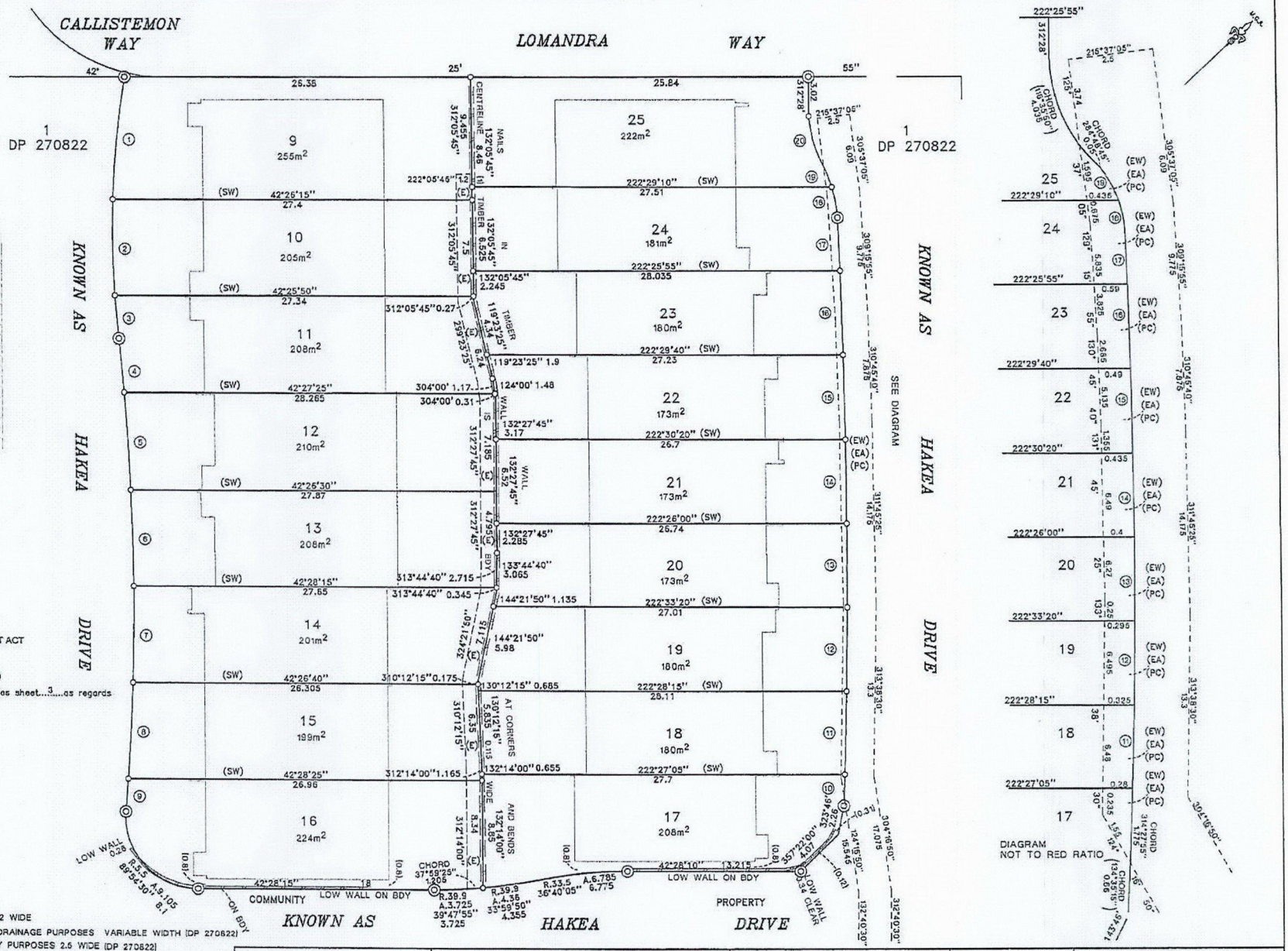
DATE:15.04.2015 COMBINED SCALE FACTOR: 0.999904 ZONE 56

Table of mm

| Surveyor : ANDREW P. MASON | PLAN OF SUBDIVISION OF LOTS 3 & 4 DP 270822 | LGA: PITTWATER | Registered: | DP 270822 |
|---|---|---|---|---|
| Date of Survey : 25.08.2015 | | Locality: WARRIEWOOD | 29.01.2016 | ADDITIONAL SHEET 6 |
| SURVEYOR'S REFERENCE: 3303SCT2 | | Subdivision No: | | |
| | | Lengths are in metres. Reduction Ratio 1:300 | | |

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:6 of 18
Ref: /Src:X

# DETAIL PLAN
(SHEET 2 OF 2)




SCHEDULE OF CURVED LINES

| No. | BRG | DIST | ARC | RADIUS |
|---|---|---|---|---|
| 1 | 138°14'35" | 9.500 | 9.510 | R.74 |
| 2 | 131°38'20" | 7.505 | 7.510 | R.74 |
| 3 | 127°27'05" | 3.350 | 3.350 | R.74 |
| 4 | 127°25'10" | 4.175 | 4.175 | R.200 |
| 5 | 129°05'35" | 7.515 | 7.515 | R.200 |
| 6 | 131°14'40" | 7.500 | 7.500 | R.200 |
| 7 | 133°23'30" | 7.495 | 7.495 | R.200 |
| 8 | 135°32'25" | 7.500 | 7.500 | R.200 |
| 9 | 136°58'55" | 2.560 | 2.560 | R.200 |
| 10 | 314°29'55" | 2.435 | 2.435 | R.568.9 |
| 11 | 314°02'55" | 6.485 | 6.485 | R.568.9 |
| 12 | 313°23'45" | 6.495 | 6.495 | R.568.9 |
| 13 | 312°44'25" | 6.520 | 6.520 | R.568.9 |
| 14 | 312°05'05" | 6.490 | 6.490 | R.568.9 |
| 15 | 311°25'55" | 6.490 | 6.490 | R.568.9 |
| 16 | 310°46'35" | 6.505 | 6.505 | R.568.9 |
| 17 | 310°14'30" | 4.110 | 4.110 | R.568.9 |
| 18 | 302°51'20" | 2.420 | 2.430 | R.10 |
| 19 | 291°09'50" | 1.650 | 1.655 | R.10 |
| 20 | 296°26'55" | 4.085 | 4.115 | R.10 |

Approved Form 15
COMMUNITY LAND DEVELOPMENT ACT

ADDITIONAL SHEET NOTE
(LOT DEFINITION CHANGED)

This is sheet 3 of DP 270822 and it replaces sheet 3 as regards lot(s)* 3 and 4 and is an additional sheet.

(E) DENOTES EASEMENT TO DRAIN WATER 1.2 WIDE
(EA) DENOTES EASEMENT FOR ACCESS AND DRAINAGE PURPOSES VARIABLE WIDTH (DP 270822)
(EW) DENOTES EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE (DP 270822)
(PC) DENOTES POSITIVE COVENANT (DP 270822)
(SW) DENOTES EACH TWO STOREY BK & WB RESIDENCE HAS SEPARATE WALLS
SEE SHEET 2 FOR REFERENCE MARK DETAILS.

Table of mm

| Surveyor : | ANDREW P. MASON |
|---|---|
| Date of Survey : | 25.08.2015 |
| SURVEYOR'S REFERENCE: | 33035CT2 |

PLAN OF SUBDIVISION OF LOTS 3 & 4 DP 270822

| | |
|---|---|
| LGA: | PITTWATER |
| Locality: | WARRIEWOOD |
| Subdivision No: | |
| Lengths are in metres. Reduction Ratio 1:200 | |

Registered: 29.01.2016

**DP 270822**
ADDITIONAL SHEET 7

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:7 of 18
Ref: /Src:X

# DP270822

## COVER SHEET FOR SIGNATURE/ADMINISTRATION SHEETS

**ATTENTION**

A Community Plan may be subject to future subdivision that may contain a Signature/Administration Sheet. This document will then comprise separate Signature/Administration Sheets registered on different dates.

Particulars of each Signature/Administration Sheet are as follows:-

| Sig/Admin Sheet Number | Number of Sig/Admin Sheets | Contains U.E. Schedule (Y/N) | Registration Date | Number of Sheets in Subject Plan | Lot Numbers Created |
|---|---|---|---|---|---|
| Document A | 5 | Y | 28·1·2016 | 5 | 8 |
| Document B | 5 | Y | 29.1.2016 | 2 | 9-25 |
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PLAN FORM 6 (2013) WARNING: Creasing or folding will lead to rejection DOC. A.

# DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 15 sheet(s)

Office Use Only

Registered: NC 28.1.2016

Title System: TORRENS

Purpose: SUBDIVISION.

Use Only

DP270822 S

**PLAN OF SUBDIVISION OF LOT 101**
**DP 1191152**

LGA: PITTWATER

Locality: WARRIEWOOD

Parish: NARRABEEN

County: CUMBERLAND

## Crown Lands NSW/Western Lands Office Approval

I, ..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

## Subdivision Certificate

I, Warwick Lawrence

*Authorised Person/*~~General Manager/*Accredited Certifier~~, certify that the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Accreditation number: .....

Consent Authority: PITTWATER COUNCIL

Date of endorsement: 16/12/15

Subdivision Certificate number: P06/15

File number: N0085/11/S96/5

*Strike through if inapplicable.

## Survey Certificate

I, ANDREW PHILIP MASON

of FRANK M MASON & CO PTY LTD, 2 WINSLOW STREET,

KIRRIBILLI NSW 2061

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on 14 JUNE 2015

*(b) ~~The part of the land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on, ..... the part~~ not surveyed was compiled in accordance with that Regulation.

*(c) ~~The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2012*.~~

Signature: ..... Dated: 14 June 2015

Surveyor ID: 1576

Datum Line: X-Y

Type: Urban

The terrain is Level-Undulating

*Strike through if inapplicable.

^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Statements of intention to dedicate public roads create public reserves and drainage reserves, acquire/resume land.

Plans used in the preparation of survey/compilation.

DP 1191152

If space is insufficient continue on PLAN FORM 6A

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Surveyor's Reference:33035CT1

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:10 of 18
Ref: /Src:X

PLAN FORM 6D (2012)(Community annexure) WARNING: Creasing or folding will lead to rejection Doc. A.

# DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 5 PS. sheet(s)

Office Use Only

Registered: HC 28.1.2016

Office Use Only

DP270822

**PLAN OF SUBDIVISION OF LOT 101 IN DP 1191152**

Signatures and Consents, a schedule of lots and addresses and statements relating to a section 88B instrument should be provided on Plan Form 6A

Subdivision Certificate number: P06/15

Date of endorsement: 16/12/15

Name of Development (Optional)

**THE GROVE**

Address for Service of Notices

C/- Australia Pacific Property Group
Level 1
4 Ponderosa Parade
WARRIEWOOD NSW 2102

**WARNING STATEMENT (Approved Form 7)**

This document shows an initial schedule of unit entitlements for the Community, Precinct or Neighbourhood Scheme which is liable to be altered, as the scheme is developed or on completion of the scheme, in accordance with the provisions of section 30 *Community Land Development Act 1989*.

Any changes will be recorded in a replacement schedule.

**UPDATE NOTE (Approved Form 8)**

This document contains an *updated/*revised Schedule of Unit Entitlements and replaces the existing schedule registered on ^ .....

** Strike through if inapplicable*
*^ Insert registration date of previous schedule*

**VALUER'S CERTIFICATE (Approved Form 9)**

I, Tyronne Hodge
of Jones Lang LaSalle
being a Valuer registered under the *Valuers Registration Act 1975*, certify that;

*(a) The unit entitlements shown in the schedule herewith are based upon valuations made by me on 7/11/13

*(b) The unit entitlements shown in the schedule herewith, for the new lots created by the subdivision, are based upon their market value on 7/11/13 being the date of the valuer's certificate lodged with the original initial schedule or the revised schedule.

Signature: ..... Dated: 1/9/15

** Strike through if inapplicable*
*^ Insert date of valuation*

SCHEDULE OF UNIT ENTITLEMENT

| LOT | UNIT ENTITLEMENT | SUBDIVISION |
|---|---|---|
| 1 | COMMUNITY PROPERTY | |
| 2 | 509 | |
| 3 | 2,185 | |
| 4 | 2,226 | |
| 5 | 1,030 | |
| 6 | 1,028 | |
| 7 | 1,284 | |
| 8 | 1,738 | |
| AGGREGATE | 10,000 | |

HISTORICAL FILE
SEE ADMINISTRATION SHEET 3 (DOC.B)

If space is insufficient use annexure sheet –Plan Form 6A

Surveyor's Reference:33035CT1

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:11 of 18
Ref: /Src:X

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection DOC. A.

# DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 3 of ~~4~~ 5 sheet(s) RS.

Office Use Only

Registered: HC 28.1.2016.

Office Use Only

DP270822

**PLAN OF SUBDIVISION OF LOT 101**
**DP 1191152**

This sheet is for the provision of the following information as required:
- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: P06/15

Date of Endorsement: 16/12/15

**PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919, IT IS INTENDED TO CREATE:**

1. EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE
2. EASEMENT FOR ACCESS AND DRAINAGE PURPOSES VARIABLE WIDTH
3. POSITIVE COVENANT RS.
4. EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 3.3 WIDE
5. EASEMENT FOR OVERHANG 1.8 WIDE AND VARIABLE WIDTH
6. EASEMENT FOR SERVICES 1.2, 2 WIDE ~~AND VARIABLE WIDTH~~ RS.
7. EASEMENT FOR DRAINAGE OF WATER 1.2 WIDE AND VARIABLE WIDTH
8. EASEMENT FOR SERVICES 2 WIDE AND VARIABLE WIDTH RS.

EXECUTED BY **WARRIEWOOD PROPERTIES PTY LTD**
Pursuant to Sec. 127 of the Corporations Act 2001
ACN 092 158 499

Richie Steinert
SECRETARY / DIRECTOR

RICHIE COLIN STEINERT
Name (please print full name)

DIRECTOR

PETER ROBERT HAXELL
Name (please print full name)

Executed by **Sydney Water Corporation**
ABN 49 776 225 038 pursuant to Section 50(3) (a)
Of the Interpretation Act 1987 by an authorised
Delegate

K. Yates
Signature of witness

Kendall Yates
Name of witness (please print full name)

signature of authorised delegate

Grant May
name of authorised delegate

A/Manager Group Property
title of authorised delegate

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT1

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:12 of 18
Ref: /Src:X

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection Doc. A.

## DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 4 of 4 5 pgs. sheet(s)

Office Use Only

Registered: HC 28.1.2016.

PLAN OF SUBDIVISION OF LOT 1021 DP 1191152

Office Use Only

DP270822

This sheet is for the provision of the following information as required:
- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any Information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: P06/15

Date of Endorsement: 16/12/15

**EXECUTED** for and on behalf of **AUSGRID** by Michael McHugh its duly constituted Attorney pursuant to Power of Attorney registered Book 4528 No. 401 in the presence of: 4693

.....
Attorney

331

.....
Witness Lisa Jane Anderson

.....
Name of Witness (please print)

570 George Street,
Sydney, NSW, 2000

.....
Address of Witness

Executed by Mortgagee:

Executed for and on behalf of **Australia and New Zealand Banking Group Limited** ABN 11 005 357 522 under Power of Attorney dated *18th November 2002* and registered in *New South Wales* *Book: 4376 Folio: 410* by Steven Knight who certifies that he/she is a *Senior Manager/ Manager* and that he/she has not received notice of revocation of that Power.

.....
Signature of Attorney

In the presence of

.....
Signature of Witness

CHANNA JAYASURIYA
Print name of Witness

242 Pitt Street
SYDNEY NSW 2000
Address of Witness

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT1

Req:R562414 /Doc:DP 0270822 P /Rev:04-Feb-2016 /Sts:SC.OK /Pgs:ALL /Prt:20-Apr-2016 11:57 /Seq:13 of 18
Ref: /Src:X

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection Doc. A.

## DEPOSITED PLAN ADMINISTRATION SHEET



Office Use Only

Registered: HC 28.1.2016.

Office Use Only

DP270822

**PLAN OF SUBDIVISION OF LOT 101**
**DP 1191152**

Subdivision Certificate number: PA6/15

Date of Endorsement: 16/12/15

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

| LOT NUMBER | STREET NUMBER | STREET NAME | STREET TYPE | LOCALITY |
|---|---|---|---|---|
| 1 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 2 | 270 | GARDEN | STREET | WARRIEWOOD |
| 3 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 4 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 5 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 6 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 7 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |
| 8 | (unknown) | HAKEA | DRIVE | WARRIEWOOD |

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT1

PLAN FORM 6 (2013) WARNING: Creasing or folding will lead to rejection

# DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 5 sheet(s)

Office Use Only

Registered: 29.01.2016

Title System: TORRENS

Purpose: SUBDIVISION

Office Use Only

DP270822 S (DOC. B)

**PLAN OF SUBDIVISION OF LOTS 3 & 4 IN DP 270822**

LGA: PITTWATER

Locality: WARRIEWOOD

Parish: NARRABEEN

County: CUMBERLAND

## Crown Lands NSW/Western Lands Office Approval

I, ..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

## Subdivision Certificate

I, Warwick Lawrence

*Authorised Person/~~*General Manager/*Accredited Certifier~~, certify that the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Accreditation number: .....

Consent Authority: PITTWATER COUNCIL

Date of endorsement: 16/12/15

Subdivision Certificate number: P07/15

File number: N0085/11/S96/5

*Strike through if inapplicable.

## Survey Certificate

I, ANDREW PHILIP MASON

of FRANK M MASON & CO PTY LTD, 2 WINSLOW STREET, KIRRIBILLI NSW 2061

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on 25 AUGUST 2015

*(b) ~~The part of the land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on, ..... the part not surveyed was compiled in accordance with that Regulation.~~

*(c) ~~The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2012*.~~

Signature: ..... Dated: 25 AUGUST 2015

Surveyor ID: 1576

Datum Line: X-Y

Type: Urban

The terrain is Level-Undulating

*Strike through if inapplicable.

^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Statements of intention to dedicate public roads create public reserves and drainage reserves, acquire/resume land.

Plans used in the preparation of survey/compilation.

DP 270822

If space is insufficient continue on PLAN FORM 6A

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Surveyor's Reference:33035CT2

PLAN FORM 6D (2012)(Community annexure) WARNING: **Creasing or folding will lead to rejection**

## DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 5 sheet(s)

| Office Use Only | Office Only |
|---|---|
| Registered: 29.01.2016 | DP270822 (DOC. B) |
| **PLAN OF SUBDIVISION OF LOTS 3 & 4 IN DP 270822** | Signatures and Consents, a schedule of lots and addresses and statements relating to a section 88B instrument should be provided on Plan Form 6A |
| Subdivision Certificate number: P07/15<br>Date of endorsement: 16/12/15 | |
| Name of Development (Optional)<br>THE GROVE | Address for Service of Notices<br>c/- Australia Pacific Property Group<br>Level 1<br>4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |

### WARNING STATEMENT (Approved Form 7)

This document shows an initial schedule of unit entitlements for the Community, Precinct or Neighbourhood Scheme which is liable to be altered, as the scheme is developed or on completion of the scheme, in accordance with the provisions of section 30 *Community Land Development Act 1989*.

Any changes will be recorded in a replacement schedule.

### UPDATE NOTE (Approved Form 8)

This document contains an *updated/*~~revised~~ Schedule of Unit Entitlements and replaces the existing schedule registered on ^ 28.01.2016

** Strike through if inapplicable*
*^ Insert registration date of previous schedule*

### VALUER'S CERTIFICATE (Approved Form 9)

I, Tyronne Hodge
of Jones Lang LaSalle
being a Valuer registered under the *Valuers Registration Act 1975*, certify that;

*(a) The unit entitlements shown in the schedule herewith are based upon valuations made by me on 7/11/2013

*(b) The unit entitlements shown in the schedule herewith, for the new lots created by the subdivision, are based upon their market value on 7/11/2013 being the date of the valuer's certificate lodged with the original initial schedule or the revised schedule.

Signature: ..... Dated: 1/9/15

** Strike through if inapplicable*
*^ Insert date of valuation*

### SCHEDULE OF UNIT ENTITLEMENT

SEE SHEET 3 FOR UNIT ENTITLEMENTS

If space is insufficient use annexure sheet –Plan Form 6A

Surveyor's Reference:33035CT2

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection

## DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 3 of 5 sheet(s)

Office Use Only

Registered: 29.01.2016

Office Use Only

DP270822

(DOC.B)

**PLAN OF SUBDIVISION OF LOTS 3 & 4 IN DP 270822**

Subdivision Certificate number: P07/15

Date of Endorsement: 16/12/15

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

### SCHEDULE OF UNIT ENTITLEMENTS

| LOT | UNIT ENTITLEMENT | SUBDIVISION |
|---|---|---|
| 1 | COMMUNITY PROPERTY | |
| 2 | 509 | |
| 3 | NOW LOTS 9-16 | (SEE ADDITIONAL SHEET 6-7) |
| 4 | NOW LOTS 17-25 | (SEE ADDITIONAL SHEET 6-7) |
| 5 | 1,030 | |
| 6 | 1,028 | |
| 7 | 1,284 | |
| 8 | 1,738 | |
| 9 | 278 | |
| 10 | 272 | |
| 11 | 272 | |
| 12 | 272 | |
| 13 | 272 | |
| 14 | 272 | |
| 15 | 272 | |
| 16 | 275 | |
| 17 | 253 | |
| 18 | 246 | |
| 19 | 246 | |
| 20 | 246 | |
| 21 | 246 | |
| 22 | 246 | |
| 23 | 246 | |
| 24 | 246 | |
| 25 | 251 | |
| AGGREGATE | 10,000 | |

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT2

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection

## DEPOSITED PLAN ADMINISTRATION SHEET



Office Use Only

Registered: 29.01.2016

Office Use Only

DP270822

(DOC. B)

**PLAN OF SUBDIVISION OF LOTS 3 & 4 IN DP 270822**

This sheet is for the provision of the following information as required:
- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: P07/15

Date of Endorsement: 16/12/15

**PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, 1919, IT IS INTENDED TO CREATE:**

1. EASEMENT TO DRAIN WATER 1.2 WIDE
2. EASEMENT FOR SERVICES 1.2 WIDE
3. RESTRICTION ON THE USE OF LAND

EXECUTION BY **WARRIEWOOD PROPERTIES PTY LTD**
ACN 092 158 499
PURSUANT TO SEC. 127 OF THE CORPORATIONS ACT 2001

.....
SECRETARY/DIRECTOR

RICHIE COLIN STEINERT
Name (please print full name)

.....
DIRECTOR

PETER ROBERT HAXELL.
Name (please print full name)

Executed by Mortgagee:

Executed for and on behalf of
Australia and New Zealand Banking Group Limited
ABN 11 005 357 522
under Power of Attorney dated *18th November 2002*
and registered in *New South Wales*
*Book: 4376 Folio: 410* by

Steven King

who certifies that he/she is a
*Senior Manager/ Manager*
and that he/she has not received
notice of revocation of that Power.

Signature of Attorney

In the presence of

Signature of Witness

CHANNA JAYASINGHE
Print name of Witness

242 Pitt Street
SYDNEY NSW 2000
Address of Witness

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT2

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection

## DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 5 of 5 sheet(s)

Office Use Only

Registered: 29.01.2016

Office Use Only

DP270822

(Doc. B)

PLAN OF SUBDIVISION OF LOTS 3 & 4 IN DP 270822

Subdivision Certificate number: 207/15

Date of Endorsement: 16/12/15

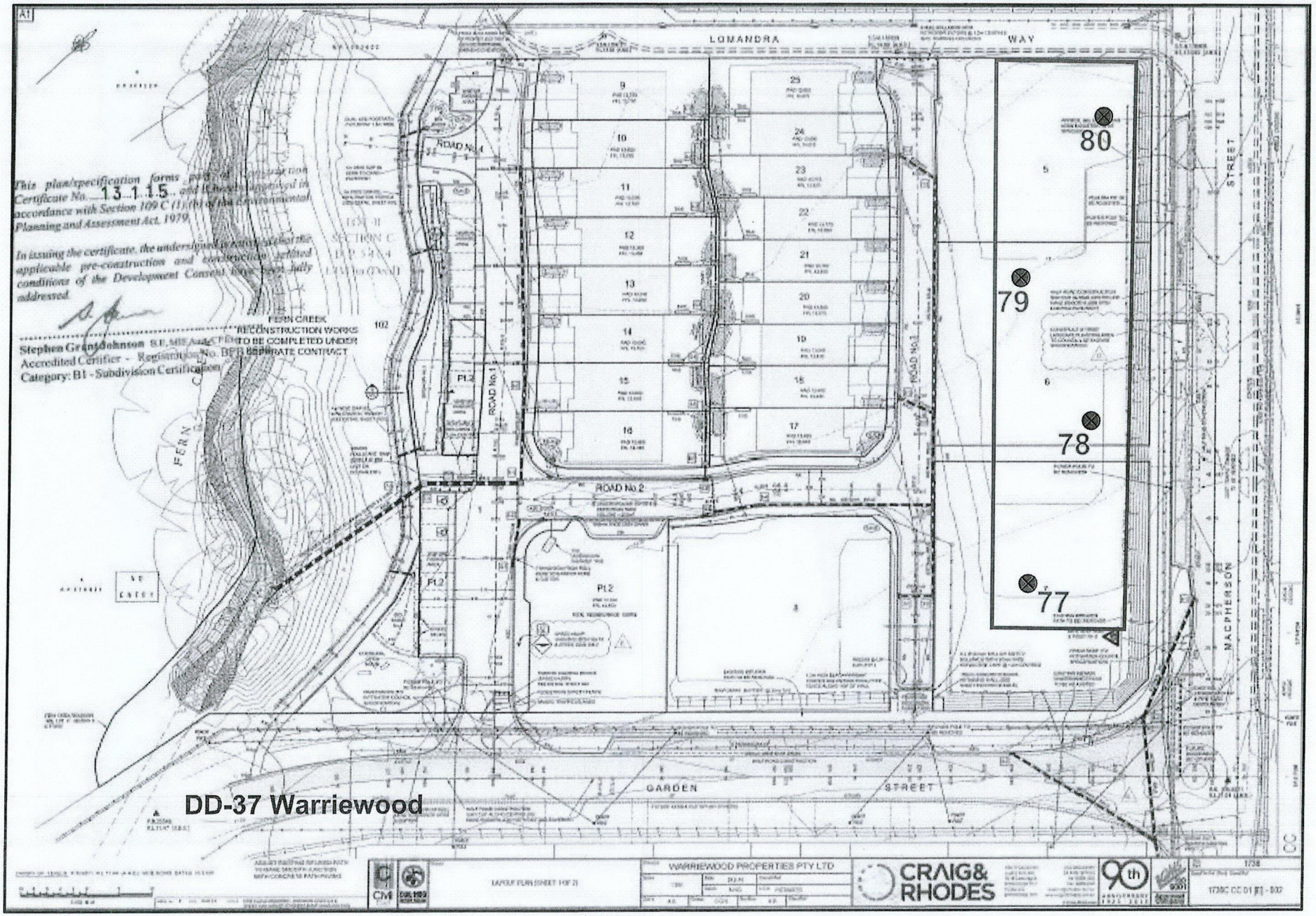
This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

| LOT NUMBER | STREET NUMBER | STREET NAME | STREET TYPE | LOCALITY |
|---|---|---|---|---|
| 1 | - | HAKEA | DRIVE | WARRIEWOOD |
| 2 | 270 | GARDEN | STREET | WARRIEWOOD |
| 5 | - | HAKEA | DRIVE | WARRIEWOOD |
| 6 | - | HAKEA | DRIVE | WARRIEWOOD |
| 7 | - | HAKEA | DRIVE | WARRIEWOOD |
| 8 | - | HAKEA | DRIVE | WARRIEWOOD |
| 9 | 1 | HAKEA | DRIVE | WARRIEWOOD |
| 10 | 2 | HAKEA | DRIVE | WARRIEWOOD |
| 11 | 3 | HAKEA | DRIVE | WARRIEWOOD |
| 12 | 4 | HAKEA | DRIVE | WARRIEWOOD |
| 13 | 5 | HAKEA | DRIVE | WARRIEWOOD |
| 14 | 6 | HAKEA | DRIVE | WARRIEWOOD |
| 15 | 7 | HAKEA | DRIVE | WARRIEWOOD |
| 16 | 8 | HAKEA | DRIVE | WARRIEWOOD |
| 17 | 17 | HAKEA | DRIVE | WARRIEWOOD |
| 18 | 18 | HAKEA | DRIVE | WARRIEWOOD |
| 19 | 19 | HAKEA | DRIVE | WARRIEWOOD |
| 20 | 20 | HAKEA | DRIVE | WARRIEWOOD |
| 21 | 21 | HAKEA | DRIVE | WARRIEWOOD |
| 22 | 22 | HAKEA | DRIVE | WARRIEWOOD |
| 23 | 23 | HAKEA | DRIVE | WARRIEWOOD |
| 24 | 24 | HAKEA | DRIVE | WARRIEWOOD |
| 25 | 25 | HAKEA | DRIVE | WARRIEWOOD |

If space is insufficient use additional annexure sheet

Surveyor's Reference:33035CT2


LOMANDRA WAY
ROAD No.1
ROAD No.2
FERN CREEK
RECONSTRUCTION WORKS
TO BE COMPLETED UNDER
A SEPARATE CONTRACT
This plan/specification forms part of Construction Certificate No. 13.1.15 and is hereby approved in accordance with Section 109 C (1)(b) of the Environmental Planning and Assessment Act, 1979.
In issuing the certificate, the undersigned is satisfied that the applicable pre-construction and construction related conditions of the Development Consent have been fully addressed.
Stephen Grantjohnston
Accredited Certifier - Registration No. BPB
Category: B1 - Subdivision Certification
80
79
78
77
MACPHERSON STREET
GARDEN STREET
DD-37 Warriewood
WARRIEWOOD PROPERTIES PTY LTD
CRAIG& RHODES

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

ABN 53 159 700 419
Ph: 0424 639 602
54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

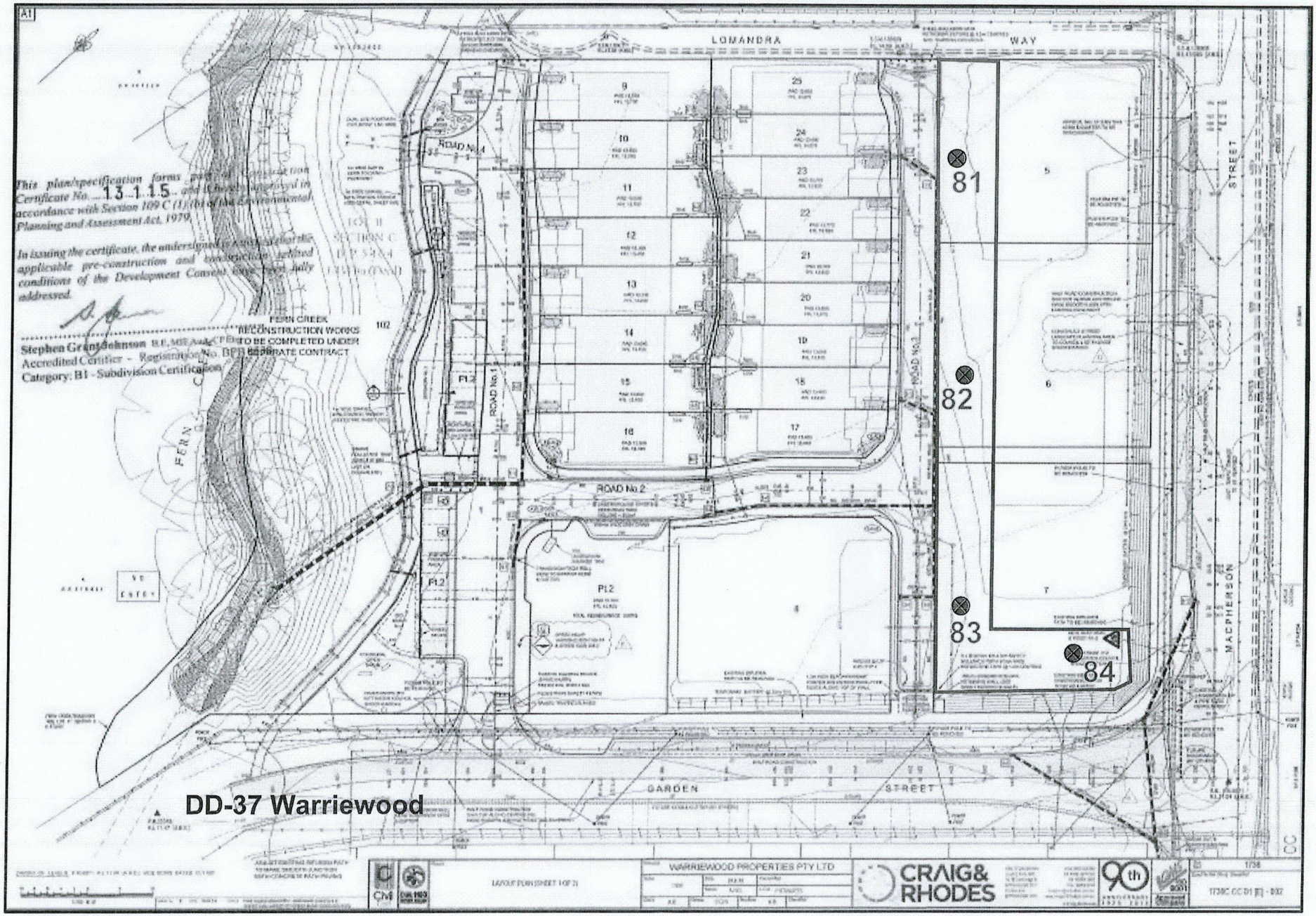
## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15-09-14 | 77 | 140915 | E341527.99 N6271395.50 | Brown Sandy Gravel (Sandstone) | 10.6 | 12.93 | 19mm | 8.3 | Std | 2.18 | 2.18 | 100.5 | O.M.C. | Pass | |
| 15-09-14 | 78 | 140915 | E341506.26 N6271425.79 | Brown Sandy Gravel (Sandstone) | 10.7 | 13.47 | 19mm | 4.8 | Std | 2.16 | 2.14 | 101.0 | O.M.C. | Pass | |
| 15-09-14 | 79 | 140915 | E341488.59 N6271425.11 | Brown Sandy Gravel (Sandstone) | 11.6 | 13.60 | 19mm | 7.4 | Std | 2.14 | 2.17 | 99.0 | 1.0wet | Pass | |
| 15-09-14 | 80 | 140915 | E341488.51 N6271443.17 | Brown Sandy Gravel (Sandstone) | 11.8 | 13.70 | 19mm | 12.4 | Std | 2.14 | 2.16 | 99.0 | 0.5wet | Pass | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Vlet 16-12-2013
**Material Conformity:** Pass
**Layer Thickness:** 200mm
**Lot Volume m3:** 317m3
**Accepted as a Lot:** YES



LOMANDRA WAY
MACPHERSON STREET
GARDEN STREET
ROAD No.1
ROAD No.2
ROAD No.3
ROAD No.4
FERN CREEK
RECONSTRUCTION WORKS TO BE COMPLETED UNDER SEPARATE CONTRACT
This plan/specification forms part of Construction Certificate No. 13115 and is hereby approved in accordance with Section 109 C (1)(b) of the Environmental Planning and Assessment Act, 1979.
In issuing the certificate, the undersigned is satisfied that the applicable pre-construction and construction related conditions of the Development Consent have been fully addressed.
Stephen Grantdohnson B.E.,MIEAust,CPEng
Accredited Certifier - Registration No. BPB
Category: B1 - Subdivision Certification
81
82
83
84
DD-37 Warriewood
WARRIEWOOD PROPERTIES PTY LTD
CRAIG& RHODES

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

ABN 53 159 700 419
Ph: 0424 639 602
54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

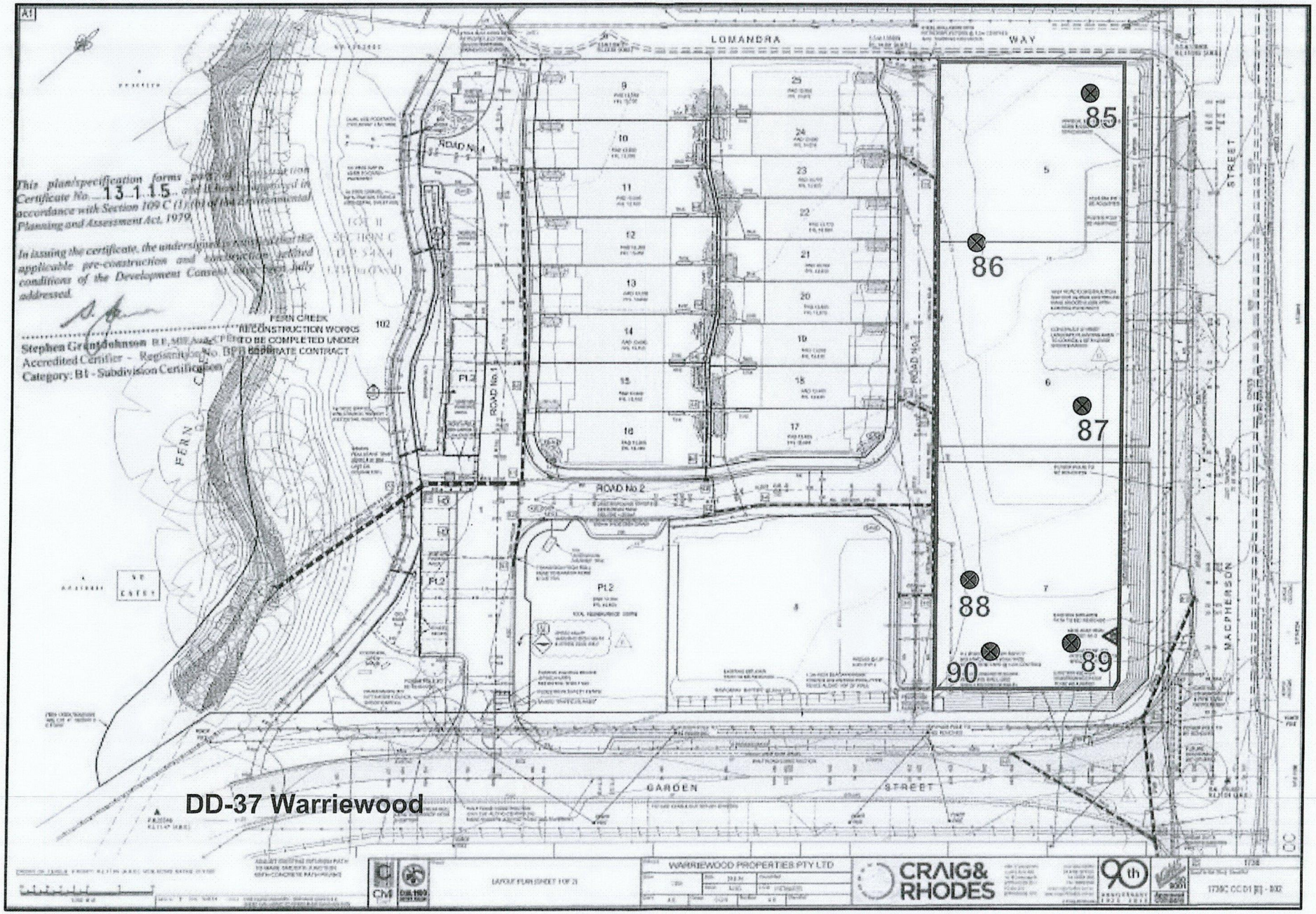
## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16-09-14 | 81 | 140916 | E341472.85 N6271433.15 | Brown Sandy Gravel (Sandstone) | 11.0 | 13.73 | 19mm | 7.4 | Std | 2.11 | 2.14 | 99.0 | 0.5dry | Pass | |
| 16-09-14 | 82 | 140916 | E341490.72 N6271416.60 | Brown Sandy Gravel (Sandstone) | 10.8 | 13.56 | 19mm | 2.2 | Std | 2.09 | 2.11 | 99.0 | 1.0dry | Pass | |
| 16-09-14 | 83 | 140916 | E341504.50 N6271408.39 | Brown Sandy Gravel (Sandstone) | 11.0 | 13.38 | 19mm | 5.8 | Std | 2.13 | 2.15 | 99.0 | O.M.C. | Pass | |
| 16-09-14 | 84 | 140916 | E341535.01 N6271398.22 | Brown Sandy Gravel (Sandstone) | 11.0 | 12.90 | 19mm | 5.9 | Std | 2.14 | 2.14 | 100.0 | 0.5dry | Pass | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Vlet 16-12-2013
**Material Conformity:** Pass
**Layer Thickness:** 200mm
**Lot Volume m3:** 222m3
**Accepted as a Lot:** YES




**DD-37 Warriewood**

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

ABN 53 159 700 419
Ph: 0424 639 602
54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

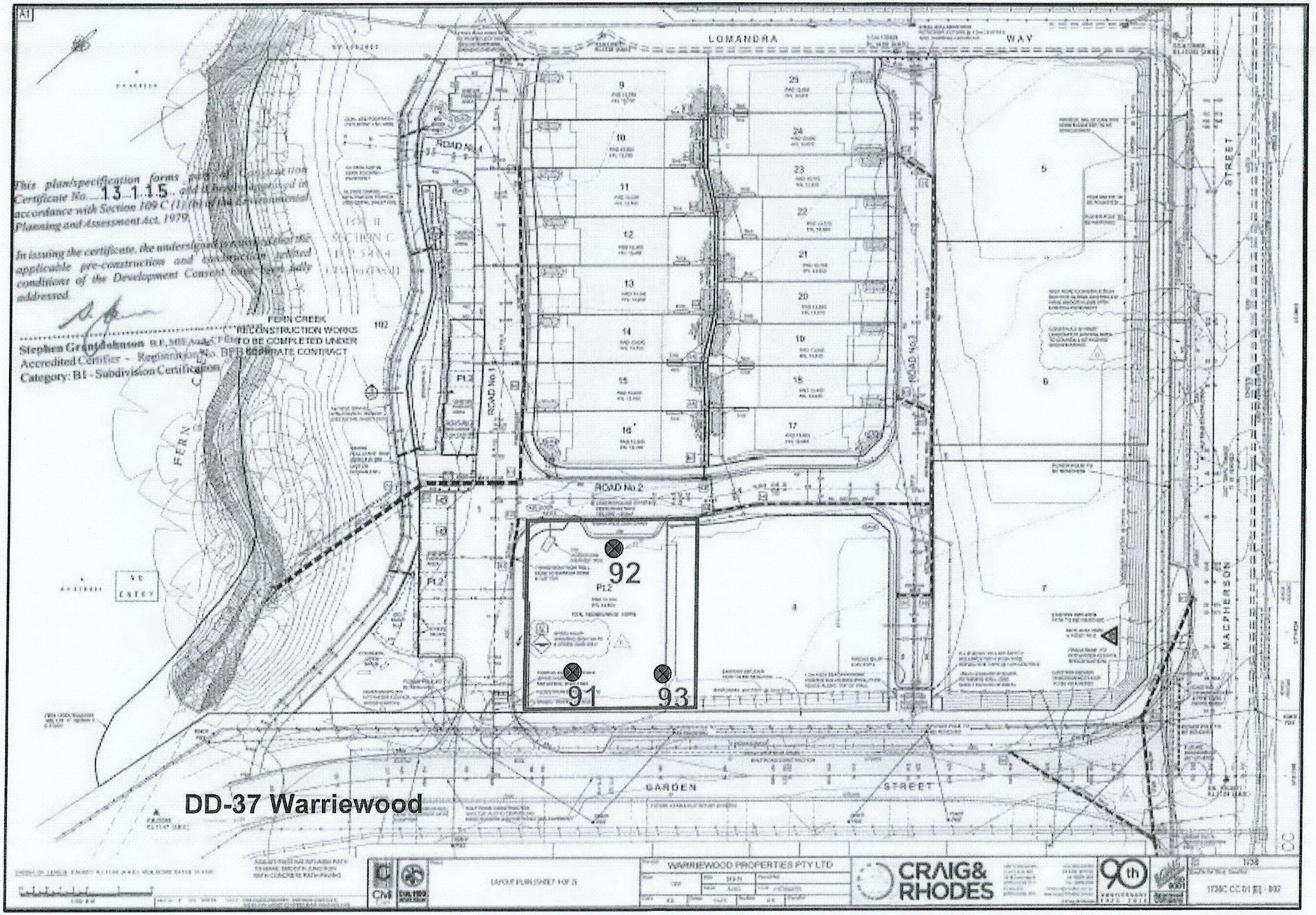
## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17-09-14 | 85 | 140917 | E341483.27 N6271426.34 | Brown Sandy Gravel (Sandstone) | 12.0 | 14.01 | 19mm | 9.9 | Std | 2.15 | 2.18 | 99.0 | 1.0wet | Pass | |
| 17-09-14 | 86 | 140917 | E341493.32 N6271443.38 | Brown Sandy Gravel (Sandstone) | 11.4 | 13.84 | 19mm | 4.8 | Std | 2.04 | 2.16 | 94.0 | 0.5wet | Fail | |
| 17-09-14 | 87 | 140917 | E341509.97 N6271405.86 | Brown Sandy Gravel (Sandstone) | 10.3 | 13.48 | 19mm | 6.6 | Std | 2.02 | 2.14 | 94.5 | 0.5dry | Fail | |
| 17-09-14 | 88 | 140917 | E341526.42 N6271409.33 | Brown Sandy Gravel (Sandstone) | 11.5 | 13.41 | 19mm | 7.3 | Std | 2.10 | 2.14 | 98.0 | O.M.C. | Pass | |
| 17-09-14 | 89 | 140917 | E341543.91 N6271393.88 | Brown Sandy Gravel (Sandstone) | 10.5 | 12.88 | 19mm | 9.5 | Std | 2.09 | 2.13 | 98.0 | 0.5dry | Pass | |
| 17-09-14 | 90 | 140917 | E341540.20 N6271387.54 | Brown Sandy Gravel (Sandstone) | 10.8 | 12.75 | 19mm | 4.8 | Std | 2.05 | 2.18 | 94.0 | O.M.C. | Fail | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Viet 16-12-2013
**Material Conformity:** FAIL
**Layer Thickness:** 200mm
**Lot Volume m3:** 400m3
**Accepted as a Lot:** NO


LOMANDRA WAY
ROAD No.4
ROAD No.1
ROAD No.2
ROAD No.3
FERN CREEK
RECONSTRUCTION WORKS
TO BE COMPLETED UNDER
SEPARATE CONTRACT
92
91
93
GARDEN STREET
MACPHERSON STREET
DD-37 Warriewood
This plan/specification forms part of Construction Certificate No. 13.1.15 and should be read in accordance with Section 109 C (1) (b) of the Environmental Planning and Assessment Act, 1979.
In issuing the certificate, the undersigned is satisfied that the applicable pre-construction and construction related conditions of the Development Consent have been or will be addressed.
Stephen Grandjohnson
Accredited Certifier - Registration No. BPB
Category: B1 - Subdivision Certification
WARRIEWOOD PROPERTIES PTY LTD
CRAIG&
RHODES

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

ABN 53 159 700 419
Ph: 0424 639 602
54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

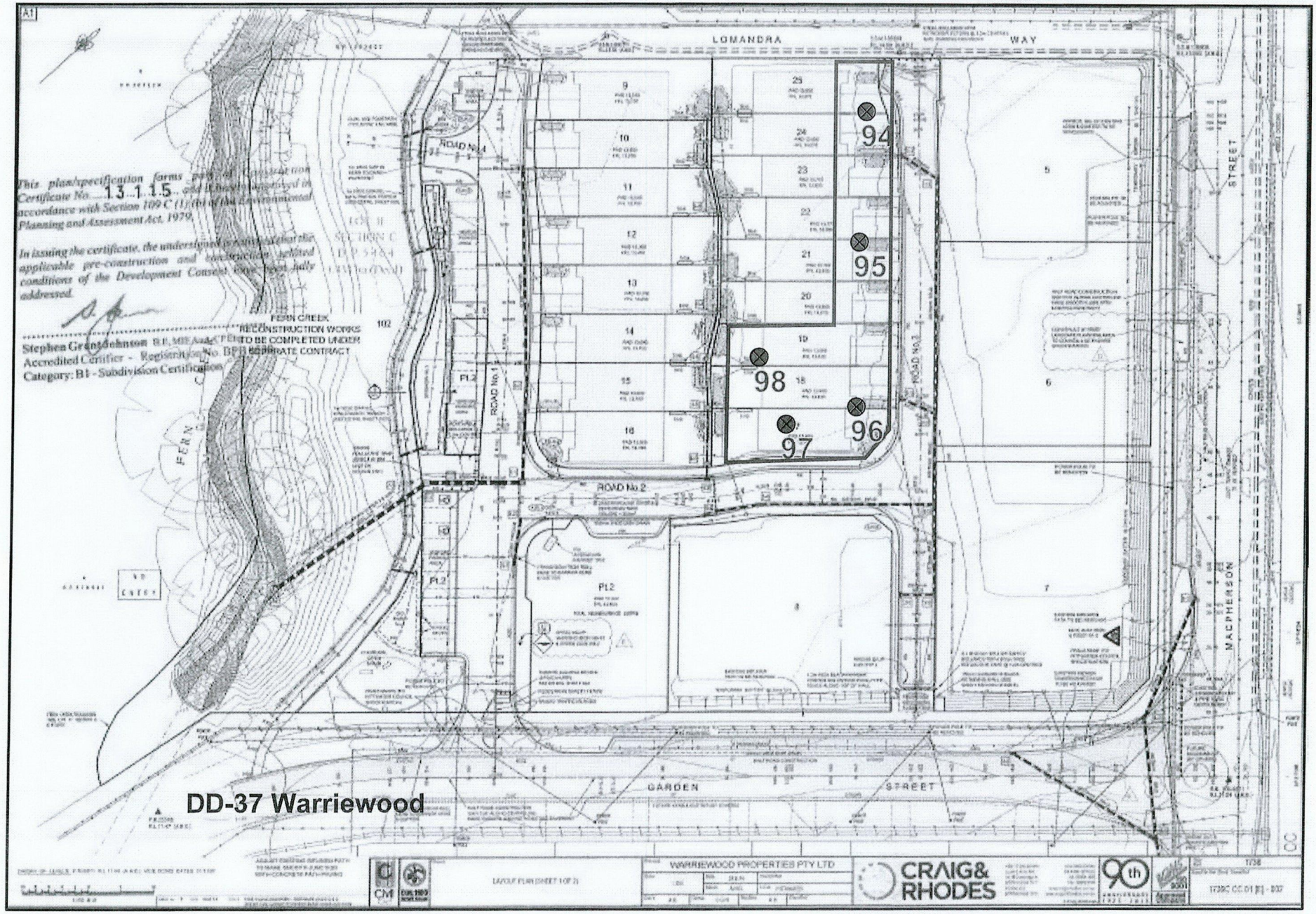
## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22-09-14 | 91 | 140922 | E341513.86 N6271375.62 | Brown Sandy Gravel (Sandstone) | 11.2 | 13.00 | 19mm | 9.0 | Std | 2.16 | 2.17 | 99.5 | O.M.C. | Pass | |
| 22-09-14 | 92 | 140922 | E341519.57 N6271361.77 | Brown Sandy Gravel (Sandstone) | 10.8 | 12.95 | 19mm | 7.2 | Std | 2.14 | 2.16 | 99.0 | O.M.C. | Pass | |
| 22-09-14 | 93 | 140922 | E341507.12 N6271352.35 | Brown Sandy Gravel (Sandstone) | 9.4 | 12.83 | 19mm | 4.6 | Std | 2.12 | 2.15 | 98.5 | O.M.C. | Pass | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Viet 16-12-2013
**Material Conformity:** Yes
**Layer Thickness:** 200mm
**Lot Volume m3:** 150m3
**Accepted as a Lot:** Yes



LOMANDRA WAY
MACPHERSON STREET
GARDEN STREET
ROAD No.1
ROAD No.2
ROAD No.3
ROAD No.4
FERN CREEK
RECONSTRUCTION WORKS TO BE COMPLETED UNDER SEPARATE CONTRACT
This plan/specification forms part of Construction Certificate No. 13115 and is hereby approved in accordance with Section 109 C (1)(b) of the Environmental Planning and Assessment Act, 1979.
In issuing the certificate, the undersigned is satisfied that the applicable pre-construction and construction related conditions of the Development Consent have been fully addressed.
Stephen Grantdohnson B.E., MIE Aust, CPEng
Accredited Certifier - Registration No. BPB
Category: B1 - Subdivision Certification
94
95
96
97
98
DD-37 Warriewood
WARRIEWOOD PROPERTIES PTY LTD
CRAIG& RHODES

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

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54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

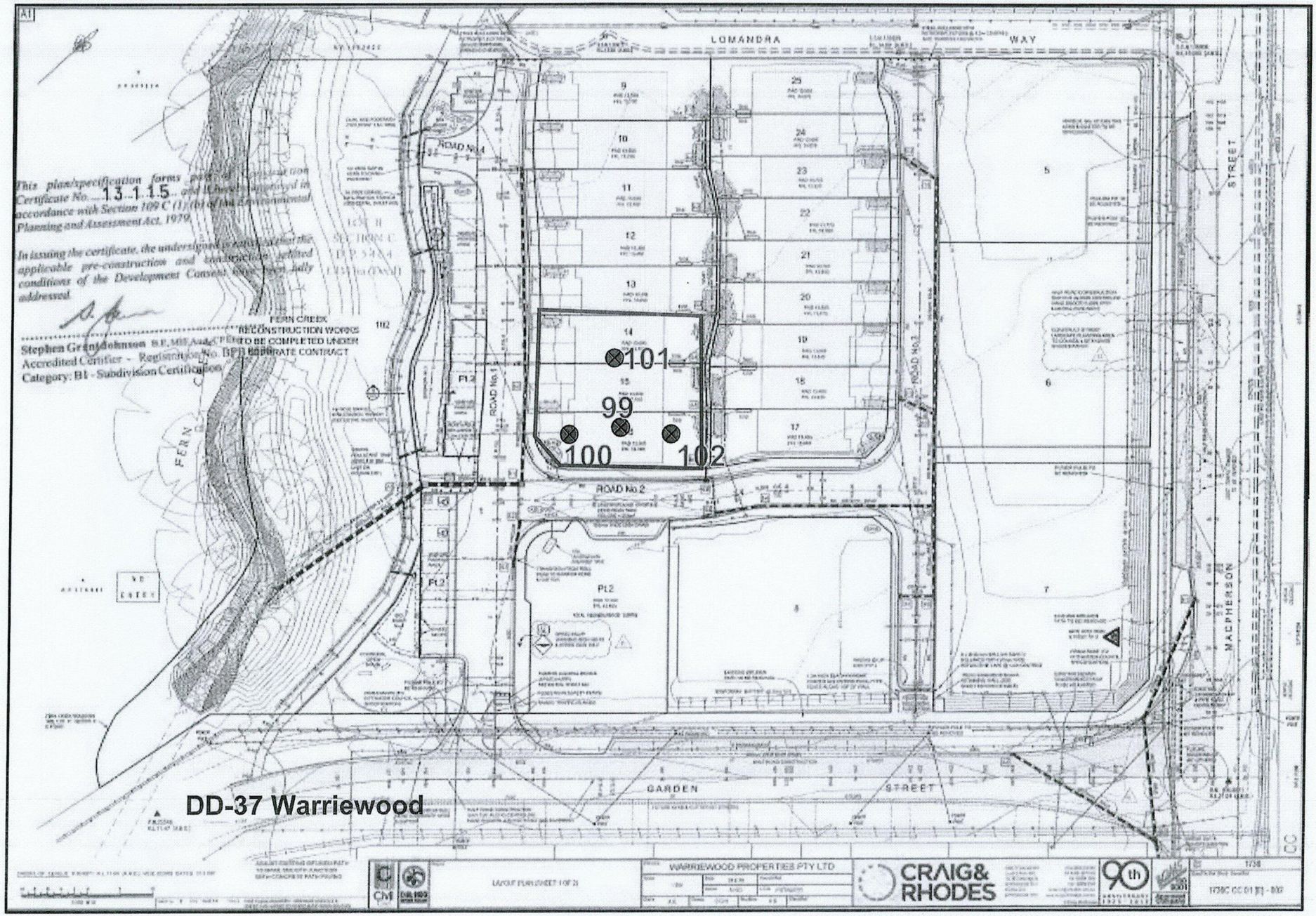
## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22-09-14 | 94 | 140922A | E341466.30 N6271418.71 | Brown Sandy Gravel (Sandstone) | 11.3 | 13.71 | 19mm | 2.3 | Std | 2.11 | 2.14 | 99.0 | 1.0wet | Pass | |
| 22-09-14 | 95 | 140922A | E341478.28 N6271409.56 | Brown Sandy Gravel (Sandstone) | 11.7 | 13.45 | 19mm | 6.3 | Std | 2.18 | 2.19 | 100.0 | 1.0wet | Pass | |
| 22-09-14 | 96 | 140922A | E341494.43 N6271395.80 | Brown Sandy Gravel (Sandstone) | 11.3 | 13.31 | 19mm | 5.3 | Std | 2.19 | 2.17 | 101.0 | 0.5wet | Pass | |
| 22-09-15 | 97 | 140922A | E341495.58 N6271387.58 | Brown Sandy Gravel (Sandstone) | 10.3 | 13.13 | 19mm | 13.9 | Std | 2.15 | 2.16 | 100.0 | 0.5dry | Pass | |
| 22-09-16 | 98 | 140922A | E341490.31 N6271380.90 | Brown Sandy Gravel (Sandstone) | 10.1 | 13.16 | 19mm | 10.1 | Std | 2.16 | 2.14 | 101.0 | 0.5dry | Pass | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Vlet 16-12-2013
**Material Conformity:** Yes
**Layer Thickness:** 200mm
**Lot Volume m3:** 168m3
**Accepted as a Lot:** Yes


LOMANDRA WAY
ROAD No.1
ROAD No.2
ROAD No.3
ROAD No.4
FERN CREEK
MACPHERSON STREET
GARDEN STREET
101
99
100
102
PL2
This plan/specification forms part of the application for Certificate No. 13.1.15 and is approved in accordance with Section 109 C (1) (b) of the Environmental Planning and Assessment Act, 1979.
In issuing the certificate, the undersigned is satisfied that the applicable pre-construction and construction related conditions of the Development Consent have been fully addressed.
Stephen Grenfell Johnson B.E. MIE Aust. CPEng
Accredited Certifier - Registration No. BPB
Category: B1 - Subdivision Certification
FERN CREEK RECONSTRUCTION WORKS TO BE COMPLETED UNDER SEPARATE CONTRACT
DD-37 Warriewood
WARRIEWOOD PROPERTIES PTY LTD
CRAIG& RHODES
90th

DIRT DOCTORS
GEOTECHNICAL TESTING SERVICES

ABN 53 159 700 419
Ph: 0424 639 602
54 Matcham Rd, Buxton NSW 2571
Email: mitch@dirtdoctors.com.au

## SUMMARY OF FIELD DENSITY AND MOISTURE RATIO TEST RESULTS

**Project:** Proposed Residential Subdivision
**Project No.:** DD-37
**Client:** Simmons Civil Contracting Pty Ltd
**Location:** Cnr of Garden and Macpherson Streets, Warriewood

| Date of Test | Test No | Lot No | Test Location | Material Description | Moisture Content % | Layer/RL | Sieve Size mm | Oversize Retained % | Compactive Effort Std/Mod | Field Wet Density t/m3 | Converted Wet Density t/m3 | Density Ratio % 98-102 | Moisture Variation ±2% | Pass/Fail | Retest No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22-09-14 | 99 | 140922B | E341469.97 N6271363.97 | Brown Sandy Gravel (Sandstone) | 10.1 | 12.83 | 19mm | 8.9 | Std | 2.14 | 2.16 | 99.0 | O.M.C. | Pass | |
| 22-09-14 | 100 | 140922B | E341475.34 N6271369.88 | Brown Sandy Gravel (Sandstone) | 10.7 | 12.89 | 19mm | 13.4 | Std | 2.16 | 2.17 | 100.0 | 1.0wet | Pass | |
| 22-09-14 | 101 | 140922B | E341466.82 N6271376.98 | Brown Sandy Gravel (Sandstone) | 9.8 | 13.07 | 19mm | 6.0 | Std | 2.11 | 2.15 | 98.5 | 1.0dry | Pass | |
| 22-09-15 | 102 | 140922B | E341491.50 N6271383.86 | Brown Sandy Gravel (Sandstone) | 10.7 | 13.24 | 19mm | 10.5 | Std | 2.18 | 2.18 | 100.5 | 0.5wet | Pass | |

## LOT ACCEPTANCE

**Specification Reference:** 27045Vlet 16-12-2013
**Material Conformity:** Yes
**Layer Thickness:** 200mm
**Lot Volume m3:** 125m3
**Accepted as a Lot:** Yes

Aargus

Environmental - Remediation - Engineering - Laboratories - Drilling

25th July 2014

Our Ref: ES5944

Charlton Excavations Pty Ltd

PO Box 229

VAUCLUSE NSW 2030

**By Email: eli@charltoncorp.com.au**

Dear Eli,

**Re: Virgin Excavated Natural Material (VENM)**

**5-15 Belair Close, Hornsby NSW**

Aargus Pty Ltd was appointed by Charlton Excavations Pty Ltd to conduct a visual assessment of natural soil being excavated as Virgin Excavated Natural Material (VENM) within the property located at 5-15 Belair Close, Hornsby NSW (the "site").

To assess the waste classification of materials to be disposed off-site, the NSW Environmental Protection Authority (EPA) refers to the "*Waste Classification Guidelines, Part 1: Classifying Waste*" NSW DECC (2009).

Aargus staff inspected the site on 25th July 2014. The inspection was conducted after vegetation was removed and the topsoil was removed. Minimal fill or topsoil material was observed on site during the inspection, though this was located *insitu* at the boundaries of the property and is to remain *insitu* as part of development of the property. Topsoil and fill material does not form a part of this report and are to be disposed of appropriately. Controls were observed to be in place to separate this material from the remaining exposed soils across the site.

This VENM certificate does not apply to the fill or topsoil material located *insitu* at the boundaries of the property. This VENM report refers to the natural underlying material from the site only. Aargus has been informed that approximately 10,000m$^3$ of natural material will be transported off-site.

The Protection of the Environment Operations Act 1997 defines VENM as:
*'natural material (such as clay, gravel, sand, soil or rock fines):*

- that has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities, and

- that does not contain any sulfidic ores or soils or any other waste.'

*No other criteria for VENM have been approved. By definition, VENM cannot be 'made' from processed soils. Excavated material that has been stored or processed in any way cannot be classified as VENM.*

As part of this VENM report, Aargus undertook a walkover of the site and took into consideration the following points where applicable:

- Description and quality of the building structure & materials;
- Current operations;
- Waste Management Practices & trade waste;
- Above ground storage tanks;
- Underground Storage Tanks;
- Odours;
- Site vegetation & sealed surfaces;
- Historical operations (if known);
- Former raw materials & transportation (if known);
- Surface water;
- Groundwater (if known); and
- Site Surrounding and their operations.

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From inspection of the above details, information was gathered with regards to the property.

The site was previously five (5) detached single low density residential dwellings and is to be excavated as part of a proposed medium density residential development. The site is surrounded by Belair Close then low density residential dwellings to the north, low density residential dwellings to the east and medium density residential dwellings to the south and west.

The Geological Map of Sydney (Geological Series Sheet 9030, Scale 1:100,000, Edition 1, 1983) published by the Department of Minerals and Energy indicates the residual soils within the site to be underlain by Middle Triassic age Hawkesbury Sandstone containing *medium to coarse-grained quartz sandstone, very minor shale and laminite lenses.*

The soil profile at the site was consistent with the Geological Survey. Following a visual assessment of the soil profile, the materials to be excavated within the site were observed to be:

- Topsoil: Silty Clay, low plasticity, dark brown, moist material from the surface to 0.2m below ground level (BGL) (not VENM); underlain by
- Silty CLAY, low plasticity, yellow brown with red mottles, moist from 0.2m to 1.0m BGL (VENM); underlain by
- Sandy CLAY, low plasticity with some sub-rounded sandstone cobbles, pale brown, moist from 1.0m BGL to 2.0m BGL (VENM); underlain by
- SANDSTONE, medium to coarse-grained, pale brown from 2.0m to 4.0m BGL (bedrock).

Aargus was informed that approximately 10,000m$^3$ of this silty clay, sandy clay and sandstone material will be transported off-site as a part of the proposed residential development. Given the geological profile, it is expected that the clay material will be underlain by sandstone to the maximum depth of excavations.

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No UST's or AST's were visible. No staining or odours were visible at the time of the inspection. There was no evidence of localised oil or chemical spills on any sealed or unsealed areas and this issue does not warrant any concern.

No visible fibro cement pieces were observed on the surfaces of the site that were inspected. It should be noted that foreign materials may also be present buried within the soil materials that could not be accessed as part of the inspection.

To determine whether there is a potential for acid sulfate soils to be present within a site, reference was made to the NSW Department of Land & Water Conservation (DLWC) *Acid Sulfate Soil Risk Map* (Edition Two, December 1997, Scale 1:25,000). No acid sulfate soil maps were available for this location. Given the observed topography, soil profile, underlying geology and the site location, the potential for acid sulfate soils and potential acid sulfate soils to be naturally present on site is considered to be negligible.

With reference to previous land use, the nature of land use in the immediate area and a site inspection of surface and underlying soils, the inspected natural soil from the excavation area of the site is classified by NSW EPA criteria as ***VENM***.

It should also be noted that the soil at the site could be reused at sites with similar land use providing soil at the site meets guidelines described in NSW EPA (1995) *Sampling Design Guidelines.* To confirm this further assessment in accordance with applicable regulatory guidelines, including sampling and analysis, would be required.

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If any further areas of environmental concern are uncovered during the excavation process, this office should be notified for further assessment. We would be pleased to provide further information on any aspects of this report.

For and on behalf of

**Aargus Pty Ltd**

**Joseph McDermott**
Environmental Scientist

**Reviewed By**

**Mark Kelly**
Environmental Manager

Attachments:
Site Plan
Site Photographs

© Aargus Pty Ltd

Aargus

## LIMITATIONS OF ASSESSMENT

The Aargus assessment is based on the result of limited site investigations and sample testing. Neither Aargus, nor any other reputable consultant, can provide unqualified warranties nor does Aargus assume any liability for site conditions not observed or accessible during the time of the investigations.

Despite all reasonable care and diligence, the materials encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to Aargus investigations and assessment.

This report and associated documentation and the information herein have been prepared solely for the use of the client and interested parties at the time and is valid (for the purposes of transport of material) for a period of one month only from the date of issue. Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to Aargus.

Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that the waste is disposed of appropriately. Aargus accepts no liability for the unlawful disposal of waste materials from any site. Aargus does not accept any responsibility for the material tracking, loading, management, transport or disposal of waste from the site. Before disposal of the material to a licensed landfill is undertaken, the waste producer will need to obtain prior consent from the landfill. The receiving site should check to ensure that the material received matches the description provided in the report.

Opinions are judgements, which are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions

© Aargus Pty Ltd

# SITE PLAN

N

**Legend**

Lot/DP boundaries within site —

Reference: Six Maps NSW (2014)

| ABN 75 050 212 710 | Aargus Pty Limited | Environment – Remediation – Geotechnical Engineering |
|---|---|---|

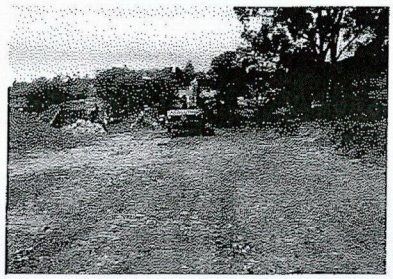
| | | | | |
|---|---|---|---|---|
| Drawn: | JM | **Charlton Excavations Pty Ltd<br>Virgin Excavated Natural Material<br>5-15 Belair Close,<br>Hornsby** | Aargus | Figure<br>1 |
| Approved: | MK | | | |
| Date: | 25/7/2014 | | | |
| Scale: | as shown | | | Job No: ES5944 |

# SITE PHOTOGRAPHS

| | |
|---|---|
| Client: | Charlton Excavations Pty Ltd |
| Project: | VENM |
| Site Location: | 5-15 Belair Close, Hornsby |
| Job No.: | ES5944 |
| Photos Taken By: | JM |

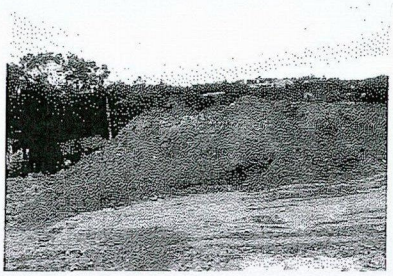
Aargus

**Photograph N° 1**



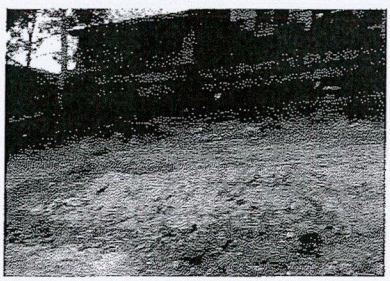
View of: site
Looking: East
Inspected on: 25-JULY-2014

**Photograph N° 2**



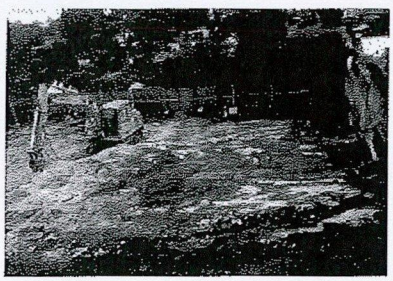
View of: site with stockpiled VENM.
Looking: Northeast
Inspected on 25-JULY-2014:

**Photograph N° 3**



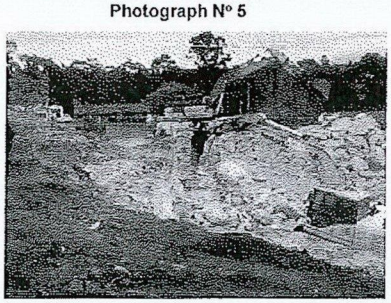
View of: excavation wall.
Looking: south
Inspected on 25-JULY-2014

**Photograph N° 4**



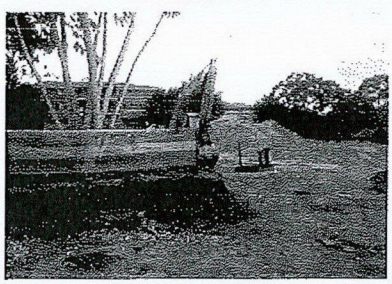
View of: site, excavated area
Looking: east
Inspected on 25-JULY-2014

**Photograph N° 5**



View of: site, stockpiled VENM
Looking: north
Inspected on 25-JULY-2014

**Photograph N° 6**



View of: site & stockpiled VENM (centre, right)
Looking west.
Inspected on 25-JULY-2014

Aargus

Environmental - Remediation - Engineering - Laboratories - Drilling

11th August 2014

Our Ref: ES5959

Allam's Landworks Pty Ltd
15 Bates Street
Strathfield NSW 2135
**By Email: allamslandworks@optusnet.com.au**

Dear Remy,

**Re: Virgin Excavated Natural Material (VENM)**
**54 Bower Street, Manly NSW**

Aargus Pty Ltd was appointed by Allam's Landworks Pty Ltd to conduct a visual assessment of natural soil being excavated as Virgin Excavated Natural Material (VENM) within the property located at 54 Bower Street, Manly NSW (the "site").

To assess the waste classification of materials to be disposed off-site, the NSW Environmental Protection Authority (EPA) refers to the "*Waste Classification Guidelines, Part 1: Classifying Waste*" NSW DECC (2009).

Aargus staff inspected the site on 11th August 2014. The inspection was conducted after demolition works were completed and vegetation and topsoil were both removed. Fill material was observed *in-situ* on site during the inspection. Topsoil and fill material does not form a part of this report and are to be disposed of appropriately. Fill material will need to be excavated and removed off-site prior to the excavation and removal of the underlying natural material.

This VENM certificate does not apply to the fill material located on the property. This VENM report refers to the natural underlying material from the site only. Aargus has been informed that approximately 1,500m$^3$ of natural material will be transported off-site.

The Protection of the Environment Operations Act 1997 defines VENM as:
*'natural material (such as clay, gravel, sand, soil or rock fines):*

- that has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities, and

- that does not contain any sulfidic ores or soils or any other waste.'

*No other criteria for VENM have been approved. By definition, VENM cannot be 'made' from processed soils. Excavated material that has been stored or processed in any way cannot be classified as VENM.*

As part of this VENM report, Aargus undertook a walkover of the site and took into consideration the following points where applicable:

- Description and quality of the building structure & materials;
- Current operations;
- Waste Management Practices & trade waste;
- Above ground storage tanks;
- Underground Storage Tanks;
- Odours;
- Site vegetation & sealed surfaces;
- Historical operations (if known);
- Former raw materials & transportation (if known);
- Surface water;
- Groundwater (if known); and
- Site Surrounding and their operations.

© Aargus Pty Ltd

From inspection of the above details, information was gathered with regards to the property. The site was previously a low density residential dwelling and is to be excavated as part of a proposed low density residential development. The site is surrounded by Cabbage Tree Bay to the north, Bower Street to the south and low density residential dwellings to the east and west.

The Geological Map of Sydney (Geological Series Sheet 9130, Scale 1:100,000, 1983), published by the Department of Mineral Resources indicates the residual soils within the site to be underlain by Middle Triassic Age Hawkesbury Sandstone comprising medium to coarse grained quartz sandstone, very minor shale and laminite lenses.

The soil profile at the site was consistent with the Geological Survey. Following a visual assessment of the soil profile, the materials to be excavated within the site were observed to be:

- Fill: Sand, fine to medium grained, greyish brown, dry material from the surface to 0.5m below ground level (BGL) (not VENM), underlain by;
- SANDSTONE, boulders, pale yellow, dry from 0.5m BGL to 1.5m BGL (VENM).

Aargus has been informed that approximately 1,500m$^3$ of this sandstone material will be transported off-site as a part of the proposed residential development. Given the geological profile, it is expected that the sandstone material will extend to the maximum depth of excavations.

No UST's or AST's were visible. No staining or odours were visible at the time of the inspection. There was no evidence of localised oil or chemical spills on any sealed or unsealed areas and this issue does not warrant any concern. No visible fibro cement pieces were observed on the surfaces of the site that were inspected. It should be noted that foreign materials may also be present buried within the soil materials that could not be accessed as part of the inspection.

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To determine whether there is a potential for acid sulfate soils to be present within a site, reference was made to the NSW Department of Land & Water Conservation (DLWC) *Acid Sulfate Soil Risk Maps* (Edition Two, December 1997, Scale 1:25,000) for Sydney Heads (9130N2). Low probability occurrences of acid sulfate soils at greater than 3 metres depth were mapped 500 metres west of the site location. Given the site topography, geology, soil profile and distance to the aforementioned acid sulfate soils, the risk of encountering naturally occurring acid sulfate soils on site is considered negligible.

With reference to previous land use, the nature of land use in the immediate area and a site inspection of surface and underlying soils, the inspected natural soil from the excavation area of the site is classified by NSW EPA criteria as ***VENM***.

It should also be noted that the soil at the site could be reused at sites with similar land use providing soil at the site meets guidelines described in NSW EPA (1995) *Sampling Design Guidelines*. To confirm this further assessment in accordance with applicable regulatory guidelines, including sampling and analysis, would be required.

If any further areas of environmental concern are uncovered during the excavation process, this office should be notified for further assessment. We would be pleased to provide further information on any aspects of this report.

For and on behalf of

**Aargus Pty Ltd**

**Joseph McDermott**
Environmental Scientist

**Reviewed By**

**Mark Kelly**
Environmental Manager

Attachments
Site Plan
Site Photographs

© Aargus Pty Ltd

Aargus

## LIMITATIONS OF ASSESSMENT

The Aargus assessment is based on the result of limited site investigations and sample testing. Neither Aargus, nor any other reputable consultant, can provide unqualified warranties nor does Aargus assume any liability for site conditions not observed or accessible during the time of the investigations.

Despite all reasonable care and diligence, the materials encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to Aargus investigations and assessment.

This report and associated documentation and the information herein have been prepared solely for the use of the client and interested parties at the time and is valid (for the purposes of transport of material) for a period of one month only from the date of issue. Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to Aargus.

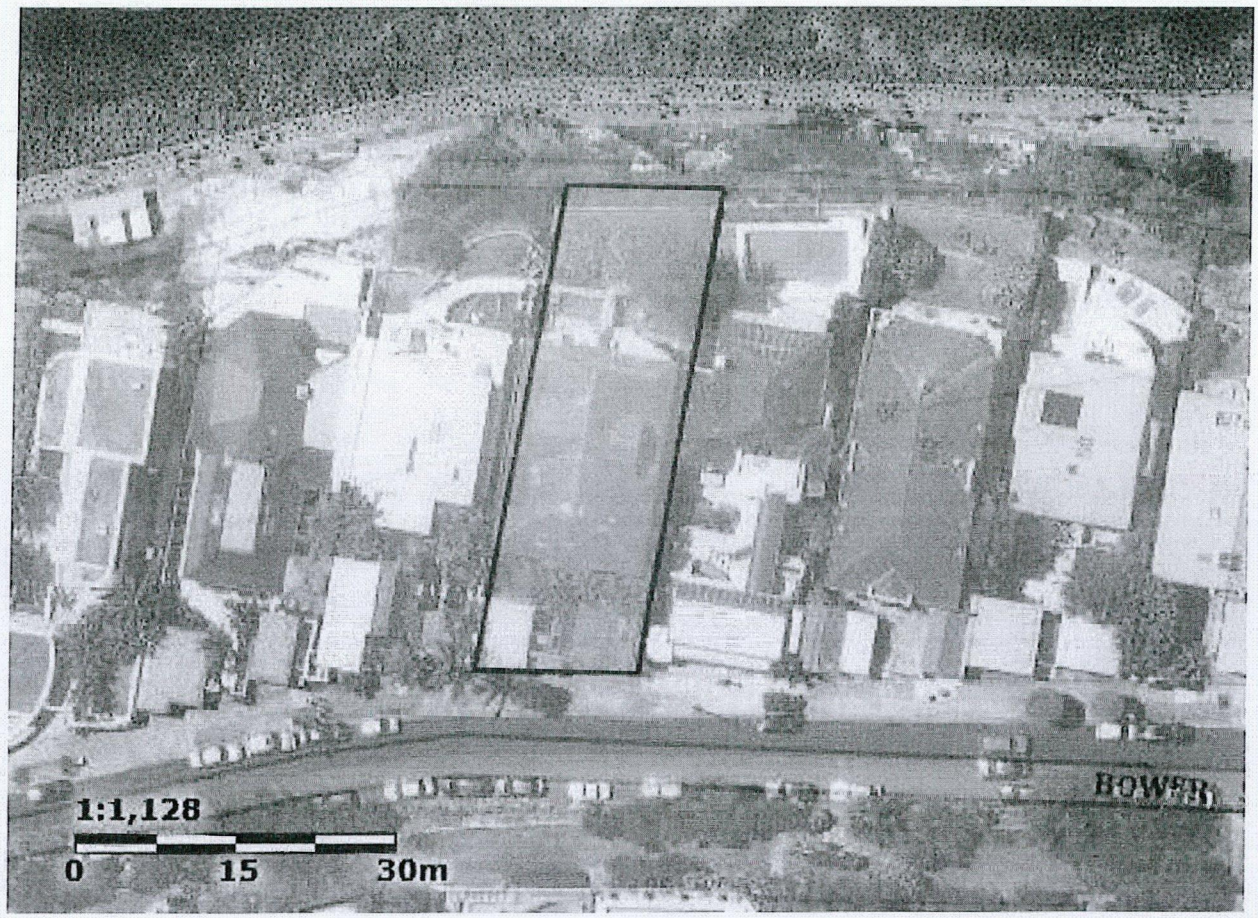
Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that the waste is disposed of appropriately. Aargus accepts no liability for the unlawful disposal of waste materials from any site. Aargus does not accept any responsibility for the material tracking, loading, management, transport or disposal of waste from the site. Before disposal of the material to a licensed landfill is undertaken, the waste producer will need to obtain prior consent from the landfill. The receiving site should check to ensure that the material received matches the description provided in the report.

Opinions are judgements, which are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions

© Aargus Pty Ltd

# SITE PLAN

N




**Legend**

Site boundary ——

Reference: Six Maps NSW (2014)

| ABN 75 050 212 710 | Aargus Pty Limited | Environment – Remediation – Geotechnical Engineering |
|---|---|---|

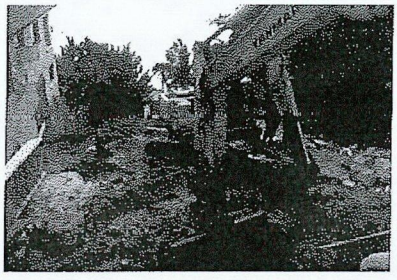
| | | | | |
|---|---|---|---|---|
| Drawn: | JM | **Allam's Landworks Pty Ltd<br>Virgin Excavated Natural Material<br>54 Bower Street,<br>Manly NSW** | Aargus | Figure<br>1 |
| Approved: | MK | | | |
| Date: | 11/8/2014 | | | |
| Scale: | as shown | | | Job No: ES5959 |

# SITE PHOTOGRAPHS

| | |
|---|---|
| Client: | Allam's Landworks Pty Ltd |
| Project: | VENM |
| Site Location: | 54 Bower Street, Manly |
| Job No.: | ES5959 |
| Photos Taken By: | JM |

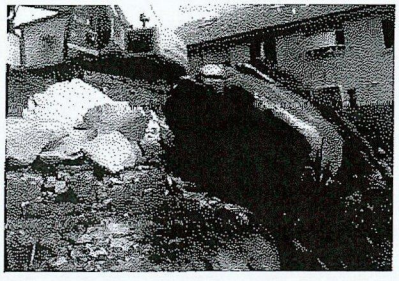
Aargus

**Photograph N° 1**



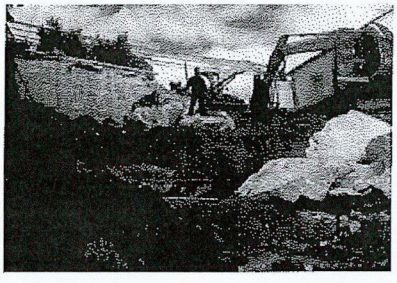
View of: site
Looking: North.
Inspected on: 11-AUGUST-2014

**Photograph N° 2**



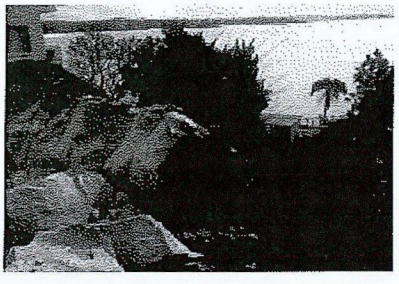
View of: site.
Looking: West.
Inspected on: 11-AUGUST-2014

**Photograph N° 3**



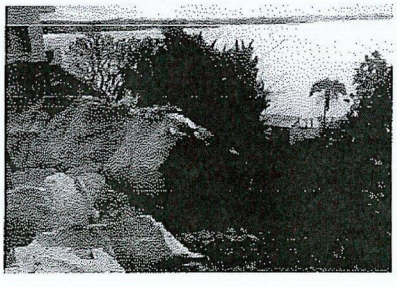
View of: site.
Looking: South-west.
Inspected on: 11-AUGUST-2014

**Photograph N° 4**



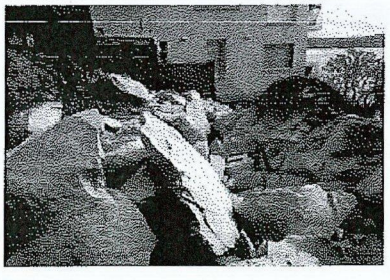
View of: site.
Looking: North.
Inspected on: 11-AUGUST-2014

**Photograph N° 5**



View of: Site.
Looking: North-west.
Inspected on: 11-AUGUST-2014

**Photograph N° 6**



View of: site.
Looking: West.
Source: 11-AUGUST-2014

| WARRIEWOOD BANKSIA: OC REQUIREMENTS MATRIX | | | | | | | | | | | 8/12/2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SUB ITEM | REQUIREMENTS | ACTION BY | UNITS | | | | | | | |
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | OC Application Form | On completion of the works submit an application form signed by the owner/s | Auspacific | | | | | | | | |
| 2 | Remediation of Land | In accordance with DA Condition No: D.18 - confirmation in writing from a suitable qualified independent consultant that sampling, testing and remediation of the site as identified in the contamination assessment has been carried out as per EPA guidelines of SEPP 55 - Remediation of Land prior to the issue of final occupation certificate. | Auspacific | | | | | | | | |
| 3 | BASIX Statement | Certificate by the builder that all BASIX commitments as listed on the approved BASIX Certificate No: 361834M_02 (or any subsequent approved modified certificate) have been installed. Such certification shall note the following specific items:<br>1. The type, R Value and location(s) of insulation materials and compliance with Australian Standard AS/NZS 4859 Part 1 - 2002 "Thermal Insulation of Dwellings - Bulk Insulation - Installation Requirements"<br>2. The rainwater tank/s and water supply pipes, fixtures and fittings have been installed by a licensed plumber in accordance with AS3500 and the approved plans and specifications<br>3. The glazing requirements for windows as listed in the BASIX Certificate have been complied with | SBC | Y | Y | Y | Y | Y | Y | Y | Y |
| 4 | Landscape Practical Completion Report | Certification provided by a qualified Landscape Architect indication compliance with the approved landscape plan and DA condition E:16. | Auspacific | | | | | | | | |
| 5 | Installation Certificates | | | | | | | | | | |
| 5.1 | Windows | Certified by the Window Manufacturer/Supplier as complying with AS1288 - 2006: Glass in buildings - Selection and installation, and AS2047-1999: Window in buildings - Selection and installation | Wideline | Y | Y | Y | Y | Y | Y | Y | Y |
| 5.2 | Smoke alarms | Certified by a licensed electrician, after installation, as complying with AS3786-1993, smoke alarms | Crown | Y | Y | Y | Y | Y | Y | Y | Y |
| 5.3 | Balustrades | Certification regarding the installation of balustrades in accordance with BCA | Lindton | Y | Y | Y | Y | Y | Y | Y | Y |
| 5.4 | Dividing Walls ( Sound Insulation) | Statement from Builder confirming that the dividing wall between the two units complies with Part 3.8.6.2 of the BCA. Information to be provided to include confirmation that the wall construction achieves the required Weighted Sound Reduction Index (Rw) and Impact Sound Resistance and confirmation the wall has been installed in accordance with Part 3.8.6.3 & Part 3.8.6.4 of the BCA | SBC | Y | Y | Y | Y | Y | Y | Y | Y |
| 5.5 | Termite Control | Certified by Installer detailing the system installed, location and compliance with AS3660-2000 "Termite Management" | Enviropest | Y | Y | Y | Y | Y | Y | Y | Y |
| 5.6 | Wet area flashing | Certified by the Installer, after its application, as complying with AS3740-2010: Waterproofing of Wet Areas in Residential Buildings | Macfin | Y | Y | Y | Y | Y | Y | Y | Y |

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| JOB DETAILS | |
|---|---|
| Site Address | 23B Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Frame Inspection Units 5 to 12 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 20 May 2015 \| Time: 2:50 |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

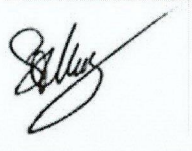
**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- Please install shear blocking (as advised on site) to first floor non-loading braced walls in all units.

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| JOB DETAILS | |
|---|---|
| Site Address | 23B Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | First Footing - Class 2-9 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 20 May 2015 \| Time: 2:50pm |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- Please complete installation of screw piers and on completion submit certification from screw piers installer.
- Please provide a copy of the structural engineer's report for footing and slab reinforcement for our records.

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.

**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

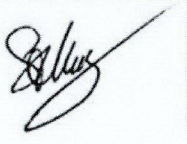
| JOB DETAILS | |
|---|---|
| Site Address | 23B Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11<br>Modified NOO/11/S96/1 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Frame Inspection Units 1 to 4 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 07 Jul 2015 \| Time: 9:35am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

**INSPECTION RESULT**

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

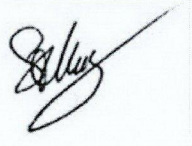
| JOB DETAILS | |
|---|---|
| Site Address | 23B Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Frame Inspection Unit 13 to 17 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 07 Jul 2015 \| Time: 9:35am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

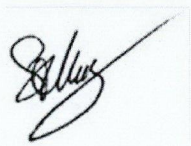
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified<br>NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Frame Inspection - Commercial Building |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 16 Sep 2015 \| Time: 9:00am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

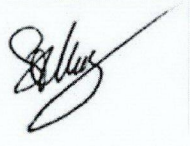
| JOB DETAILS | |
|---|---|
| Site Address | 11 Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified<br>NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Slab Inspection Units 18 to 21 |
| Inspection Contact Person | Tom at Strongbuild - 0497 556 830 |
| Inspection Completed | Date: 05 May 2016 \| Time: 3:30pm |
| Notes | Advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| JOB DETAILS | |
|---|---|
| Site Address | 11 Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Frame Inspection Units 18 to 25 |
| Inspection Contact Person | Tom at Strongbuild - 0497 556 830 |
| Inspection Completed | Date: 01 Aug 2016 \| Time: 8:00am |
| Notes | Advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

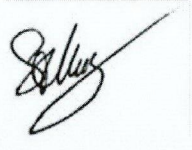
**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- ☐ Please install shear blocking to all non load-bearing braced walls as discussed on site.
- ☐ Please install missing L brackets and triple grips as discussed on site.

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| **APPLICANT DETAILS** *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| **JOB DETAILS** | |
|---|---|
| Site Address | Warriewood Residential Village, 23B Macpherson Street<br>WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified<br>NOO/11/S96/1 19 March 2012 |

| **INSPECTION DETAILS** | |
|---|---|
| Inspection Type | Slab Inspection Units 9 - 12 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 06 Mar 2015 \| Time: 8.30am |
| Notes | |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- Please forward a copy of the Engineers inspection report or certificate for our records
- Please forward copy of the set out or peg out survey report for our records

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.

**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| **APPLICANT DETAILS** *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| **JOB DETAILS** | |
|---|---|
| Site Address | Warriewood Residential Village, 23B Macpherson Street<br>WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified<br>NOO/11/S96/1 19 March 2012 |

| **INSPECTION DETAILS** | |
|---|---|
| Inspection Type | Slab Inspection Units 1 - 8 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 05 Mar 2015 \| Time: 8.30am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

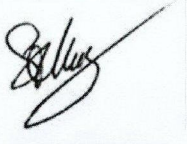
**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- Please forward a copy of the Engineers inspection report or certificate for our records
- Please forward copy of the set out or peg out survey report for our records

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| JOB DETAILS | |
|---|---|
| Site Address | 23B Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914<br>Development Application No.:NOO85/11 Modified NOO/11/S96/1 19 March 2012 |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Slab Inspection Units 13, 14, 15, 16 & 17 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 19 Mar 2015 \| Time: 8.30am |
| Notes | Mark advised onsite |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

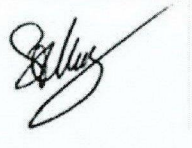
**INSPECTION RESULT**

**CONDITIONAL PASS** - At the date and time of this inspection, the work was satisfactory, subject to completion of the following -

- Please forward a copy of the structural engineers report for our records

Proceed to the next stage of construction as a re-inspection is not warranted PROVIDED the above works are completed in a professional and tradesperson-like manner.

Your cooperation in resolving this matter is greatly appreciated.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| **APPLICANT DETAILS** *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

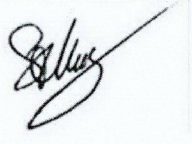
| **JOB DETAILS** | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| **INSPECTION DETAILS** | |
|---|---|
| Inspection Type | Wet Area Inspection Units 8 to 9 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 21 Jul 2015 \| Time: 7:35am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

**INSPECTION RESULT**

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

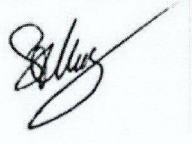
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | First Floor Slab Inspection - Class 2-9 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 21 Jul 2015 \| Time: 7:35am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

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| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

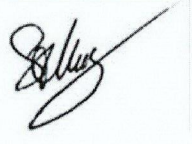
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 5 to 7 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 27 Jul 2015 \| Time: 8:00am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

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AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

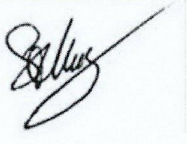
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 11 and 12 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 27 Jul 2015 \| Time: 8:00am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



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**Accredited Certifier | Accreditation No: BPB0282**

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AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

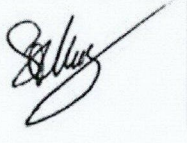
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 3 and 4 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 31 Jul 2015 \| Time: 10:30am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

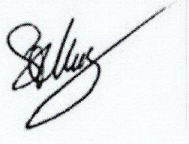
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Unit 10 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 31 Jul 2015 \| Time: 10:30am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

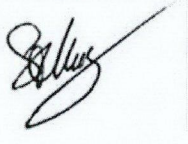
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 13 and 14 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 31 Jul 2015 \| Time: 10:30am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

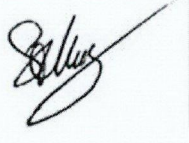
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 1 and 2 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 10 Aug 2015 \| Time: 10:00am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

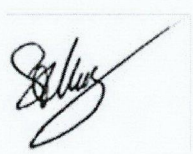
| JOB DETAILS | |
|---|---|
| Site Address | 11 DP Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 15 to 17 |
| Inspection Contact Person | Mark - 0405 137 125 |
| Inspection Completed | Date: 10 Aug 2015 \| Time: 10:00am |
| Notes | Mark advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

| JOB DETAILS | |
|---|---|
| Site Address | 11 Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Slab Inspection Units 22 to 25 |
| Inspection Contact Person | Tom at Strongbuild - 0497 556 830 |
| Inspection Completed | Date: 12 May 2016 \| Time: 3:30pm |
| Notes | Advised on site |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

**INSPECTION RESULT**

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.

**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**

# BUILDING INSPECTION REPORT

AcroCert

| APPLICANT DETAILS *All correspondence to be forwarded to the applicant* | |
|---|---|
| Name | Warriewood Properties Pty Ltd<br>c/- Paul Allinson |
| Address | Level 1, 4 Ponderosa Parade<br>WARRIEWOOD NSW 2102 |
| Email | pallinson@auspacific.com |

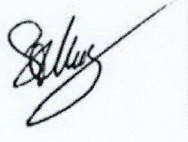
| JOB DETAILS | |
|---|---|
| Site Address | Macpherson Street WARRIEWOOD |
| Title Particulars | Lot 11 DP5464 |
| Approvals | Construction Certificate No.: 2013-1914-A<br>Development Application No.:N0085/11/S96/3A |

| INSPECTION DETAILS | |
|---|---|
| Inspection Type | Wet Area Inspection Units 18 to 25 |
| Inspection Contact Person | Ryan - 0409 037 233 |
| Inspection Completed | Date: 07 Nov 2016 \| Time: AM |
| Notes | |
| **Next Inspection Required** | **Please refer to your 'Notice of Inspections' for specific details** |

## INSPECTION RESULT

**PASS** - At the date and time of this inspection, the work was satisfactory.

Please proceed to the next stage of construction as a re-inspection is not warranted.



**Stephen Murray**
**Accredited Certifier | Accreditation No: BPB0282**