PRIVATE CERTIFIERS AUSTRALIA
Certainty through precision

Address: Suite 6/ 226 Condamine Street PO Box 907
Balgowlah
Manly Vale NSW 2093
Tel: 02 9907 6300
Fax: 02 9907 6344
Email: grant@pcaservices.com.au
ABN:

21 February 2014

Our ref.: 140018

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

Dear Sir/Madam,

Re: 26a Hudson Parade Clareville
Construction Certificate No. 140018

Development application No.: 264/13

Private Certifiers Australia has issued a Construction Certificate under Part 4A of the Environmental Planning and Assessment Act 1979 for the above premises.

Please find enclosed the following documentation:

- Construction Certificate No. 140018
- Copy of application for Construction Certificate.
- Documentation used to determine the application for the Construction Certificate as detailed in Schedule 1 of the Certificate.
- Cheque for Council's registration fee.

Our client has been advised of the necessity to submit to Council the Notice of Commencement of building works 48 hours prior to the commencement of works.

Should you need to discuss any issues, please do not hesitate to contact the Accredited Building Surveyor Grant Harrington.

Yours faithfully,

Grant Harrington
Accredited Building Surveyor
Private Certifiers Australia

R - 356637
$36 PRVC
25/02/13

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ABN:

CONSTRUCTION CERTIFICATE 140018

Issued under Part 4A of the Environmental Planning and Assessment Act 1979 Sections 109C and 81A(5)

APPLICANT DETAILS

Applicant:	Thomas Luedecke / Touchwood Design and Build
Address:	PO Box 712 Avalon NSW 2107
Contact Details:	**Phone**: 0404 474 075 **Fax:**

OWNER DETAILS

Name of person having benefit of the development consent:	Anick Graveline C/- Thomas Luedecke
Address:	PO Box 712 Avalon NSW 2107
Contact Details:	**Phone**: 0404 474 075

RELEVANT CONSENTS

Consent Authority/Local Government Area:	Pittwater Council
Development Consent No:	264/13, , **Date issued:** 10/01/2014

PROPOSAL

Address of Development:	26a Hudson Parade Clareville NSW 2107
Lot/DP/Zoning:	Lot 1 1186229 Zone:
Building Classification:	Class 1a
Scope of building works covered by this Notice:	Demolition, excavation , boatshed and retaining walls.
Value of Construction Certificate (Incl GST):	$150,000.00
Plans and Specifications approved:	Schedule 1
Fire Safety Schedule:	N/A
Exclusions:	
Critical stage inspections;	See attached Notice

CERTIFYING AUTHORITY

Certifying Authority:	Grant Harrington
Accreditation Body:	Building Professionals Board
	Registration No. BPB0170

I certify that work completed in accordance with the documentation accompanying the application for this certificate (with such modifications, if any, verified by me as may be shown on that documentation) will comply with the requirements of the Environmental Planning & Assessment Regulation 2000 as referred to in s.81A(5) of the Environmental Planning & Assessment Act 1979.

The documents listed in Schedule 1 accompanied the application for this certificate.

Dated this: 21/02/2014

Grant Harrington
Accredited Building Surveyor

NB: Prior to the commencement of work S81A (2) (b) and (c) of the Environment Planning and Assessment Act 1979 must be satisfied.

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ABN:

SCHEDULE 1: APPROVED PLANS AND SPECIFICATIONS

1. Endorsed Architectural plans

PREPARED BY	DOCUMENT	DRAWING NO	REV	DATE
Richard Cole Architect	Boatshed plans & sections	A20	I	10/09/2013
Richard Cole Architect	Boatshed elevations	A21	I	10/09/2013
Richard Cole Architect	Sediment control plan	A22	I	10/09/2013

2. Endorsed Engineering plans

PREPARED BY	DOCUMENT	DRAWING NO	REV	DATE
Barrenjoey Consulting Engineers	Construction notes and drawings schedule	S1.00	01	13/02/2014
Barrenjoey Consulting Engineers	Civil works plan and details	S2.00	01	13/02/2014
Barrenjoey Consulting Engineers	Boatshed plans and details	S3.00	01	13/02/2014
Barrenjoey Consulting Engineers	Lower ground floor slab plan and details	S4.00	01	13/02/2014
Barrenjoey Consulting Engineers	Ground floor and garage slab plans	S5.00	01	13/02/2014
Barrenjoey Consulting Engineers	Ground floor details	S5.01	01	13/02/2014
Barrenjoey Consulting Engineers	Stormwater management plan	SW1		13/02/2014

3. Endorsed Landscape plans

PREPARED BY	DOCUMENT	DRAWING NO	REV	DATE
Sally Kelly Landscapes	Landscape plan			10/05/2013

4. Endorsed Other documents

PREPARED BY	DOCUMENT	DRAWING NO	REV	DATE
Thomas Luedecke	Construction Certificate application form			18/02/2014
Thomas Luedecke	Dilapidation report	026/14		17/02/2014
PCA	143B pre-approval inspection			3/02/2014
Pittwater Council	Levy			13/02/2014
NSW Government	HOW			14/02/2014
Barrenjoey Consulting Engineers	Stormwater compliance letter			30/01/2014
Richard Cole	Finishes schedule			3/04/2013
Keiran Wright	Geotechnical form 2			14/02/2014
Sydney Water	Stamped plan			14/01/2014
Tom Luedecke	Site management plan			17/02/2014

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Email: grant@pcaservices.com.au
ABN:

NOTICE TO APPLICANT OF MANDATORY CRITICAL STAGE INSPECTIONS

Made under Part 4 of the Environmental Planning and Assessment Act 1979 Sections 81A(2)(b1)(ii)

OWNER DETAILS

Name of person having benefit of the development consent:	Anick Graveline C/- Thomas Luedecke
Address:	PO Box 712 Avalon NSW 2107
Contact Details:	**Phone**: 0404 474 075

RELEVANT CONSENTS

Consent Authority/Local Government Area:	Pittwater Council
Development Consent No:	264/13, , **Date issued:** 10/01/2014
Construction Certificate Number: 140018	**Date issued:** 24/02/2014

PROPOSAL

Address of Development:	26a Hudson Parade Clareville NSW 2107
Scope of building works covered by this Notice:	Demolition, excavation , boatshed and retaining walls.

CERTIFICATION DETAILS

Principal Certifying Authority:	Grant Harrington
Accreditation Body:	Building Professionals Board
	Registration No. BPB0170

Please telephone **9907-6300** to book a critical stage inspection. A minimum period of 48 hours is to be provided.

*I, **Grant Harrington, Private Certifiers Australia** located at Suite 6/ 226 Condamine Street PO Box 907 Balgowlah Manly Vale NSW 2093 acting as the principal certifying authority hereby give notice in accordance with Section 81A(2)(b1)(ii) of the Environmental Planning and Assessment Act 1979 to the person having the benefit of the development consent that the mandatory critical stage inspections identified in Schedule 1 & Schedule 2 are to be carried out in respect of the building work.*

The applicant, being the person having benefit of the development consent is required under Section 81A(2)(b2)(ii) of the Environmental Planning and Assessment Act 1979 to notify the principal contractor (if not an owner-builder) of the applicable mandatory critical stage inspections specified under this notice.

To allow a principal certifying authority or another certifying authority time to carry out mandatory critical stage inspections, the principal contractor for the building site, or the owner builder, must notify the principal certifying authority at least 48 hours before building work is commenced at the site if a mandatory critical stage inspection is required before the commencement of the work in accordance with Clause 163 of the Environmental Planning & Assessment Regulation 2000.

Failure to request a mandatory critical stage inspections will prohibit the principal certifying authority under with Section 109E(3)(d) of the Environmental Planning and Assessment Act 1979 to issue an occupation certificate.

Dated: 21/02/2014

Grant Harrington
Principal Certifying Authority

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Balgowlah
Manly Vale NSW 2093
Tel: 02 9907 6300
Fax: 02 9907 6344
Email: grant@pcaservices.com.au
ABN:

SCHEDULE 1:
MANDATORY CRITICAL STAGE INSPECTIONS

NO	CRITICAL STAGE INSPECTION	INSPECTOR
1.	After Excavation for, and prior to the placement of any footings	Certifying Authority
2.	Prior to covering of the framework for any floor, wall, roof or other building element	Certifying Authority
3.	Prior to covering any stormwater drainage connections	Certifying Authority
4.	After the building work has been completed & prior to any occupation certificate being issued in relation to the building	Principal Certifying Authority

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Balgowlah
Manly Vale NSW 2093
Tel: 02 9907 6300
Fax: 02 9907 6344
Email: grant@pcaservices.com.au
ABN:

NOTICE OF APPOINTMENT OF PRINCIPAL CERTIFYING AUTHORITY

Made under Part 4 of the Environmental Planning and Assessment Act 1979 Sections 81A(2)(b1)(i) & 86(1)(a1)(i)

OWNER DETAILS

Name of person having benefit of the development consent:	Anick Graveline C/- Thomas Luedecke
Address:	PO Box 712 Avalon NSW 2107
Contact Details:	**Phone**: 0404 474 075

RELEVANT CONSENTS

Consent Authority/Local Government Area:	Pittwater Council
Development Consent No:	264/13, , **Date issued:** 10/01/2014
Construction Certificate Number: 140018	**Date issued:** 24/02/2014

PROPOSAL

Address of Development:	26a Hudson Parade Clareville NSW 2107
Scope of building works covered by this Notice:	Demolition, excavation , boatshed and retaining walls.

PRINCIPAL CERTIFYING AUTHORITY

Certifying Authority:	Grant Harrington
Accreditation Body:	Building Professionals Board
	Registration No. BPB0170

The owner has appointed Grant Harrington as the Principal Certifying Authority as stated in the Construction Certificate Application lodged with Private Certifiers Australia for the building works identified in this Notice.

I, Grant Harrington, Accredited Building Surveyor of Private Certifiers Australia located at Suite 6/ 226 Condamine Street PO Box 907 Balgowlah Manly Vale NSW 2093 accept the appointment as the Principal Certifying Authority for the building works identified and covered under the relevant Construction Certificate as stated in this Notice.

Dated: 21/02/2014

Grant Harrington
Principal Certifying Authority

PRIVATE CERTIFIERS AUSTRALIA
Certainty through precision

Address: Suite 6/ 226 Condamine Street PO Box 907
Balgowlah
Manly Vale NSW 2093
Tel: 02 9907 6300
Fax: 02 9907 6344
Email: grant@pcaservices.com.au
ABN:

21 February 2014

Our ref.: 140018

Thomas Luedecke / Touchwood Design and Build
PO Box 712
Avalon NSW 2107

Dear Sir/Madam,

Re: 26a Hudson Parade Clareville
Construction Certificate No. 140018

Enclosed are two (2) copies of the approved **Construction Certificate** for the subject development and two (2) copies of the stamped plans. One copy of each has been forwarded directly to Pittwater Council for their records.

The Notice of Appointment of Principal Certifying Authority and Commencement of Building Work form is required to be submitted to the Consent Authority (Council) 48 hours prior to commencement of building work. Private Certifiers Australia will *attach this information to your project file, you must also forward a copy of "Notice of Commencement" to Council and if the project is " residential " attach the " home owners warranty or Owner builder certificate ". The lodgement of the notice of commencement form is the responsibility of the owner or applicant to fulfil.*

The PCA role to be undertaken by Private Certifiers Australia will require inspections and certification. Please have the Owner/Builder liaise with our Accredited Building Surveyor Grant Harrington prior to commencement of the work.

Should you need to discuss any issues, please do not hesitate to contact the undersigned on the above numbers.

Yours faithfully,

Grant Harrington
Accredited Building Surveyor
Private Certifiers Australia

RECEIVED 18/02/2014

PRIVATE CERTIFIERS AUSTRALIA
Certainty through precision

Building Regulations Consultants • Principle Certifying Authority
Construction Certification • Fire Upgrade Surveys • Planning

CONSTRUCTION & OCCUPATION CERTIFICATE APPLICATION

Made under the *Environmental Planning and Assessment Act 1979*
Sections 81A(2), 109C(1)(b) Class 1-10

IDENTIFICATION OF BUILDING

Lot, DP/MPS etc Lot 1 DP 186229

Address 26a Hudson Pde
Avalon NSW

Suburb/Town _____ Post Code 2107

DESCRIPTION OF DEVELOPMENT

Detailed Description: Demo, excavation, boat shed and retaining walls

TYPE OF APPLICATION

Tick appropriate boxes
I apply for the following part 4a certificate

- ☑ **Construction Certificate**
- ☐ **Interim Certificate**
- ☐ **Final Certificate**
- ☐ **Change of Building Use of an Existing Building**
- ☐ **Occupation/Use of a New Building**

APPLICANT

Name Thomas Ludecke.

Company Touchwood DB

Address PO Box 712 Avalon NSW 2107

Phone B/H _____ Fax No _____

Mobile 0404 474 075

Email tom@razorboard.com

When are the works expected to start: Feb 10

I/we the applicant, I/we hereby;
1. Submit this Construction & Occupation Certificate Application under the Environmental Planning & Assessment Act 1979, with Private Certifiers Australia and appoint Grant Harrington as the Principal Certifying Authority for the building work identified in this application.
2. Appoint Grant Harrington of Private Certifiers Australia as the Principal Certifying Authority for the building work identified in this application.
3. And allow Grant Harrington to submit the notice of commencement to council if required on my behalf.

Signature of applicant: _____ **Sign** _____ **Date** 20.1.14

PRIVATE CERTIFIERS AUSTRALIA
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Building Regulations Consultants • Principle Certifying Authority
Construction Certification • Fire Upgrade Surveys • Planning

POSTAL ADDRESS
All documentation should be posted to:

Name Thomas Luedecke
Company Toukwood QB
Address PO Box 712
Avalon NSW
Suburb _____ Post Code 2107

CONSENT OF ALL OWNER(S)

(As the owner or the owners representative am duly authorised to appoint the PCA under 109E of the EPA Act for a Construction & an Occupation Certificate)

Name Anick Graveline
Company _____
Address PO Box 712 Avalon
NSW
Suburb/Town _____ Post Code 2107
Phone B/H _____ Fax No _____
Mobile _____ Email _____

I/We as the owner of the above building/property,

1. *Consent to the Appointment of Grant Harrington as the PCA (Principal Certifying Authority) and approve of the PCA or their representative to lodge the Notice of Commencement on our behalf with council to authorize the commencement of works on site. I am duly authorized under 109E of the EPA Act to appoint the PCA for the project;*
2. *Submit this Construction and Occupation Certificate Application under the Environmental Planning & Assessment Act 1979, for determination by the Principal Certifying Authority.*

Signature of Owner **Sign** _____ **Date** 20.1.14

VALUE OF WORK
Estimated Cost of work: $ 150,000
GST: $ INC.

DEVELOPMENT CONSENT
Development Consent No No. NO 264/13
Date of Determination Date 10.1.14

BUILDING CODE OF AUSTRALIA
BUILDING CLASSIFICATION

Nominated on the Development Consent Class 1a

Please provide the Principal Contractor for the works

OB permits are relevant only to owners undertaking the works under the Owner Builder permit scheme issued by the office of fair trading. Also fill in contact details

If you are using a licensed builder for residential works please provide the builders home owner warranty

Owner-builder Permit No _____

Name of Builder Toodwood DB

Address PO BOX 712 Avalon

Telephone 0404 474075 Fax _____

Contractor License No. 264462C

REQUIRED ATTACHMENTS

- Note 1 details the information that must be submitted with an application for a construction certificate for proposed building works
- Note 2 details the additional information that may be submitted with an application for a construction certificate for proposed residential building work.

NOTES
For Completing Construction Certificate Application

Note 1

The following information must accompany applications for a construction certificate for building and subdivision work.

Building Work

In the case of an application for a construction certificate for **building work**:

a) Copies of compliance certificates relied upon

b) Four (4) copies of detailed plans and specifications

The plan for the building must be drawn to a suitable scale and consist of a general plan and a block plan. The general plan of the building is to:

- show a plan of each floor section
- show a plan of each elevation of the building
- show the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground
- indicate the height, design, construction and provision for fire safety and fire resistance (if any).

Where the proposed building work involves any alteration or addition to, or rebuilding of, an existing building the general plan is to be coloured or otherwise marked to the satisfaction of the certifying authority to adequately distinguish the proposed alteration, addition or rebuilding.

Where the proposed building work involves a modification to previously approved plans and specification the general plans must be coloured or otherwise marked to the satisfaction of the certifying authority to adequately distinguish the modification.

The specification is:

- to describe the construction and materials of which the building is to be built and the method of drainage, sewerage and water supply
- state whether the materials proposed to be used are new or second hand and give particulars of any second-hand and give particulars of any second-hand materials to be used.

c) Where the application involves an alternative solution to meet the performance requirements of the BCA, the application must also be accompanied by:

- details of the performance requirements that the alternative solution is intended to meet, and
- details of the assessment methods used to establish compliance with those performance requirements.

d) Evidence of any accredited component, process or design sought to be relied upon.

e) Except in the case of an application for, or in respect of, a class 1a or class 10 building:
- a list of any fire safety measures that are proposed to be implemented in the building or on the land on which the building is situated; and
- if the application relates to a proposal to carry out any alteration or rebuilding of, or addition to, an existing building, a separate list of such of those measures as are currently implemented in the building or on the land on which the building is situated.

The list must describe the extent, capacity and basis of design of each of the measures concerned.

Note 2

Home Building Act Requirements

In the case of an application for a construction certificate for residential building work (within the meaning of the *Home Building Act 1989*) attach the following:

a) In the case of work by a licensee under that Act:
(i) a statement detailing the licensee's name and contractor licence number, and
(ii) documentary evidence that the licensee has complied with the applicable requirements of that Act*,
or

b) In the case of work done by any other person:
(i) a statement detailing the person's name and owner-builder permit number, or
(ii) a declaration signed by the owner of the land, to the effect that the reasonable market cost of the labour and materials involved in the work is less than the amount prescribed for the purposes of the definition of ***owner-builder work*** in section 29 of that Act.
(iii)

*A certificate purporting to be issued by an approved insurer under Part 6 of the *Home Building Act 1989* to the effect that a person is the holder of an insurance contract issued for the purposes of that Part, is sufficient evidence that the person has complied with the requirements of that Part.

Bruna Tieppo

From: Tom Luedecke <tom@kazooboard.com>
Sent: Thursday, 20 February 2014 5:29 PM
To: Bruna Tieppo
Subject: 26a Hudson - CC stage 1

Hi Bruna

Home owners warranty (HOW) has been paid on the full DA cost (which includes stage 1 and 2) Also the Long Service levy has been paid on the full DA cost.

thanks
tom

Tom Luedecke
0404 474 075

Pittwater Council

Tax Invoice
Official Receipt

ABN: 61340837871

13/02/2014 Receipt No: 355922

To: Thomas Luedecke
PO BOX 712
Avalon Beach
NSW 2107

Applic	Reference	Amount
GL Receipt		
QLGL-Builders LSL 1 x long service levy	B0264/13	$4,606.00
Transaction Total:		$4,606.00
Includes GST of:		$0.00

Amounts Tendered

Cash	$0.00
Cheque	$4,606.00
Db/Cr Card	$0.00
Money Order	$0.00
Agency	$0.00
Total	$4,606.00
Rounding	$0.00
Change	$0.00
Nett	$4,606.00

Printed 13/02/2014 1:03:59PM

Home Warranty Insurance
Certificate of Insurance

Home Warranty Insurance Fund

QBE Insurance (Australia) Ltd
Level 3, 85 Harrington St
SYDNEY NSW 2000
Phone: 1300 790 723
Fax: 02 8275 9330
ABN: 78 003 191 035
AFS License No: 239545

QBE

Policy Number BN0055878BWI-2

ANICK GRAVELINE
26A HUDSON PARADE,
AVALON BEACH 2107

Name of Intermediary
DON HUTTON INSURANCE BROKERS
P O BOX 12
PENSHURST NSW 2222

Account Number
BN2038909
Date Issued
14/02/2014

Policy Schedule Details

Certificate in Respect of Insurance

Residential Building Work by Contractors

A contract of insurance complying with sections 92 and 96 of the Home Building Act 1989 has been issued by QBE Insurance (Australia) Limited as agent for and on behalf of the NSW Self Insurance Corporation (SICorp) (ABN 97 369 689 650) who is responsible for management of the Home Warranty Insurance Fund.

In Respect of	NEW SINGLE DWELLING CONSTRUCTION CONTRACT
At	26A HUDSON PARADE AVALON BEACH NSW 2107
Carried Out By	BUILDER KAZOO AQUASPORTS PTY LIMITED ABN: 52 092 836 167
Declared Contract Price	$1,150,000.00
Contract Date	10/02/2014
Builders Registration No.	U 264462C
Building Owner / Beneficiary	ANICK GRAVELINE

Subject to the Act and the Home Building Regulation 2004 and the conditions of the insurance contract, cover will be provided to the Building Owner/Beneficiary named in the domestic building contract and to the successors in title to the Building Owner/Beneficiary or the immediate successor in title to the contractor or developer who did the work and subsequent successors in title.

Additional Policy Details
SWIMMING POOL

Signed for and on behalf of NSW Self Insurance Corporation (SICorp)

Ty Ayscough

IMPORTANT NOTICE:
In addition to this certificate of insurance, a policy wording which outlines the terms and conditions of the cover provided is available from the HWIF website. To access that policy wording visit www.homewarranty.nsw.gov.au

Dilapidation report @ 26 Hudson Pde Avalon NSW 2107

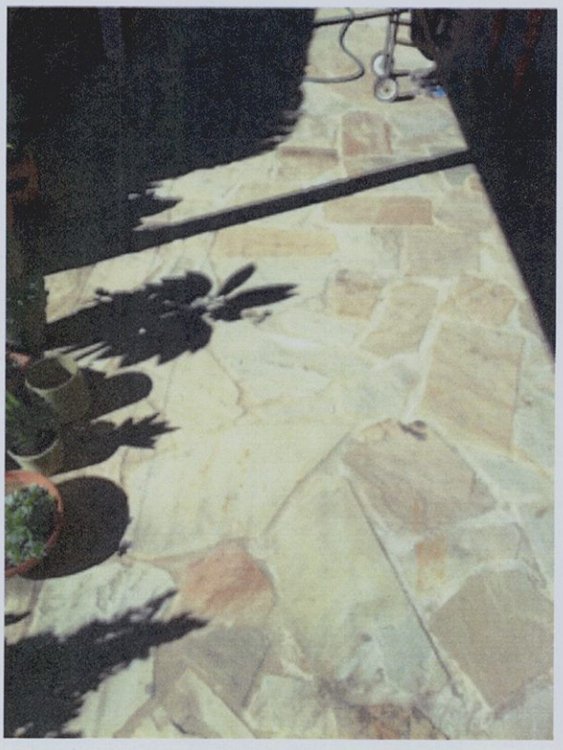
Prepared for:	Anick Graveline
Job Location:	26a Hudson pde Avalon NSW 2107
Purpose:	Photographic report of adding wall and residence for construction monitoring
date:	17th february 2014
Prepared by:	Thomas Luedecke Licensed Builder
reference:	026/14

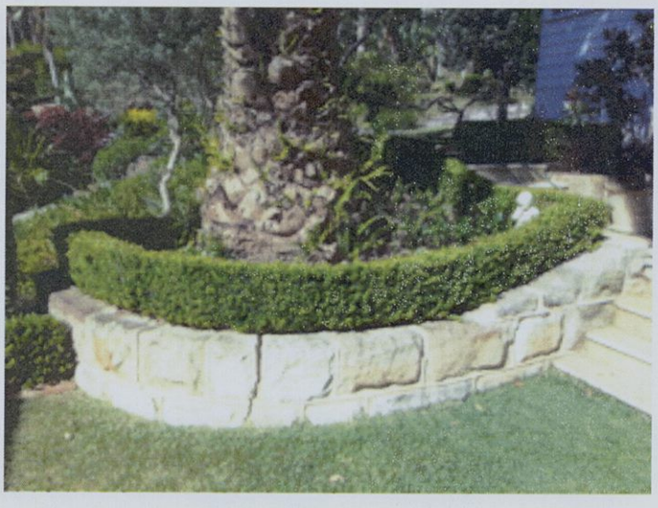
The subject dwelling is approximately 50 years old painted timber weatherboard onto of rendered brick base. The two storey dwelling is well maintained as are surrounding gardens and landscape structures. This report focuses primarily on the western retaining wall and western side of the dwelling adjoining to the proposed construction site at 26a Hudson Pde.

The inspection was carried out on 14th February - weather overcast and cool.
Original photos attached indicate condition of walls and base of dwelling with comments as required

Retaining wall west side of dwelling showing cracks and movement.

Underside of dwelling





paving generally intact.
crack in garden wall




underhouse area - no visible cracks

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ABN:

MANDATORY AND CRITICAL STAGE INSPECTION REPORT - 143B PRE-APPROVAL INSPECTION

OWNER DETAILS

Name of person having benefit of the development consent:	Anick Graveline C/- Thomas Luedecke
Address:	PO Box 712 Avalon NSW 2107
Contact Details:	0404 474 075

RELEVANT CONSENTS

Consent Authority/Local Government Area:	Pittwater Council
Development Consent No:	264/13, , **Date issued:** 10/01/2014
Construction Certificate Number: 140018	**Date issued:** 1/01/0001

PROPOSAL

Address of Development:	26a Hudson Parade Clareville NSW 2107
Zoning:	
Building Classification:	1a
Type of Construction:	n/a
Scope of building works covered by this Notice:	New two storey house, swimming pool, boatshed and associated landscaping.

INSPECTION DETAILS

Principal Certifying Authority:	Grant Harrington **No.:** BPB0170
Inspector:	Grant Harrington **No.:** BPB0170
Inspection date and time:	3/02/2014 **Inspection time:** 12:00 PM

INSPECTION RESULTS

We have attended the above property and completed an inspection. Each area inspection and the inspection result is listed below.

- **Inspection area:** ✓ **143B Pre-Approval Inspection** - Satisfactory

ADDITIONAL COMMENTS

Grant Harrington
Inspector

Barrenjoey Consulting Engineers pty ltd
Stormwater Structural Civil
abn 13124694917 acn 124694917

30th Jan 2013

T. Luedecke & A. Graveline
26A Hudson Parade
Clareville
NSW 2107

PROPOSED NEW RESIDENCE
26A HUDSON PARADE CLAREVILLE
STORMWATER MANAGEMENT REPORT
Job No 130103

Barrenjoey Consulting Engineers pty ltd have inspected the above site, reviewed the proposed new residence plans (as prepared by Richard Cole Architecture) and prepared the Stormwater Management Plan (refer plan SW1 Job No 130103 dated Jan 2013) in accordance with the requirements of Pittwater DCP 21 Section B5 Water Management –

B5.1 – Water Management Plan
refer plan SW1 Job No 130103 dated Jan 2013

B5.2 – Wastewater Disposal,
standard connection to the Sydney Water system

B5.3 – Greywater reuse,
not applicable

B5.4 – Stormwater Harvesting,
8000l tank to connect to garden taps

B5.5 – Rainwater Tanks – Business, Light Industrial and Other,
not applicable

B5.6 – Rainwater Tanks – Water Supply,
not applicable.

B5.7 – Stormwater Management – On Site Stormwater Detention,
not applicable

B5.8 - Stormwater Management – Water Quality – Dwelling House, Dual Occupancy and Secondary Dwellings,

PO Box 672
Avalon NSW 2107
P: 9918 6264 M: 0418 620 330
E: lucasbce@bigpond.com

pre screening, first flush, litter and sediment control devices all specified within the Stormwater Management Plan

B5.9 - Stormwater Management – Water Quality – Other than Dwelling House, Dual Occupancy and Secondary Dwellings,
not applicable

B5.10 – Stormwater Discharge into Public Drainage System,
not applicable

B5.11 - Stormwater Discharge into Waterways and Coastal Areas
All stormwater run-off will discharge into the Pittwater Waterway as discharge to the public drainage system is not available, the discharge system will not result in cliff/bluff/dune or shoreline erosion sedimentation or water quality impacts (as the Outlet Pit within the Stormwater Management Plan has been detailed in accordance with the Water Management Act 2000 – Guidelines for controlled activities – Outlet Structures) and the discharge system will minimise the visual/environmental impact of any drainage discharge structure along the foreshore.

B5.12 – Stormwater Drainage Systems and Natural Watercourses
not applicable

B5.13 – Development on Waterfront Land
not applicable

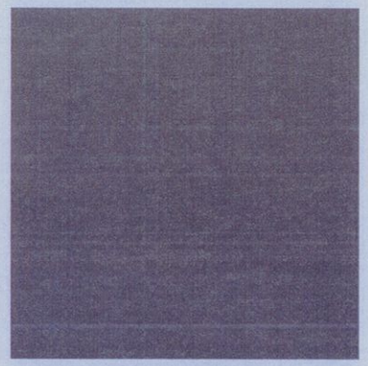
B5.14 – Stormwater Drainage Easements (Public Stormwater Drainage System)
not applicable

Should further information regarding this matter be required please contact our office as outlined below.

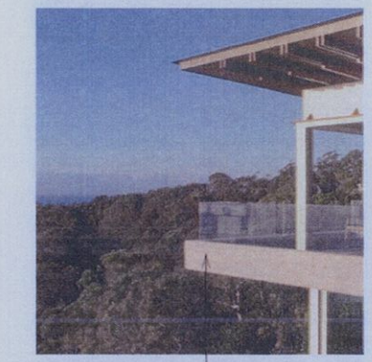
Regards
BARRENJOEY CONSULTING ENGINEERS pty ltd

Per
Lucas Molloy (Director)
BE CPEng NPER

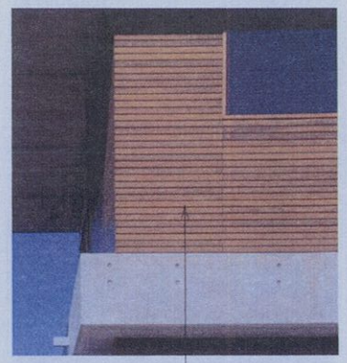
PO Box 672
Avalon NSW 2107
P: 9918 6264 M: 0418 620 330
E: lucasbce@bigpond.com



MUROBOND "NEARLY SLATE"
MASONRY WALLS



OFF FORM CONCRETE AND
FRAMELESS GLASS BALUSTRADES



CLEAR FINISHED TIMBER SCREENS

COPPER CLADDING

SANDSTONE CLADDING AND WALLS

TIMBER WINDOWS AND DOORS

richard cole architecture

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No.	Revision Description	Date
G	Issue to TL for Review	03-04-13

CLAREVILLE HOUSE

26a HUDSON PARADE CLAREVILLE
NSW 2107
for
Anick Graveline

Finishes Board

Project number	1112	Checked by	Checker
Date	September 2013	Scale	
Drawn by	Author		A19

PITTWATER COUNCIL

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 2 – PART B – To be submitted with detailed design for Construction Certificate

PART B Declaration made by Geotechnical Engineer or Engineering Geologist and/or Coastal Engineer (where applicable) in relation to the incorporation of the Geotechnical issues into the project design

I, KEIRAN WRIGHT on behalf of MARTENS AND ASSOCIATES
(insert name) (trading or company name)

on this the 14/02/2014
(date)

certify that I am a Geotechnical Engineer or Engineering Geologist and/or Coastal Engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2099 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least $2million. I also certify that I have reviewed the design plans and structural design plans for the Construction Certificate Stage and that I am satisfied that:

Please mark appropriate box

☑ the structural design meets the recommendations as set out in the Geotechnical Report or any revision thereto.
☑ the structural design has considered the requirements set out in the Geotechnical Report for Excavation and Landfill both for the excavation/construction phase and the final installation in accordance with Clause 3.2 (b)(iv) of the Geotechnical Risk Management Policy.

Geotechnical Report Details:

Report Title: Geotechnical Assessment: 26a Hudson Parade, Avalon, NSW
Report Date: JULY 2012
Author: Stanley Leung

Documentation which relates to or is relied upon in report preparation:

DRAWINGS 130103-S100, 130103-S200[02], 130103-S300,
130103-S400[02], 130103-S500, 130103-S501
130103-S600, 130103-SW01

I am also aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified.

Signature .....
Name KEIRAN WRIGHT
Chartered Professional Status CPEng
Membership No. 2934958
Company MARTENS & ASSOCIATES

* TO BE READ IN CONJUCTION WITH LANDSCAPE PLAN BY SALLY KELLY LANDSCAPES

rain Tree consulting

Arboricultural Management

PO Box 326 AVALON NSW 2107

Mobile 0419 250 248

MARCH 2013

26A HUDSON PARADE
AVALON BEACH, SYDNEY, NSW

ARBORICULTURAL ASSESSMENT & DEVELOPMENT IMPACT REPORT

Prepared for

Touchwood DB
C/- Tom Luedecke
26A Hudson Parade
AVALON BEACH,
SYDNEY NSW
M: 0404 474 075

Prepared by
Mark A. Kokot
AQF Level 5
Consulting arborist

TABLE OF CONTENTS

INTRODUCTION

This report has been commissioned by Touchwood DB C/- Tom Luedecke to assess the Useful Life Expectancy (U.L.E) and potential impacts that may occur to significant trees in relation to a new development proposal.

The new development proposal consists of demolishing the existing site features to make way for the construction of a new dwelling, garage, swimming pool, landscaping and associated infrastructure within the subject site. The subject site is formally identified as Lot 1 in DP 548857, known 26A Hudson Parade, AVALON BEACH, SYDNEY NSW.

This report has been prepared to aid in the assessment of development impacts and includes information regarding the health and condition of the trees assessed. Recommendations for the retention, remediation or removal of the trees are based on their accorded U.L.E. category, the design proposal and potential impacts under this current development application.

Information contained in this report reflects the condition of the trees at the time of inspection. This report is not a detailed tree risk assessment however, recommendations are made if further investigations are required due faults that can not be quantified under visual assessment.

This report acknowledges the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 – 2009. A 10% encroachment by development is determined as a minor or negligible encroachment, with greater than 10% considered a major encroachment under the standards. Encroachments are referred to within this report as major or minor encroachments (AS4970).

Each tree has been accorded an identification number and is referred to by number throughout this report. The trees may be referenced within the Tree Assessment Schedule and Tree Location Plan Appendices C and D.

Care has been taken to obtain information from reliable sources. All data has been verified as far as possible, however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

METHODOLOGY

i In preparation for this report a limited site and ground level Visual Tree Assessment (VTA) was conducted in February 2013 by the author of this report. The principles of VTA were adopted from *Mattheck & Breloer* 1994 '*The Body Language of Trees*.' The inspection included assessment of the overall health and vigour of the trees, tree form, structure and structural condition commencing from near the lower trunk to the upper first order branch division.

ii The inspection was limited to a Visual Tree Assessment (VTA) from within the subject site only. No aerial (climbing) inspections, woody tissue testing or tree root investigation was undertaken as part of this tree assessment. Tree height and canopy spread was estimated and expressed in metres with trunk diameters approximately measured 1.4 metres above ground level, rounded off to the nearest 50mm and expressed as DBH (Diameter at Breast Height).

Unless specified otherwise all distances and development offsets within this report are taken from the centre of the tree.

iii This report utilises the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1, Table of determining the SRZ, section 3.3.5 of the standards.

No works are permitted within the radial SRZ unless specified within this report. MAJOR OR MINOR ENCROACHMENTS

iv Plans and/or documentation received to assist in preparation of this assessment include:

Richard Cole Architecture

- Site & Site Analysis Plans Dwg No: A01 & A02 rev/E dated 30.01.13
- Lower Ground Floor Plan Dwg No: A03 rev/E dated 30.01.13
- Elevations Dwg No: A07, A08, A09 & A10 rev/E dated 30.01.13
- Sections Dwg No: A11 & A12 rev/E dated 30.01.13
- Carport Plan & Driveway Section Dwg No: A19 rev/E dated 30.01.13
- Boatshed Plans & Sections Dwg No: A11, A12 rev/E dated 30.01.13
- Boatshed Elevations Dwg No: A22 rev/E dated 30.01.13

DP Surveying

- Site Survey Plans Sheets 1 to 3 ref: 2384 dated 7 March 2012

1.0 SUMMARY OF CONCLUSIONS

1.1 Eleven (11) trees have been assessed under this development proposal which consists of six (6) trees located within adjoining properties. No neighbouring trees will be adversely affected by development works given appropriate tree protection is conducted throughout the course of site activities.

1.2 Neighbouring trees 5 & 6 are structurally defective at the base and capable of failure. An individual tree risk assessment is recommended to quantify the retention value of the trees and to identify the risk to person and property before construction commences.

1.3 Tree removal. No protected trees require removal under this current development application with one (1) exempt tree, Illawarra Flame tree No: 7 requiring removal to accommodate the new garage and driveway access.

1.4 Pittwater foreshore Spotted Gum trees 8, 9 & 10 are not expected to be adversely affected by the boatshed and access stairs given that no deep over excavation occurs near the trees as specified within this report.

Tree 11 requires further investigations as the foreshore stonewall and foundations are located within the 2.7m radial anchoring root zone (SRZ). A detailed Tree Root Investigation (TRI) is recommended to determine the impact by the proposal on tree stability.

1.5 Any modification of existing soil conditions within the TPZ areas for new retaining walls or landscape requirements (cut or fill) requires to be assessed and certified by an appointed site arborist.

Tree decline may occur as the topography of the site will be altered by dwelling excavations / Lower Floor Levels which may disrupt existing down hill natural water drainage to the trees below. A permanent irrigation system is recommended to be installed within the new foreshore landscape area as compensation and tree management in support of this proposal.

1.6 All trees including neighbouring trees are to be protected prior to works commencing which includes the demolition stage. The principles of tree protection as identified within this report and in particular the Tree Management Plan (TMP) section 4.0 are to be adopted to maintain the viability of the trees.

1.7 The development site superintendant is responsible for adopting and enforcing all tree protection requirements as specified within this report.

To ensure the viability of trees is maintained the development site superintendant is recommended to provide arboricultural certification to the Principal Certifying Authority (PCA) that all tree protection methodology and fencing has been constructed accordingly.

2.0 DISCUSSIONS OF OBSERVATIONS

2.1 General Tree Assessment

2.1.1 Eleven (11) trees have been assessed under this development proposal which include six (6) trees located within adjoining properties.

Of the five (5) trees located on site, one (1) tree, tree 7 (Illawarra Flame) is as exempt species within the Local Government Authority (LGA) Tree Preservation Order (TPO). The tree is currently displacing the boundary retaining wall containing a very short retention value for this reason. The remaining four (4) trees are considered typical for the species type being located on moderately steep land at the foreshore of Pittwater.

Neighbouring trees

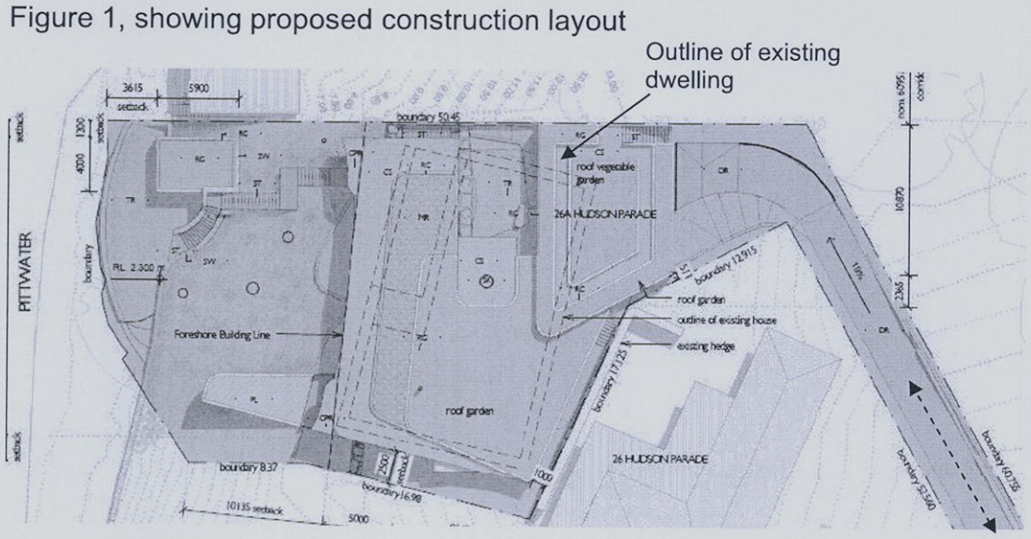
2.1.2 Neighbouring trees potentially affected by the proposal are located down the battleaxe driveway handle or within the northern property. Those trees located adjacent the driveway handle, trees 1 to 4, are not expected to be affected by site machinery access however, appropriate tree protection is recommended to be installed.

Trees 5 & 6 are structurally defective at the base. Both trees are recommended for individual tree risk assessments as they appear to have the capability of failing from ground level. The two trees are considered neighbouring trees with low safe retention values and likely to be removed within the very short term. The trees short life expectancies should not restrict this development proposal for this reason.

2.2 The development proposal

2.2.1 The new development proposal consisting of removing the existing dwelling to construct a new home, garage, swimming pool, boat shed and associated infrastructure to complement the new design.

Figure 1, showing proposed construction layout



The following schedule section 2.3 identifies proposed works for tree removal, relocation or retention due to the new development proposal.

2.3 Schedule summary of proposed tree works

	Trees identified for removal		*Denotes TPO exempt species
Tree No:	**Species type**	**DA requirement**	**Specifications**
1 NT	*Eriobotrya japonica* Loquat	Retain & protect	Neighbouring tree. No adverse impact / requires protection refer sec- 4.0 / TPF required
2 NT	*Corymbia maculata* Spotted Gum	Retain & protect	Neighbouring tree. No adverse impact / requires protection refer sec- 4.0 / TPF required
3 NT	*Magnolia spp. var* Little Gem Magnolia	Retain & protect	Neighbouring tree. Very minor encroachment / excavation for retaining wall to remain within boundry line / requires protection refer sec 2.5.2 & 4.0 / TPF & certification required
4 NT	*Banksia serrata* Old Man Banksia	Retain & protect	Neighbouring tree. Very minor encroachment / excavation for retaining wall to remain within boundry line / requires protection refer sec 2.5.2 & 4.0 / TPF & certification required
5 NT	*Corymbia maculata* Spotted Gum	Retain & protect?	Neighbouring tree. Defective / driveway & garage above ground level / no excavation within 2.3m SRZ or root damage greater than 30mm(Ø) to occur. Arborist supervision during demolition & part construction / refer sec 2.5.3 & 4.0 TMP / TPF & certification required
6 NT	*Corymbia maculata* Spotted Gum	Retain & protect?	Neighbouring tree. Defective / construction part at or near ground level, cantilever suspended garage floor plan? / no excavation within 2.4m SRZ or root damage greater than 30mm(Ø) to occur. Arborist supervision during demolition & construction / refer sec 2.5.3 & 4.0 TMP / TPF & certification
***7**	*Brachychiton acerifolius* Illawarra Flame	Remove	TPO exempt species Clause 8.2 – Undesirable tree. Displacing retaining wall. Remove to accommodate driveway & garage proposal
8	*Corymbia maculata* Spotted Gum	Retain & protect	Minor encroachment no adverse impact. No deep excavation or disturbance within 3m of tree / refer sec 2.5.4 & 4.0 TMP / TPF & certification required
9	*Corymbia maculata* Spotted Gum	Retain & protect	Minor encroachment no adverse impact / no excavations within 4.6m of tree for boatshed & access stairs. Refer sec 2.5.5 & 4.0 TMP - TPF & certification required
10	*Corymbia maculata* Spotted Gum	Retain & protect	Major encroachment impacts minimised by correct tree care / no over excavation within 4.5m for in ground access stairs. Refer sec 2.5.6 & 4.0 TMP - TPF & certification required
11	*Corymbia maculata* Spotted Gum	Retain & protect	Requires further information. Undertake tree root investigation to determine foreshore stonewall & stair access impact within SRZ. No root damage within 2.7m SRZ recommended. Refer sec 2.5.7

2.4 Tree removal due to development proposal

2.4.1 No protected trees require removal under this current proposal.

The removal of one exempt tree, tree 7 is required to accommodate the garage footprint and associated infrastructure.

2.5 Development impacts on remaining trees

Neighbouring trees

2.5.1 Trees 1 & 2, negligible impact. Located adjacent the driveway access handle are likely to require Tree Protection Fencing (TPF) to minimise the potential risk of construction vehicle access impacts.

2.5.2 Trees 3 & 4, minor excavation encroachment by renovation of the existing driveway retaining wall. Excavations to remain within the boundry limits to minimise development impacts. No over excavation is recommended without approval from the appointed site arborist.

2.5.3 Trees 5 & 6 are defective trees capable of future failure. The trees are recommended for individual tree risk assessments to quantify their retention value. If the trees are found to be at risk of failure the following recommendations will not apply provided the trees are removed prior to works commencing.

The new garage proposal is located within the SRZ of both trees. Section Plan A12 rev E, shows the garage floor plan suspended above ground level adjacent tree 5, with new works at ground level and foundation infrastructure adjacent tree 6.

Tree 5 is expected to receive a negligible impact due to the suspended garage floor plan.

Tree 6 requires new works to be constructed on top of grade / ground level with cantilevering the garage foundations to minimise excavation impacts adjacent the tree. Root investigations can be conducted to ensure no tree root at or greater than 30mm(Ø) is damaged by the current proposal.

Where possible the northern face beneath the suspended garage floor is to remain open allowing for moisture and air movement, with the existing driveway recommended to remain acting as root protection during construction.

Trees located on site (Pittwater foreshore)

2.5.4 Tree 8, located at edge of steep bank. Lower Ground Floor Plan A03 rev E shows a 5.2m setback at development level RL9.5 indicating a negligible impact within the 3.6m radial TPZ. No excavation cut is recommended within 3m of tree with exception of isolated footings for suspended stair access to the lower boatshed and foreshore area. Any modification of existing soil conditions for new retaining walls or landscape requirements (cut or fill) requires to be assessed, approved and certified by an appointed site arborist. Refer principals of tree protection identified within the Tree Management Plan (TMP) sec 4.0.

2.5.5 Tree 9, Lower Ground Floor Plan A03 rev E shows the new proposal within the line of the existing building footprint indicating a negligible encroachment impact by the new dwelling construction at RL9.5.

Excavations for the lower boatshed are located approximately 4.7m from the tree being outside of the 3.1m radial SRZ. Encroachment due to the construction of the new boatshed is expected to have a negligible impact within the TPZ given appropriate tree protection and management prior, during and post construction. Existing sandstone ground cover is recommended to remain as root protection during major works. No over excavation is to occur within 4.6m of the tree for the boatshed with new part suspended and part inground foreshore access stairs to ensure no tree root severing at or greater than 30mm(Ø) occurs. Any modification of existing soil conditions within the 10.2m radial TPZ for new retaining walls or landscape requirements (cut or fill) requires to be assessed, approved and certified by an appointed site arborist. Refer principals of tree protection identified within the TMP section 4.0.

2.5.6 Tree 10, Lower Ground Floor Plan A03 shows the new proposal within the line of the existing building footprint having a negligible impact by dwelling construction at RL9.5. The 6m setback swimming pool proposal is mostly suspended above ground level reducing construction impacts [South & West Elevations Plan A08 & 09]

Excavations for the lower boatshed are located approximately 7.4m from the tree with new part in ground access stairs at 4.5m. Excavations are proposed outside of the 3.1m radial SRZ with the new boatshed and associated infrastructure expected to have a negligible impact within the TPZ given appropriate tree protection and management prior, during and post construction. Existing sandstone ground cover is recommended to remain as root protection during major works. No over excavation is to occur for the construction of the boatshed and in ground foreshore access stairs with no tree root severing at or greater than 30mm(Ø). Any modification of existing soil conditions within the 10.2m radial TPZ for new retaining walls or landscape requirements (cut or fill) requires to be assessed and certified by an appointed site arborist. Refer principals of tree protection identified within the TMP section 4.0.

2.5.7 Tree 11, the swimming pool proposal is mostly suspended above ground level minimising construction impacts to the tree [South & West Elevations Plan A08 & 09].

The existing sandstone ground cover is recommended to remain as root protection during major works. No excavations are recommended for the foreshore stone retaining wall and stair access within the 2.7m SRZ radius without further investigations.

Based on the current plans [West Elevation A09] where excavations for stonewall & stair foundations are proposed within the SRZ, a Tree Root Investigation (TRI) is recommended to determine the impact on tree stability. Details of the TRI, including stonewall foundations and construction plans are to be assessed and approved by an appointed site arborist. Where large woody anchoring tree roots are located pier & beam construction bridging over root zones is recommended. Soil fill within the newly created garden bed must be minimal, of free draining material, and not cover the base of the tree trunk at ground level.

3.0 CONCLUSIONS & RECOMMENDATIONS

3.1 Tree removal

3.1.1 One (1) tree, exempt Illawarra Flame tree No. 7 requires removal to accommodate the new development proposal. Under Clause 8.2 of the Tree Preservation Order (TPO) the exempt *Undesirable tree* does not require consent from Council to be removed.

3.2 Neighbouring trees

3.2.1 Trees 1, 2, 3 & 4 will no be adversely affected by works, which includes construction vehicle access. The trees will require Tree Protection Fencing (TPF) acting as a barrier against potential impacts.

Trees 3 & 4, repairs and/or replacement of the boundary retaining wall is to remain within the property limits. No over excavation is recommended for drainage without prior consultation with an appointed Level 5 site arborist.

3.2.2 Trees 5 & 6 are defective at the base and require detailed individual risk assessments to quantify their safe retention value.

Tree 5 is located where the new driveway & garage are suspended above ground level minimising root zone impacts. If the tree is to be retained, where possible the existing driveway slab should remain acting as a root protection barrier. Cantilevering foundations towards the tree and leaving the northern face exposed for moisture and air movement is also recommended.

Tree 6, if to be retained requires new works to be constructed on top of grade / ground level with cantilevering the garage foundations to minimise excavation impacts adjacent the tree.

3.3 Site trees

3.3.1 Tree 8, a negligible impact to the tree is expected given that no excavation occurs within 3m of tree. Exceptions are for isolated footings for the suspended stair access to the lower foreshore area. Refer principles of tree protection and management 3.4 & 4.0.

3.3.2 Tree 9, construction of the new boatshed is expected to have a negligible impact given appropriate tree protection and management prior, during and post construction. No over excavation is to occur within 4.6m of the tree for the boatshed and inground foreshore access stairs. Refer principles of tree protection and management 3.4 & 4.0.

3.3.3 Tree 10, a negligible impact by the boatshed and access stairs are expected by the proposal. No over excavation is to occur within 4.5m of the tree for the inground stairway. Refer principles of tree protection and management 3.4 & 4.0.

3.3.4 Tree 11, further information is required as stonewall footings and stair access is located within the 2.7m SRZ - anchoring root zone. A Tree Root Investigation (TRI) is recommended to identify root zone impacts, or if the proposal is achievable without adversely affecting tree stability. Details of the TRI, including construction plans are to be assessed by an appointed Level 5 arborist providing recommendations in tree management.

3.4 Principals of tree protection

3.4.1 All trees to be retained require the construction of a fenced Tree Protection Zone (TPZ) prior to the commencement of development activities, which includes any demolition or excavation works: refer Tree Management Plan (TMP) section 4.1.1.

The construction of tree protection shall be certified by an appointed site arborist prior to demolition and any excavation works commencing.

3.4.2 Trees 9, 10 & 11 located at the foreshore of Pittwater, the existing rough sandstone paver stones covering the foreshore area are recommended to be retained as root protection during major works. This will allow for a modification of Tree Protection Fencing (TPF) to trunk protection, allowing building access within the TPZ (root zone) radius. If the stone is to be removed and soil exposed, TPF will require construction as per the TMP section 4.1.1

3.4.3 Section 2.3 p7 *Schedule of proposed tree works* identifies general recommendations in tree management for both site and adjoining property trees which are also addressed in section 2.5 *Development Impacts on remaining trees* p8.

To maintain the viability of the trees during construction the principals outlined within the Tree Management Plan (TMP) section 4.0 are to be adopted at all times. This includes site supervision and appropriate tree/root protection conducted by a minimum certified, Australian Qualification Framework (AQF) Level 4 arborist when working within the TPZ radius of any tree to be retained. At no stage are tree roots at or greater than 30mm(Ø) permitted to be cut without prior consultation with the appointed site arborist.

The SRZ & TPZ setbacks, taken from the centre of the tree, have been provided within Appendix C for referencing. At no stage are works permitted within the SRZ area without prior approval from the appointed site arborist.

General

3.4.4 The development site superintendant is responsible for familiarizing and maintaining all tree protection measures as specified within this report, with all site contractors being made aware of the tree protection requirements by the development site superintendent.

3.4.5 Section 4.0 the Tree Management Plan (TMP) identifies the main principals of protecting trees on development sites. The recommendations provided within the TMP are to be adopted under this proposal so that the trees which require retention remain viable.

The TMP is to be referred to as a tree protection and management tool where all site works are to abide by the principals of tree protection.

3.4.6 The appointed site arborist is recommended to provide certification to the Principal Certifying Authority (PCA) that all tree protection methodology as specified within this report has been conducted accordingly throughout the course of development works.

4.0 TREE MANAGEMENT PLAN – Generic

4.1.1 **Tree Protection Fencing (TPF)** is to be constructed prior to any works commencing to ensure no adverse impacts occur to trees requiring retention during the course of development activities.

TPZ fencing is to consist of 1.8m high chain link fencing secured to the ground by 50 x 50mm steel posts. Generally the location of the TPZ is to be constructed outside of the canopy drip line or extent of the TPZ, refer Appendices C, SRZ & TPZ distance column.

If development site constraints exist the location of the TPZ fence may be reduced or altered. Modifications of the TPZ location is to be specified and approved at a pre development site meeting between the appointed site arborist and development site superintendant.

The location of the TPZ is to be constructed as to allow for best tree management practices while providing adequate development work access to finalise the construction proposal.

4.1.2 The TPZ is a development exclusion zone, it is an area isolated from construction disturbance so that the tree remains viable. Unless specified otherwise no works or storage of materials is permitted within the TPZ.

Appropriate signage shall be erected on the TPZ fencing identifying the prevention of any unauthorised activity and/or access.

Certification of TPZ modifications and TPF construction before commencement of works is to be provided by the appointed site arborist to the Principal Certifying Authority (PCA).

4.1.3 The appointed site arborist is to undertake regular site inspections to inspect site conditions, Tree Protection Fencing (TPF) and to provide further recommendations such as additional mulching or watering to maintain soil moisture content within the TPZ.

4.2.1 **Appointing a Site Arborist**. Prior to works commencing a qualified arborist with a minimum Australian Qualification Framework (AQF) Level 4 certification is to be appointed as the Site Arborist to address any development impacts that may occur.

The development site superintendant is responsible for enforcing all tree protection methodology, contacting and liaising with the appoint site arborist. The appointed Site Arborist must be consulted at all times when working within the TPZ and specifically be on site during development activities within the SRZ of trees.

4.3.1 **Hold Points**, unless specified otherwise no works are permitted within the SRZ radius of any tree without prior onsite arborist consultation or direct site involvement. The SRZ setback is a development exclusion zone. Where works are proposed within the SRZ an air knife root investigation is required to identify the potential impact which is to be assessed by the appointed Site Arborist.

Hand tools are to be used when working within both the SRZ & TPZ with cantilevering or bridging over the SRZ under pier & beam construction recommended.

4.4.1 **Demolition within the Tree Protection Zone (TPZ)** is recommended to be supervised by the appointed Site Arborist. Rubber tracked excavators must work within the footprint of any hard surface such as pathways and pavements to minimise the radial impact to the TPZ and/or SRZ of trees. Any sub base material located is to be removed by the use of hand tools to avoid damage to underlying tree roots.

4.5.1 **Excavation within the TPZ,** is to be avoided where possible. Any excavation for footings, foundations or grading (site leveling) and hydraulics is to be supervised by the appointed Site Arborist.

To appropriately protect the root zone Air Knife excavation is recommended to locate and expose any tree roots which may be affected by the proposal to avoid ripping by site machinery.

Any tree root not exceeding 30mm(Ø) in diameter shall be clean cut with sharp clean root pruning tools. Further advice from the Site Arborist is required where larger woody tree roots have been exposed.

4.6.1 **Landscaping or development within the TPZ** is to complement the long term needs to retain the subject tree. Pervious paving materials are recommended within the TPZ to maintain soil moisture availability.

Unless approved within this report no grade changes being cut or fill is to occur within 80% of the TPZ radius. Maintaining the existing soil levels, moisture and aeration is the key to significant tree preservation. All efforts are to be made in maintaining the TPZ, soil moisture content and soil micro organism activity essential for maintaining good tree vigour.

4.7.1 **Fill material within the Tree Protection Zone**, fill material within the Tree Protection Zone shall be avoided where possible with the exception of an arborist or horticulturalist approved landscape grade soil for the purpose of minor landscaping requirements only.

4.8.1 **Site machinery**, demolition, excavations and site construction machinery must ensure that no direct conflicts occur to trees, which may include canopy overhang towards development activities.

4.8.2 In the event of tree damage the appointed site arborist is to be notified immediately. The site arborist is to immediately undertake remedial action to minimise any adverse impact.

4.9.1 **Underground services**, no trenching for underground services is permitted within the SRZ setback without prior arborist approval.

Where underground services are required within the SRZ or in line cutting through the TPZ, advice from the appointed site arborist including site supervision is required.

Underboring or directional drilling may be recommended where an adverse impact may occur.

4.10.1 **Root pruning**, All tree roots encountered are to be correctly treated, clean cut by the appointed site arborist abiding to the Australian Standards Pruning of Amenity Trees AS 4373 2007 section 9 *Root pruning* at all times.

At no stage are tree roots at or greater than 30mm in diameter allowed to be cut by site contractors without prior arborist consultation. Where significant woody tree roots are located bridging over or tunneling beneath the root system may be required to ensure the vigour of the tree is not adversely affected.

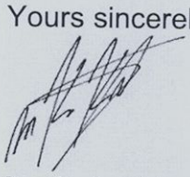
4.11.1 **Canopy pruning**, where required tree removal and canopy reductions are to be conducted by a suitably qualified, site and Workcover insured (Code of Practice 'Amenity Tree Industry' 1998) AQF Level 3 Arborist abiding to the Australian Standards Pruning of Amenity Trees AS 4373 2007 at all times.

4.12.1 **Certifications**, the development site superintendant is to provide appointed site arborist certifications to the Principal Certifying Authority (PCA) that all tree protection fencing and methodology as specified within this report has been adequately conducted throughout the course of site activities.

Arborist Certification is to consist of timing of events, discussions of attendance, tree roots encountered and mitigation works conducted to minimise development impacts.

Should you require further liaisons in this matter please contact me direct on 0419 250 248.

Yours sincerely



Mark. A. Kokot – 0419 250 248
Diploma of Hort/Arboriculture (AQFL5),
Associate Diploma Parks Management (AQFL4)
Certified Arborist / Tree Surgeon (AQFL3),
Registered Consulting Arborist Member:
Arboriculture Australia (AA) No.1292,
Builders Contract Licence No. 43850C

APPENDICES

APPENDIX, A: Terminology & references

Age classes: (I) Immature refers to a well established but juvenile tree. (ESM) refers to an early semi mature tree not of juvenile appearance. (SM) Semi-mature refers to a tree at growth stages advancing into maturity and full size. (LSM) Late Semi- Mature, refers to a tree between semi-mature and close to mature. (EM) refers to a tree at the first stages of maturity. (M) Mature refers to a full size tree with some capacity for future growth.
Health: Refers to a trees vigor exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback.
Condition: Refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. Trunk and major branches), including structural defects such as cavities, crooked trunks or week trunk / branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition.
Decay: (*N*) – an area of wood that is undergoing decomposition. (*V*) – decomposition of an area of wood by fungi or bacteria.
Decline: Is the response of a tree to a reduction of energy levels resulting from stress. Recovery from decline is difficult and slow; is usually irreversible.
Defect: A identifiable fault in a tree.
Epicormic Shoots: Shoots that arise from latent or adventitious buds that occur on stems and branches and on suckers produced from the base of the tree. A symptom / result of stress related factors.
Footprint: The area occupied by site structures, including the dwelling driveways and hard surfaces.
Hazard: When a tree failure hazard is present when a tree has potential to cause harm to people or property. (A source of potential harm).
Included Bark: (Inclusion) a genetic weak fault, pattern of development at branch junctions where the bark is turned inwards rather than pushed out, can pose a potential hazard.
Order of branches: First order being those that are the first to extend from the main trunk or codominant limbs, second order branches extend from the first order and third order branches extend from the second order.
Probability: The likelihood of some event happening.
Risk: Is the probability of something adverse happening.
Suppression: Restrained growth pattern from competition of other trees or structures.
Stress: Refers to the response of a tree to the reduction of energy levels resulting from adverse influences such as altered soil conditions (compaction, poor nutrition, reduced oxygen or moisture levels), root damage, toxicity, drought, waterlogging; may be reversible given good arboricultural practices but may lead to decline.
Wound: Damage inflicted upon a tree through injury to its living cells, may continue to develop further weakening of the structure compromising structural integrity.

REFERENCES:

Barrell J. 1993, 'Preplanning Tree Surveys: Safe useful Life expectancy (SULE) is the Natural Progression", Arboricultural Journal 17: 1, February 1993, pp. 33-46.

Mattheck, C. & Breloer, H.(1994) *The Body Language of Trees.* Research for Amenity Trees No.4 the Stationary Office, London.

Matheny N. & Clark J. 1998, Trees & Development *'A Technical Guide to Preservation of Trees During Land Development'* International Society of Arboriculture, Champaign USA.

Standards Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.

APPENDIX, B: Tree Retention Values

i) Landscape Significance: The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values. The values may be subjective however, offer a visual understanding of the relative importance of the tree to the environment. The Landscape Significance of a tree is described in seven categories to assist in determining the retention value of the tree/s.

1	Significant	3	High	5	Low	7	Insignificant
2	Very High	4	Moderate	6	Very Low		

ii) Risk Values: Determined by degree of defect to tree height & dimensions, tree lean & loading pressures / weight, amount of damage, target area & frequency of occupancy within the target range of tree or tree part failure. Categorised as:

1	High	2	Medium	3	Low

iii) U.L.E. categories Useful Life Expectancy (modified by the author after *Barrell* 1996)

In a planning context, the time a tree can expect to be usefully retained is the most important long-term consideration. A trees U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. U.L.E. assessments are not static but may be modified as dictated by changes in trees health and environment.

The five categories and their sub-groups are as follows:

1. **Long ULE** – Tree appeared retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance.
2. **Medium ULE**- Trees appeared to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance.
3. **Short ULE-** Trees appeared to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk, assuming reasonable maintenance.
4. **Very short - Removal-** Trees which should be removed within the next 5 years or as specified within this report.
5. **Small, young or regularly pruned-** Trees under 5m in height that can be readily moved or replaced.

APPENDIX, C: Tree Assessment Schedule.

TREES LOCATED WITHIN ADJOINING PROPERTIES

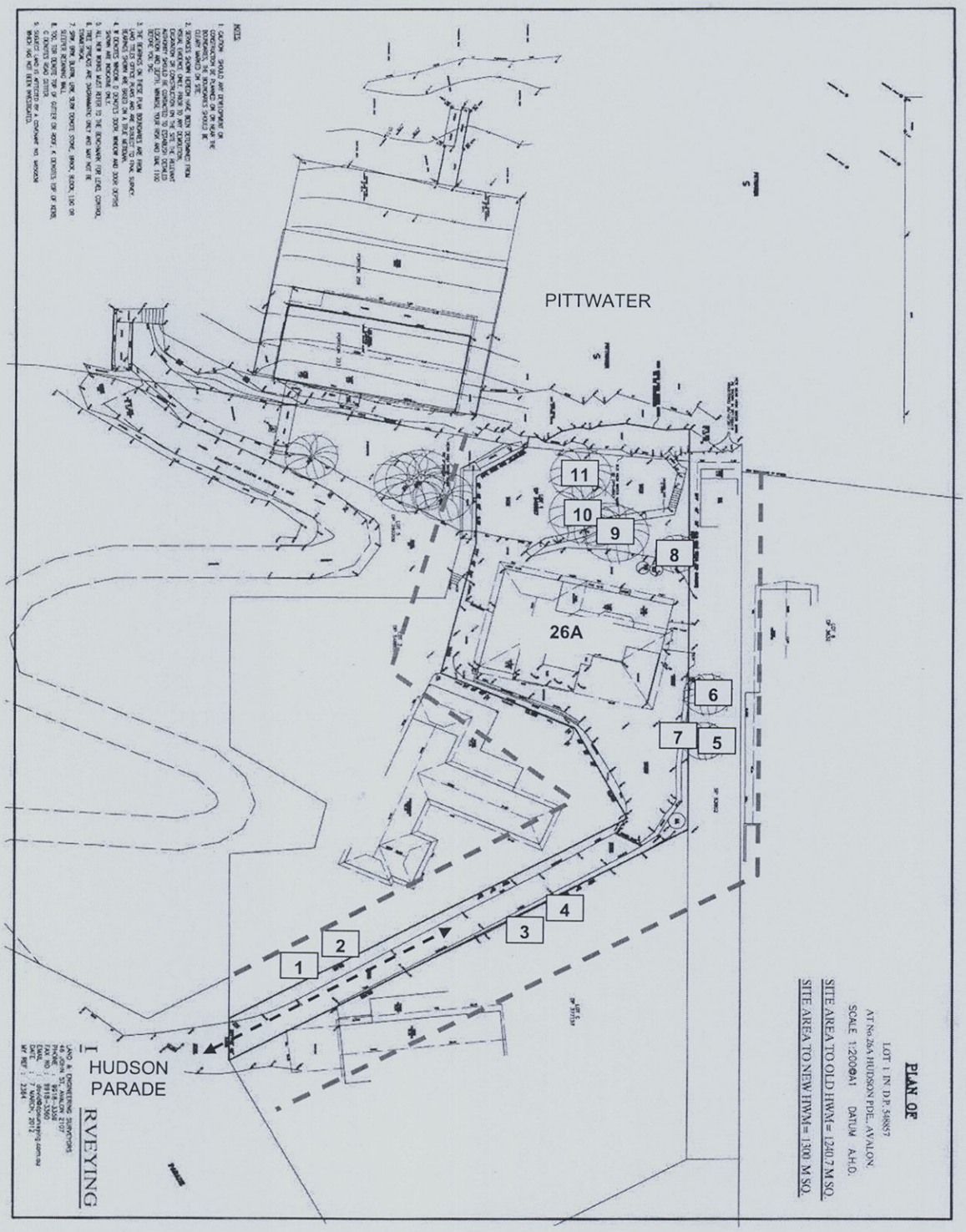
	Trees requiring immediate removal due to hazardous condition subject to Local Government Authority notification.							Trees with low retention values due to developing defects or being *exempt trees from the LGA Tree Preservation Order (TPO).				
Tree No	***Botanical Name* COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ / TPZ**	**Age**	**Health**	**Condition**	**Significance**	**Risk**	**U. L.E.**	**Comments**
1 NT	*Eriobotrya japonica* Loquat	5 x 5	150	1.5 / 2	ESM	Good	Fair / Good	4/3	3	3	Neighbouring tree. Raised lower crown with no significant defects noted
2 NT	*Corymbia maculata* Spotted Gum	9 x 6	300	2 / 3.6	ESM	Fair	Fair / Good	2	2/3	3	Neighbouring tree. Environmentally stressed, 20% decline in canopy, mostly new epicormic growth, low in vigour with fine tip dieback and deadwood to 80mm(Ø).
3 NT	*Magnolia spp. var* Little Gem Magnolia	4 x 3	150	1.5 / 2	ESM	Good	Good	4/3	3	2	Neighbouring tree. Typical for species type with no significant defects noted. 2.2m to top of retaining wall
4 NT	*Banksia serrata* Old Man Banksia	4 x 3	200	1.6 / 2.4	ESM	Fair / Good	Fair / Good	3	3	2	Neighbouring tree. Reduced for height management with no significant defects noted. 2.2m to top of retaining wall
5 NT	*Corymbia maculata* Spotted Gum	21 x 11	350	2.3 / 4.2	ESM	Fair / Good	Fair / Poor	2	2/1?	4?	Neighbouring tree. Lower trunk swelling, cavity at base east, basal hollow extends well below ground level, past termite damage & decay evident, tall one sided sail canopy form result of removed central tree between T5 & T6. Developing high risk tree requires further investigations = individual tree risk assessment.
6 NT	*Corymbia maculata* Spotted Gum	15 x 11	400	2.4 / 4.8	ESM	Fair / Good	Fair / Poor	2	2/1?	4?	Neighbouring tree. Basal swelling, open wounds on 3 sides of lower trunk to ground level, slight decay on northern wound at ground level, trunk wound seam at 2m east, slight lean west with one sided canopy extension. Developing high risk tree requires further investigations = individual tree risk assessment.

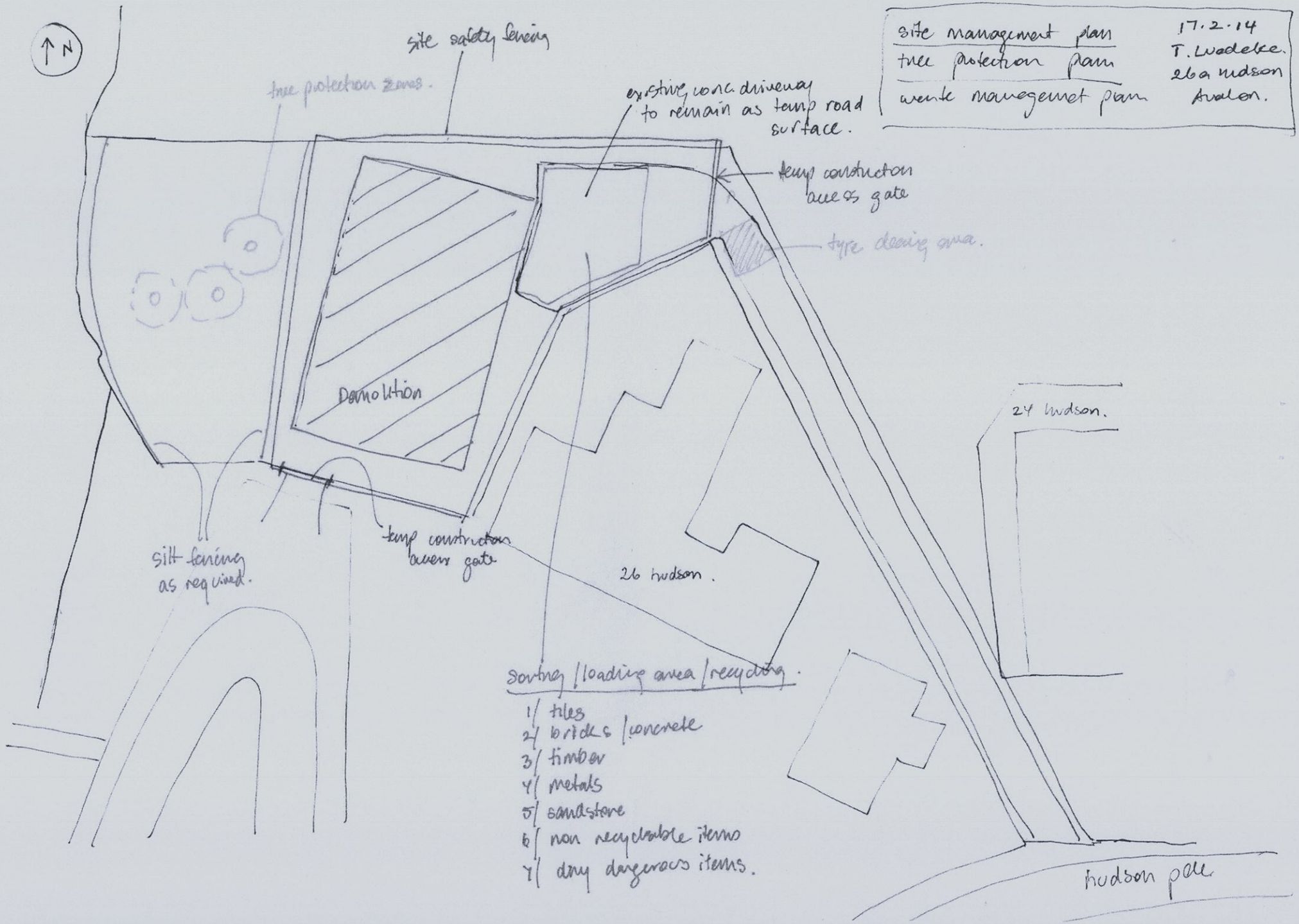
APPENDIX, C: Tree Assessment Schedule.

TREES LOCATED ON SITE

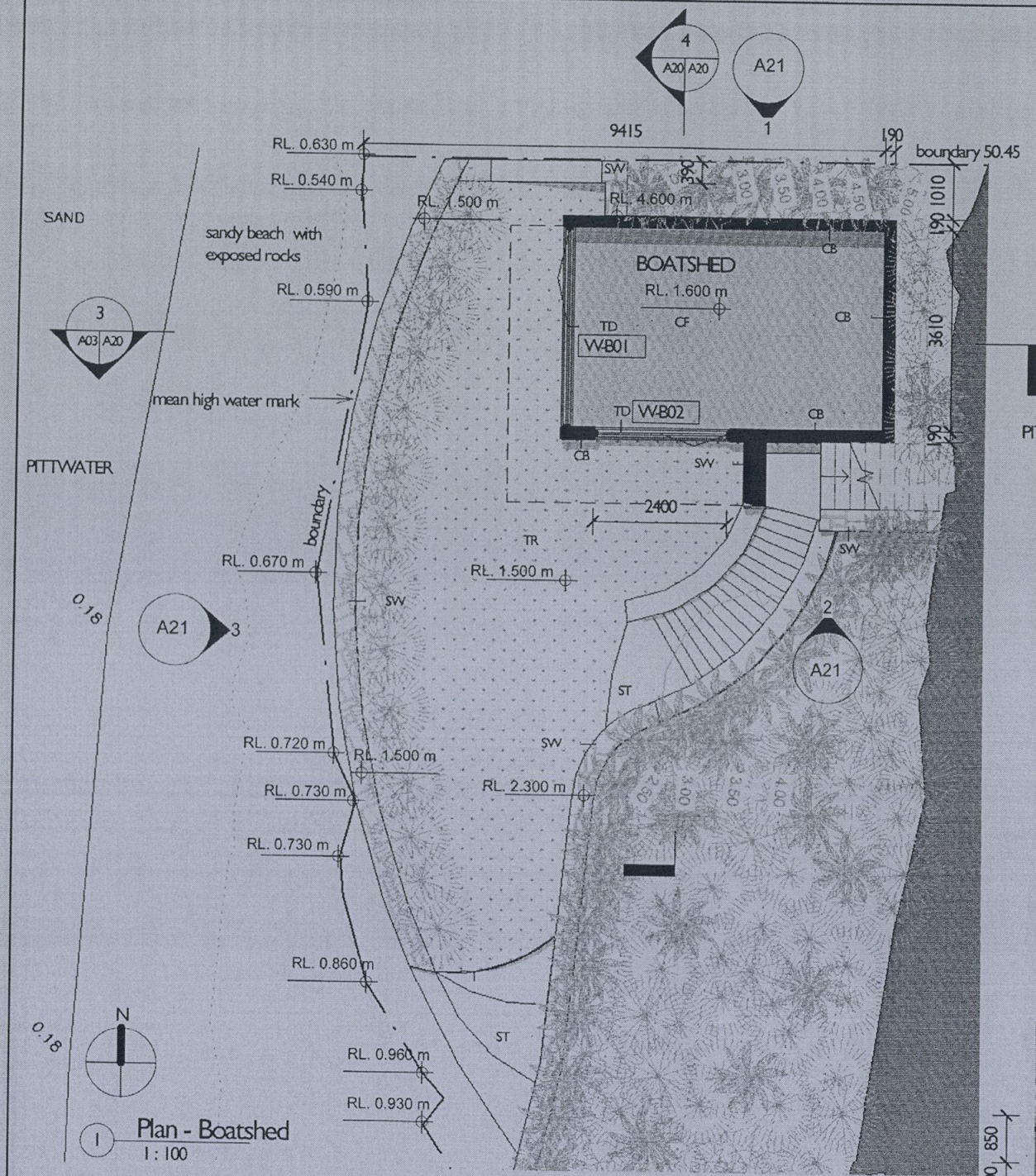
	Trees requiring immediate removal due to hazardous condition subject to Local Government Authority notification.										
	Trees with low retention values due to senescence, developing defects or being *exempt trees from the LGA Tree Preservation Order (TPO).										
Tree No	***Botanical Name* COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ / TPZ**	**Age**	**Health**	**Condition**	**Significance**	**Risk**	**U. L.E.**	**Comments**
*7	*Brachychiton acerifolius* Illawarra Flame Tree	6 x 3	250	1.8 / 3	ESM	Fair / Good	Good	4	2	4	Exempt tree from protection. TPO section 8.2 Undesirable trees. Displacing retaining wall, slight decline in canopy
8	*Corymbia maculata* Spotted Gum	14 x 8	300	2.1 / 3.6	ESM	Fair / Good	Good	2	2	3	Located at edge of steep bank, past modified site conditions surrounding tree (retaining walls, paths paved sandstone), fine tip dieback noted, base covered by vegetation, with no above ground significant defects evident
9	*Corymbia maculata* Spotted Gum	25 x 18	850	3.1 / 10.2	M	Good	Good	2	2	3	Located on steep bank, past modified site conditions surrounding tree (retaining walls, paths paved sandstone),existing southern retaining wall within SRZ with no significant defects noted
10	*Corymbia maculata* Spotted Gum	24 x 17	700	2.8 / 8.4	M	Good	Fair / Good	2	2	3	Lower trunk buttressing / swelling of increment strips = indicator of very shallow soils and root establishment, past modified site conditions surrounding tree (retaining walls, paths paved sandstone), with no significant defects noted above ground level
11	*Corymbia maculata* Spotted Gum	14 x 10	600	2.7 / 7.2	M	Fair / Good	Fair / Good	2	2	3	Located on steep bank, suppressed canopy, first order branch burl, slight lean north, minor fine tip dieback, past modified site conditions surrounding tree (retaining walls, paths paved sandstone), with no significant defects noted above ground level

APPENDIX D: Tree Location Plan

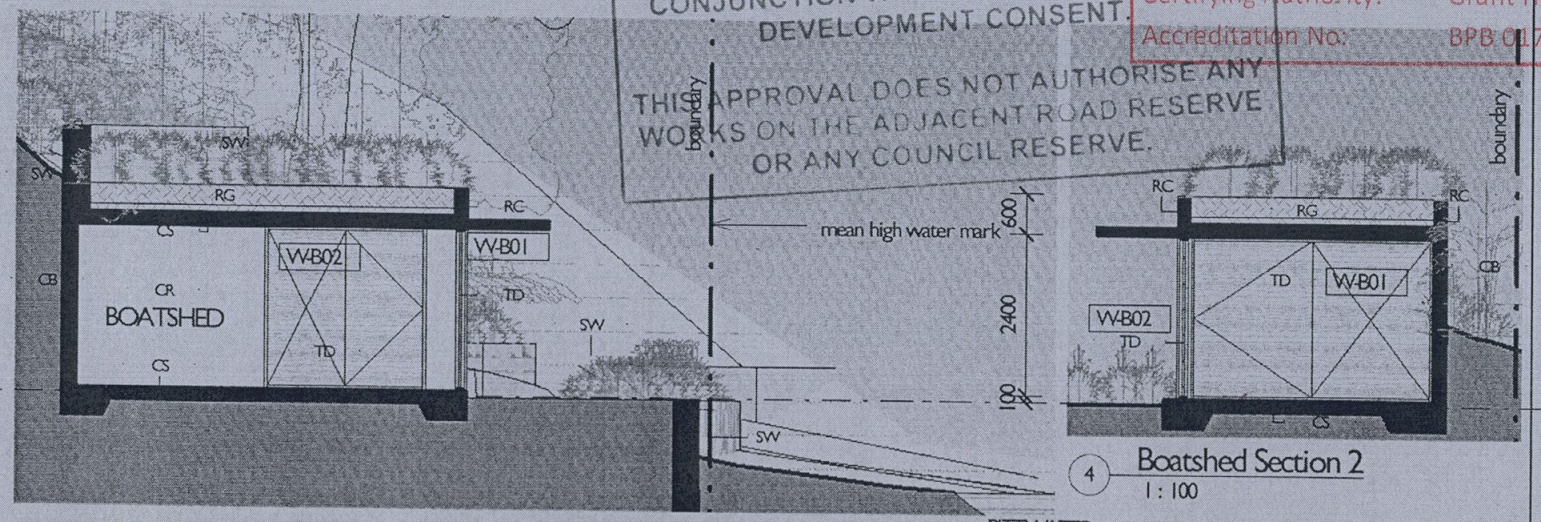



site safety fencing
tree protection zones.
existing conc. driveway to remain as temp road surface.
temp construction access gate
tyre cleaning area.
Demolition
silt fencing as required.
temp construction access gate
26 hudson.
24 hudson.
hudson pde
sorting / loading area / recycling.
1/ tiles
2/ bricks / concrete
3/ timber
4/ metals
5/ sandstone
6/ non recyclable items
7/ dmy dangerous items.
site management plan
tree protection plan
waste management plan
17.2.14
T. Wadeke.
26a hudson
Avalon.

PRELIMINARY



CB Concrete Blockwork Wall
CF Concrete Floor
CR Cement Render with Paint Finish
CS Concrete Slab
RC Reinforced Concrete
RG Roof Garden
ST Stair
SW Stone Wall
TD Timber Door
TR Turf



PITTWATER COUNCIL
APPROVED DEVELOPMENT CONSENT PLANS
NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT.
THIS APPROVAL DOES NOT AUTHORISE ANY WORKS ON THE ADJACENT ROAD RESERVE OR ANY COUNCIL RESERVE.

PRIVATE CERTIFIERS AUSTRALIA
Construction Cert. No: Approved Date
14 0018 21 FEB 2014
Certifying Authority: Grant Harrington
Accreditation No: BPB 0170

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No.	Revision Description	Date
G	Issue to TL for Review	03-04-13
H	Issued for Review	06-09-13
I	Issued for DA	10/09/13

CLAREVILLE HOUSE
26a HUDSON PARADE CLAREVILLE
NSW 2107
for
Anick Graveline

Boatshed Plans & Sections

Project number	1112	Checked by	Checker
Date	September 2013	Scale	1 : 100
Drawn by	Author		A20

PRELIMINARY

CR	Cement Render with Paint Finish
RC	Reinforced Concrete
RG	Roof Garden
ST	Stair
SW	Stone Wall
TD	Timber Door
TR	Turf

PRIVATE CERTIFIERS AUSTRALIA
Construction Cert. No: Approved Date
140018 21 FEB 2014
Certifying Authority: Grant Harrington
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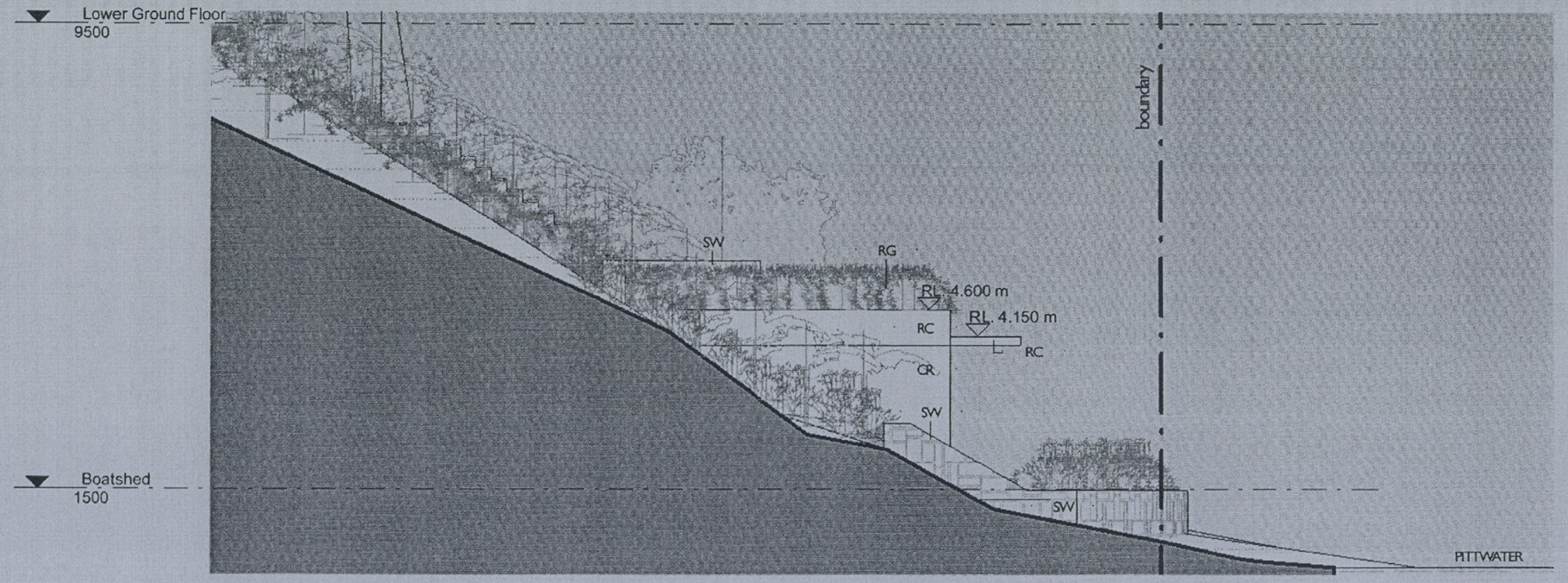

1 Boatshed North Elevation
1 : 100

PITTWATER COUNCIL
APPROVED DEVELOPMENT CONSENT PLANS
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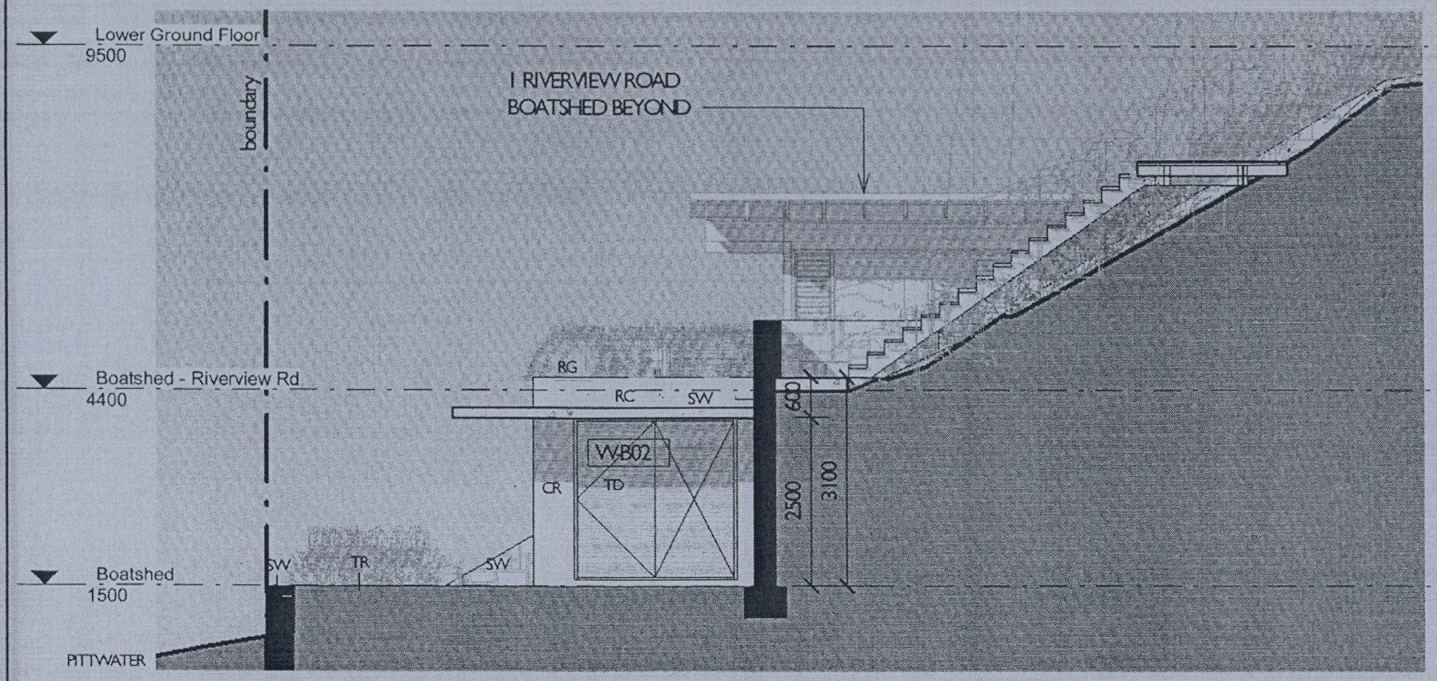
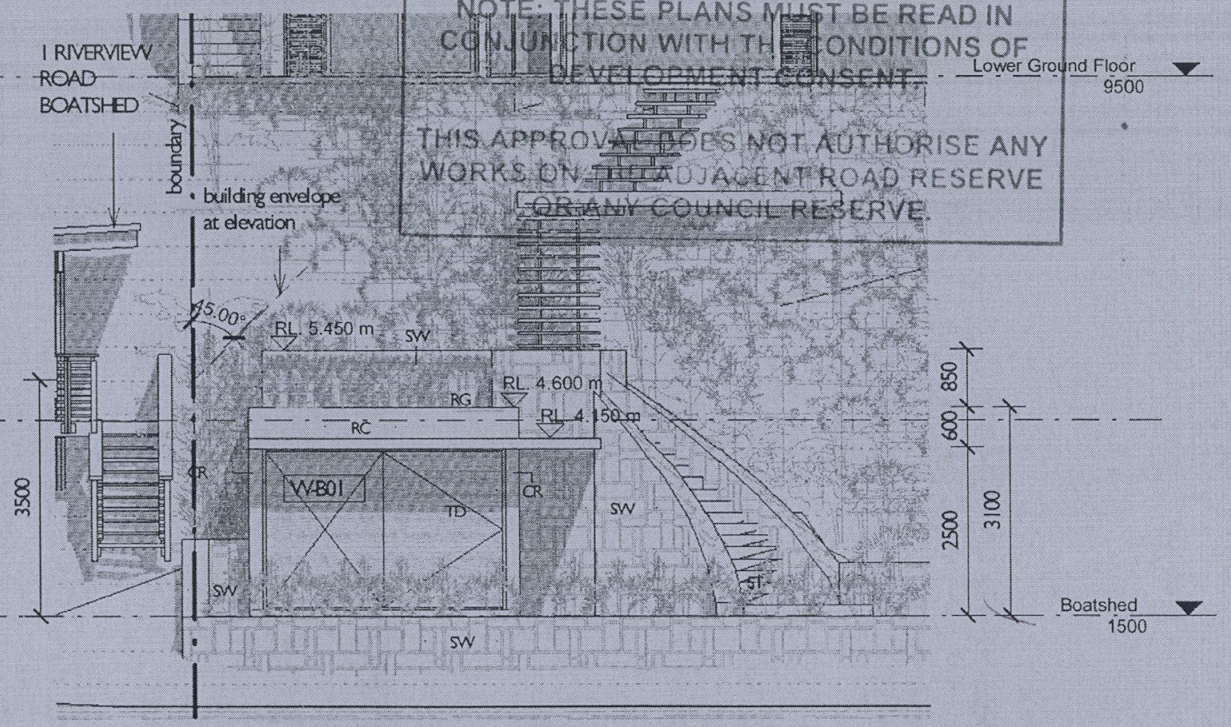


2 Boatshed South Elevation
1 : 100



3 Boatshed West Elevation
1 : 100

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No.	Revision Description	Date
G	Issue to TL for Review	03-04-13
H	Issued for Review	06-09-13
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CLAREVILLE HOUSE
26a HUDSON PARADE CLAREVILLE
NSW 2107
for
Anick Graveline

Boatshed Elevations

Project number	1112	Checked by	Checker
Date	September 2013	Scale	1 : 100
Drawn by	Author		A21

NEW RESIDENCE
26a HUDSON PARADE, CLAREVILLE
for ANICK GRAVELINE

GENERAL

G1 - These drawings are to be read in conjunction with all architectural and other consultants drawings and specifications. Any discrepancies are to be referred to all parties and rectified before proceeding with the works.
G2 - Dimensions shall not be obtained by scaling from these drawings.
G3 - During construction the structure shall be kept in a stable condition and no part shall be over stressed.
G4 - All materials and workmanship are to be in accordance with the current Australian Standards, OH&S requirements, and the by-laws and ordinances of any relevant statutory authority.

FOUNDATIONS

F1 - The foundation material is to be **ROCK 1000KPa** bearing capacity.
F2 -The foundation material is to be **inspected, verified and approved** by a **Geotechnical Consultant** as being in accordance with the above and that it is sound and consistent with minimal possibility of differential settlement across the development.
F3 - Should variable foundation material be encountered the engineer is to be contacted and it is likely all foundations are to be piered to similar material of the greatest bearing capacity and that additional detailing of the foundation reinforcement will be required.
F4 - Any excavation works are to include measures to ensure the temporary and long term stability of any existing structure within its vicinity.
F5 - All foundations shall be a minimum 300mm into the approved material unless otherwise noted.
F6 - Foundation depth dimensions are a minimum only and final depth will be dependent on the adequacy of the bearing material.
F7 - All organic matter and top soil shall be removed from the underside of all slabs and foundations.
F8 - Any soft or questionable excavated areas are to be brought to the attention of the Geotechnical Consultant and may require controlled filling.
F9 - Any filling shall be to the approval of the Geotechnical Consultant and will generally be granular material compacted in not more than 150mm layers to a minimum dry density ratio of 98%.

CONCRETE

C1 - All workmanship and materials shall be in accordance with AS3600.
C2 - Concrete quality shall be verified by tests.
C3 - All concrete shall have a slump of 80mm and maximum aggregate size of 20mm.
C4 - Concrete strength and cover shall be as detailed on the plans.
C5 - Size of concrete members do not include thickness of applied finishes.
C6 - Beam depths are written first and include slab thickness if any.
C7 - No penetrations are to be made to the concrete members without the written approval of the engineer.
C8 - No water is to be added to the concrete prior to placement.
C9 - All construction joints shall be located to the approval of the engineer.
C10 - Fire rating requirements and adequacy is to be reviewed and specified by others.
C11 - All concrete members are to be cured by keeping the surfaces continuously wet for a period of 3 days followed by the prevention of loss of moisture for a further 7 days.
C12 - All concrete elements shall be compacted to form a dense homogenous mass using mechanical vibrators.
C13 - All formwork shall be installed and stripped in accordance with AS3610.
C14 - All formwork is to be free of debris prior to pouring of concrete.
C15 - Exposed finished concrete surfaces (such as polished floors etc) will require additional top reinforcement (SL102) and specialist curing / shrinkage controlling additives as per the concrete suppliers recommendations.
C16 - All parties are to acknowledge that exposed finished concrete surfaces (such as **polished floors** etc) will be **susceptible to cracking.**

REINFORCEMENT

R1 - All reinforcement shall be Grade D500.
R2 - Top reinforcement is to be continuous over supporting elements and lapped between supporting elements only.
R3 - Bottom reinforcement is to be continuous between supporting elements and lapped at supporting elements only.
R4 - Reinforcement is represented diagrammatically only and is not necessarily shown in its true projection.
R5 - Welding of reinforcement is not permitted.
R6 - All reinforcement shall be supported on bar chairs at max 750mm spacing.
R7 - Reinforcement shall be tied at alternate intersections.
R8 - Reinforcement bars are to lap a minimum length equal to 40 times the bar diameter (ie min 480mm for N12 bars, 640mm for N16 bars) .
R9 - Reinforcement fabric is to lap 1 complete square plus 25mm.

MASONRY

M1 - All workmanship and materials shall be in accordance with AS3700.
M2 - An approved slip joint material is to be placed over all load bearing masonry supporting a concrete slab and laid on smooth brick work or a trowed mortar finish, this material may constitute two layers of greased metal.
M3 - Masonry shall be constructed on suspended concrete structures only after all propping has been removed and the concrete has achieved its specified strength.
M4 - Control joints are to be placed in all walls at a maximum of 8m centres and between new and existing structures or closer as deemed necessary by the engineer. The joints are to be 10mm wide and sealed with an approved flexible sealant, with ties at 600mm centres vertical.
M5 - Concrete blocks shall have a minimum compressive strength of 15 MPa.
M6 - Core filling shall be 20 MPa concrete with 10mm aggregate, 230mm slump and compacted adequately.
M7 - Concrete blocks used in retaining wall construction are to be Double Web H blocks.
M8 - Maximum pour height for unrestrained blockwork is 1.8m.
M9 - All masonry components are to be tied at not more than 600mm centres to adjacent steel or concrete columns.

STEEL

S1 - All workmanship and materials shall be in accordance with AS4100.
S2 - Hot rolled plates shall comply with AS 3678.
S3 - Hot rolled sections shall comply with AS3679.
S4 - Cold formed sections shall comply with AS4600.
S5 - Welded and seamless hollow sections shall comply with AS1163.
S6 - Unless noted otherwise all welds shall be 6mm continuous fillet from E4xx electrodes, unless noted otherwise.
S7 - Unless noted otherwise all bolts shall be M16 high strength structural bolts grade 8.8, snug tightened, uno.
S8 - Unless noted otherwise all connections shall be 3M16 bolts, 10mm plate and 6mm continuous weld.
S9 - All structural steel work shall have the following level of corrosion protection (coatings listed below by *ORICA Australia p/l* maybe substituted with a certified equivalent) All coatings/finishes shall be applied in accordance with the manufacturers specifications and recommendations including surface preparation.
Internal elements
not visible - a single coat (75 microns) of Zincanode 402.
visible - a first coat (75 microns) of Zincanode 402 and a second coat (100 microns) of Weathermax HBR.
External elements (> 100m from waterfront including members with an external cavity or within 1m of a significant opening)
not visible - a first coat (75 microns) of Zincanode 402 and a second coat (200 microns) of Duremax GPE MIO
or Hot Dipped Galvanised to AS 4680.
visible - a first coat (75 microns) of Zincanode 402 and a second coat (200 microns) of Duremax GPE MIO and a third coat (100 microns) of Weathermax HBR
or Hot Dipped Galvanised to AS 4680 and a decorative coating.
External elements (marine environment ie < 100m from waterfront)
Specialist specification from paint manufacturers is to be applied to all members
S10 - All work shop drawings are to be reviewed and approved by the Engineer.

TIMBER

T1 - All workmanship and materials shall be in accordance with AS1720 and AS1684.
T2 - All exposed timber shall be H3 treated or of durability class 1.
T3 - All timber in contact with the ground shall be H4 treated or of durability class 1.
T4 - All exposed cuts shall be treated to achieve H3 or H4 requirements.
T5 - All softwood shall be minimum F7.
T6 - All hardwood shall be a minimum F14.
T7 - All bolt hole s shall be exact size and washers shall be 2.5 x the bolt diameter.

DESIGN LIFE OF THE STRUCTURE

D1 - The design life of all elements as specified within these documents correspond to that equired by the Building Code
of Australia and the relevant Australian Standard.
D2 - The Design Life of elements relevant to slope stability maybe extended to that required by Pittwater Councils Interim Risk Management Policy by the implementation of a rigorous maintenance and inspection schedule together with additional concrete strength and cover specifications as detailed within these plans.

DESIGN WIND SPEED

Wind loads are in accordance with AS 1170 as follows :
Basic wind velocity = 41 m/s

INSPECTIONS

I1 - Barrenjoey Consulting Engineers shall only inspect works within its capacity as an Engineering Consultancy and will not carry out Mandatory Critical Stage Inspections.
I2 - Barrenjoey Consulting Engineers will not inspect or certify foundation material adequacy, see F2.
I3 - All inspections are to be carried out at the request of the projects Principal Certifying Authority, or should independent certification be required at the request of the client or builder.
I4 - Typical inspections include -
- Foundation reinforcement
- Slab on ground reinforcement
- Suspended concrete reinforcement
- Steel and Timber structures
- Completed Stormwater Management systems

I5 - The client shall be responsible for any fees for inspections regardless of whom requested them.
I6 - All re inspection required due to no compliance with issued drawings or that deemed necessary by Barrenjoey Consulting Engineers shall be charged to the client.
I7 - No certification will be given for works not inspected by Barrenjoey Consulting Engineers.
I8- 48 Hrs notice is required for any inspection within the Sydney region and 72 Hrs notice is required for any inspection outside of this region.

DRAWING SCHEDULE

0 1 2 3 4 5

ISSUED FOR

CONSTRUCTION CERTIFICATE

FURTHER DETAILING TO BE ADDED

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR CONSTRUCTION CERTIFICATE SUBMISSION	A.C.W.	L.M.	13-02-14

Barrenjoey Consulting Engineers Pty Ltd
Stormwater Structural Civil
PO Box 672
Avalon nsw 2107
P : 9918 6264 F : 9918 5841
M : 0418 620 330
E : lucasbce@bigpond.com
ABN : 13 124 694 917
ACN : 124 694 917

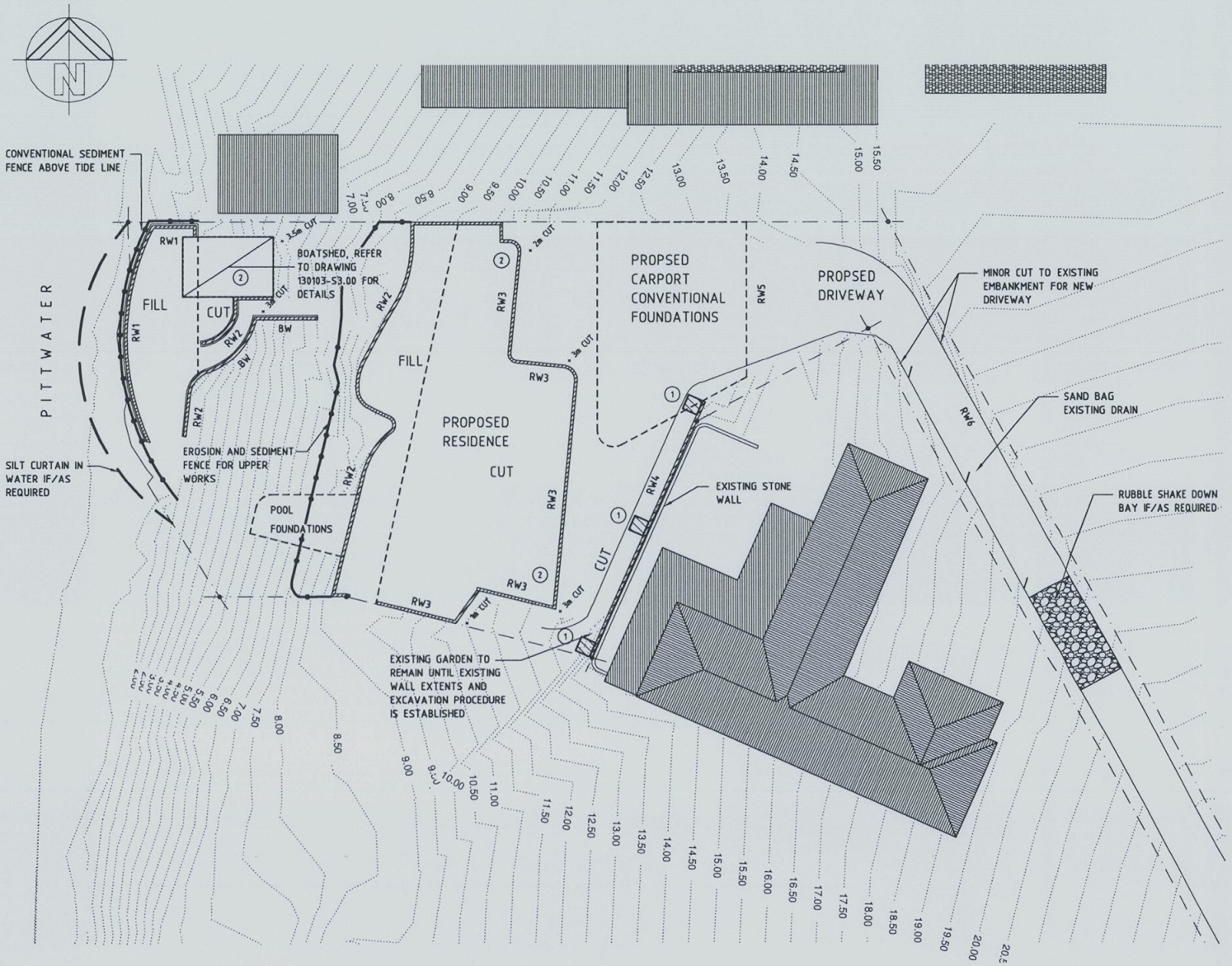
Project :
NEW RESIDENCE
26a HUDSON PARADE
CLAREVILLE
for ANICK GRAVELINE

Drawing :
CONSTRUCTION NOTES AND
DRAWING SCHEDULE

Job No : 130103

Drawing No : S1.00 01

Document certification
Barrenjoey Consulting Engineers Pty Ltd
PER
Lucas Molloy MIEA CPEng NPER Director



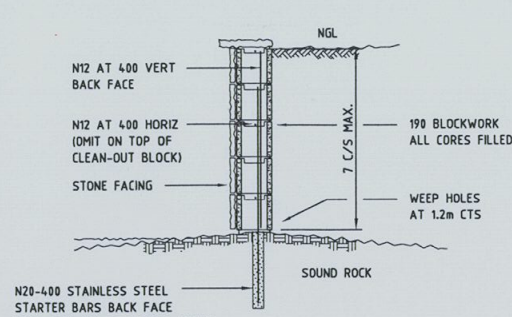
CIVIL WORKS PLAN

SCALE 1:200

NOTE :
BW - 190 BLOCKWORK WALL
RW1 - 190 BLOCKWORK WALL WITHIN TIDAL ZONE
RW2 - 190 BLOCKWORK WALL ABOVE TIDAL ZONE
RW3 - 190 / 290 BLOCKWORK WALL
RW4 - TBC UPON EXPOSURE AND REVIEW OF EXISTING
RW5 - 190 BLOCKWORK WALL REFER S5.01 (TO FUTURE DETAIL
RW6 - 190 BLOCKWORK WALL REFER S6.01 (TO FUTURE DETAIL

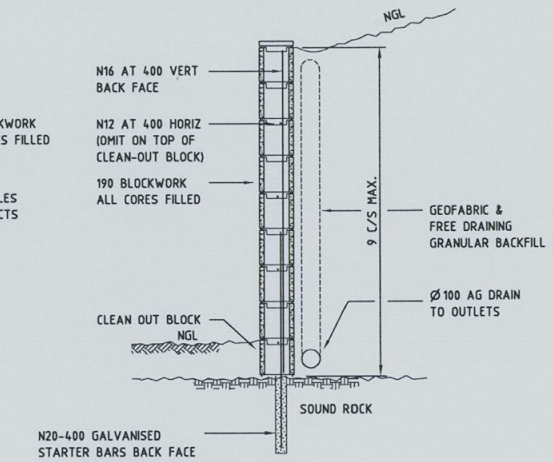
① - FOLLOWING THE DEMOLITION OF THE EXISTING RESIDENCE, EXCAVATE 1m WIDE TRENCH AND EXPOSE EXTENT OF EXISTING WALL FOUNDATION TO DETERMINE NEW WORKS. NO MASS EXCAVATION TO BE CARRIED OUT UNTIL APPROVED BY THE GEOTECHNICAL AND CIVIL CONSULTANTS.

② - FOLLOWING THE DEMOLITION OF THE EXISTING RESIDENCE, A 1m WIDE TRENCH IS TO BE CUT TO EXPOSE THE SUBSTRATA FOR THE GEOTECHNICAL AND CIVIL CONSULTANTS TO REVIEW AND SPECIFY THE FULL EXCAVATION PROCEDURE.



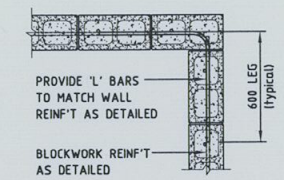
RETAINING WALL RW1

NOTE : 1.4m MAX WALL HEIGHT
WORKS BELOW MHWM

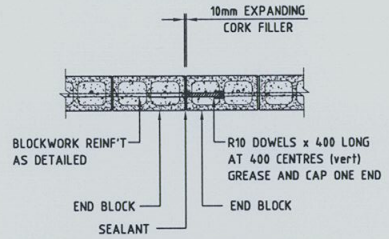


RETAINING WALL RW2

NOTE : 1.8m MAX WALL HEIGHT
WORKS ABOVE MHWM

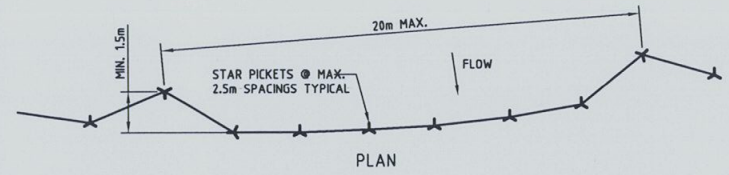


TYPICAL BLOCKWORK CORNER DETAIL

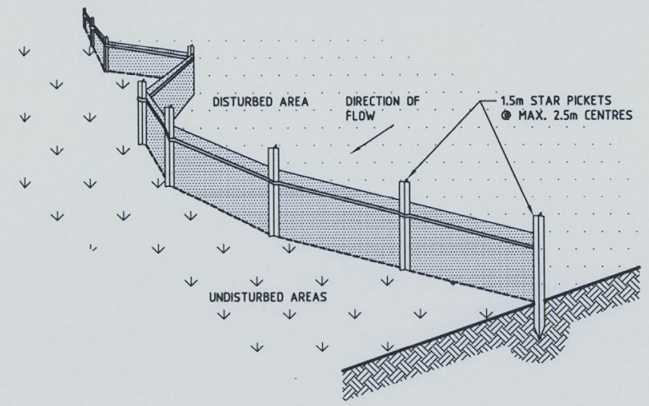


TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT

UNLESS OTHERWISE NOTED ON PLAN
JOINTS SHALL BE LOCATED AT 8000 CENTRES max.

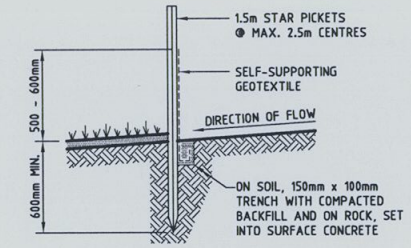


PLAN



SEDIMENT FENCE

SCALE N.T.S.



SECTION DETAIL

SEDIMENT FENCE CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

0 1 2 3 4 5

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ACN : 124 694 917

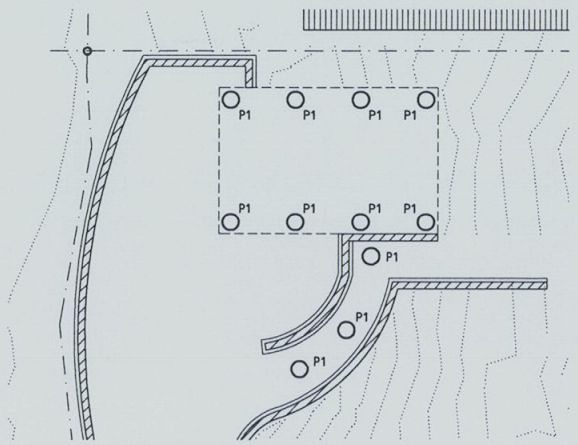
Project :
NEW RESIDENCE
26a HUDSON PARADE
CLAREVILLE
for ANICK GRAVELINE

Drawing :
CIVIL WORKS PLAN
AND DETAILS

Job No : 130103

Drawing No : S2.00 01

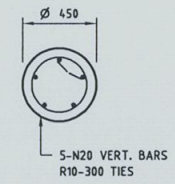
Document certification
Barrenjoey Consulting Engineers Pty Ltd
PER
Lucas Molloy MIEA CPEng NPER Director



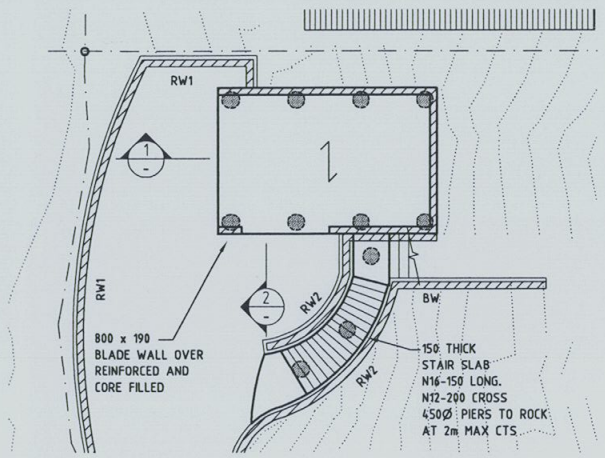
BOATSHED FOOTING PLAN

NOTE :

PIERS P1 450Ø CONCRETE PIER
SOCKETED 200 OR DOWELLED
(4-N20 STAINLESS STEEL) INTO ROCK
F'c = 40 MPa 50mm COVER

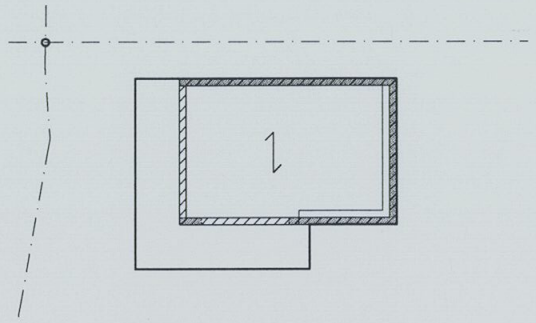


TYPICAL PIER SECTION



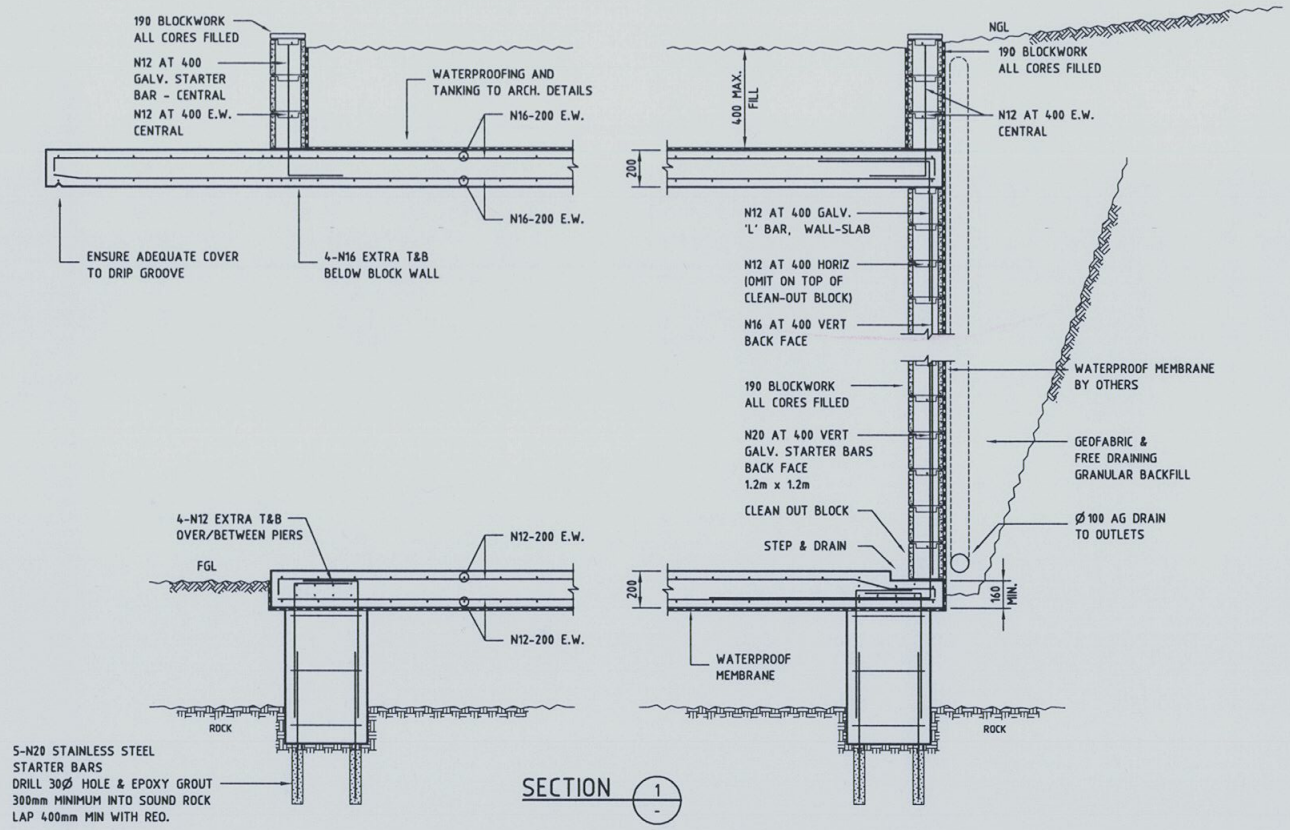
BOATSHED GROUND FLOOR SLAB PLAN

NOTE :
200 THICK SLAB UNO, F'c = 40 MPa
30mm INTERNAL COVER 45mm EXTERNAL
COVER SLAB REINFORCED WITH N12-200 E.W.
TOP & BTM

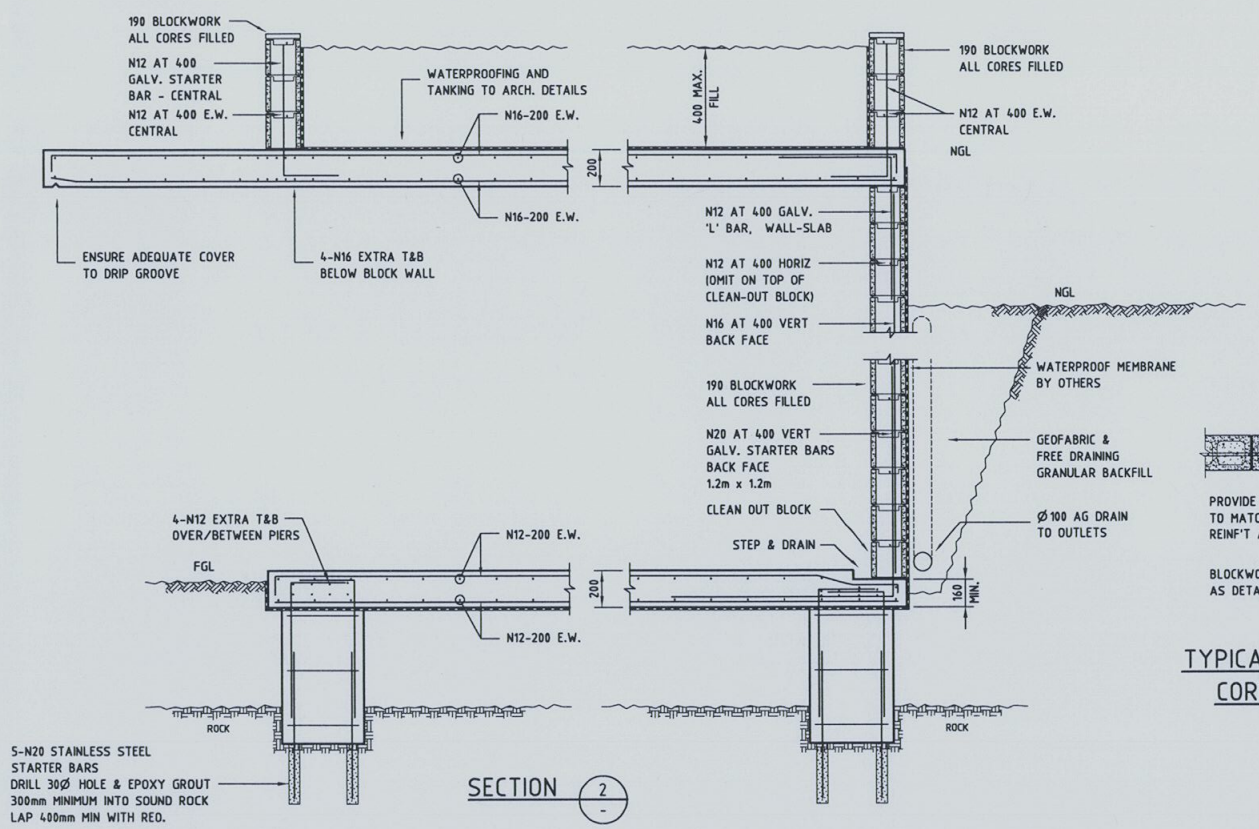


BOATSHED ROOF SLAB PLAN

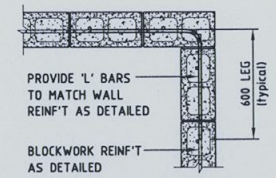
NOTE :
200 THICK SLAB UNO, F'c = 40 MPa
30mm INTERNAL COVER 45mm EXTERNAL
COVER SLAB REINFORCED WITH N16-200 E.W.
TOP & BTM



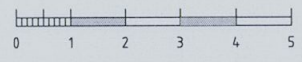
SECTION 1



SECTION 2



TYPICAL BLOCKWORK CORNER DETAIL



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Project :

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CLAREVILLE
for ANICK GRAVELINE

Drawing :

BOATSHED PLANS AND
DETAILS

Job No : 130103

Drawing No : S3.00 01

Document certification
Barrenjoey Consulting Engineers Pty Ltd

PER
Lucas Molloy MIEA CPEng NPER Director

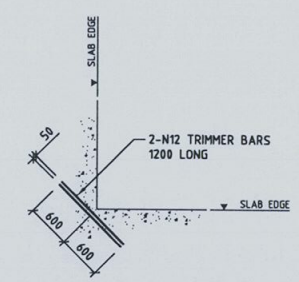
X NOT APPROVED ON CC 140018 DATED

RETAINING WALLS APPROVED ON CC 140018 DATED

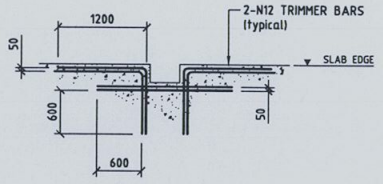
LOWER GROUND FLOOR SLAB PLAN

NOTE :
ALL SLABS SHALL BE 130 THICK PLACED ON A WATERPROOF MEMBRANE OVER A 30mm SAND BLINDING UNO.
ALL SLABS SHALL BE REINFORCED WITH SL102 FABRIC TOP UNO.
CONCRETE STRENGTH F'c=32MPa
600mm DOWNTURN TO ROCK ALL ROUND
(ALT. 600 x 450 AND 450Ø PIERS AT 1.5m CTS)
30mm COVER INT. 65mm COVER EXT. 50mm GROUND COVER

GB1 TO GB3 - 450 MIN. x 600 DOWNTURN BEAMS
RW3 - BLOCK RETAINING WALL
P1 - 600Ø PIER TO ROCK (SC1 OVER)

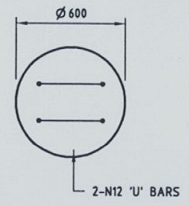


RE-ENTRANT CORNER - INTERNAL

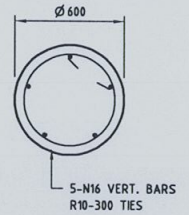


EDGE PENETRATION

TYPICAL TRIMMING DETAILS

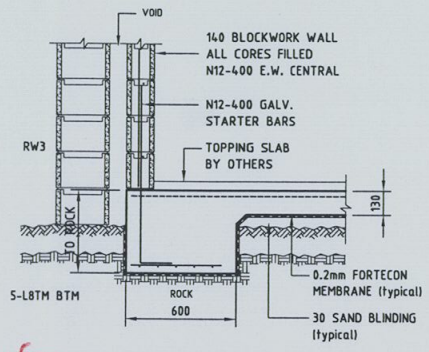


IF PIER ≤ 1.0m IN DEPTH

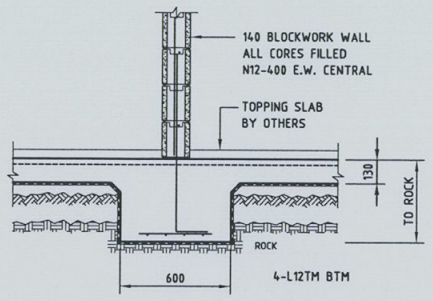


IF PIER ≥ 1.0m IN DEPTH
INCREASE REINF. TO 5-N20 BARS IF > 2.0m IN DEPTH

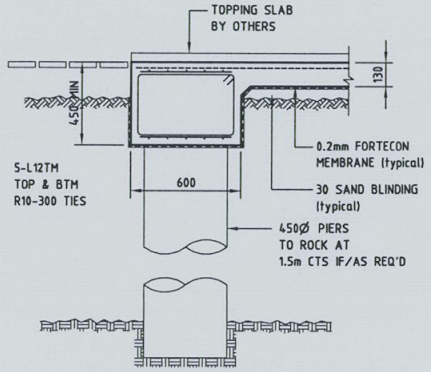
TYPICAL PIER SECTION



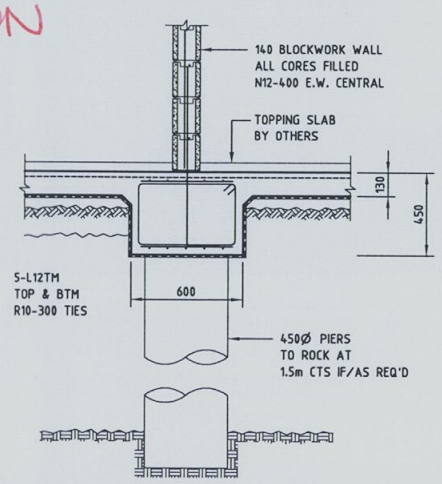
GB1 DETAIL



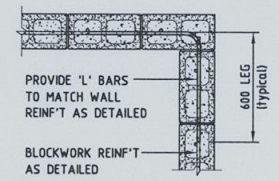
GB2 DETAIL



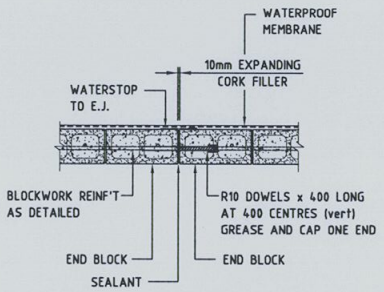
GB3 DETAIL



ALTERNATE GB2 DETAIL

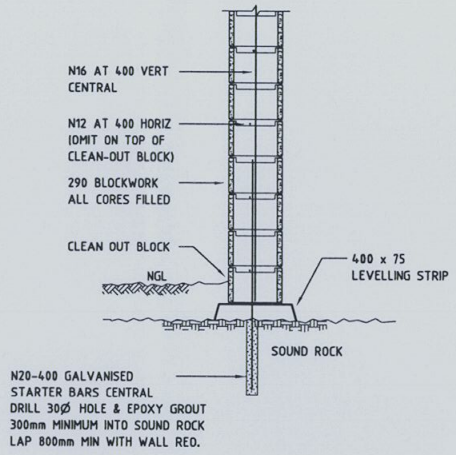


TYPICAL BLOCKWORK CORNER DETAIL

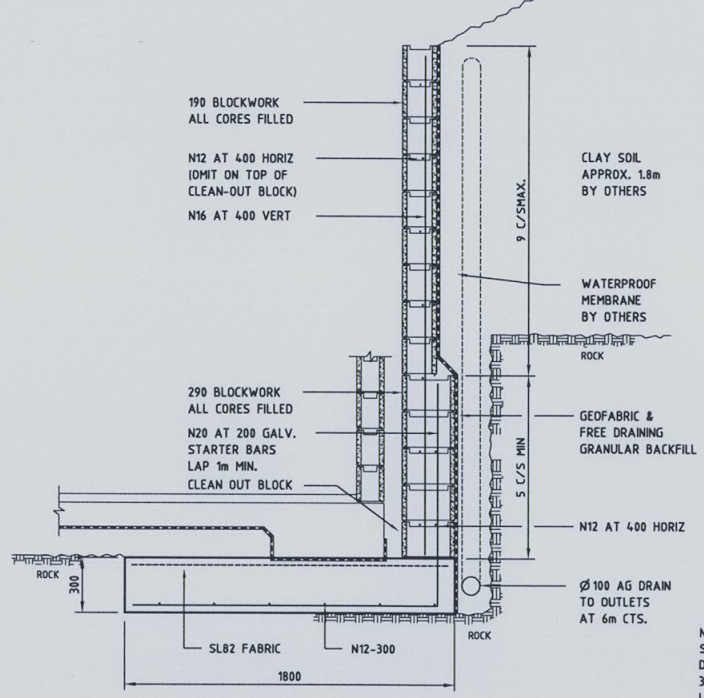


TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT

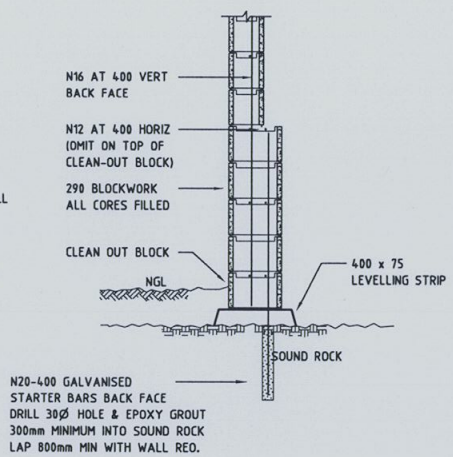
UNLESS OTHERWISE NOTED ON PLAN JOINTS SHALL BE LOCATED AT 8000 CENTRES max.



BW1 DETAIL - POOL SUPPORT WALL



TYPICAL RETAINING WALL RW3 DETAIL



ALTERNATE RW3 DETAIL

0 1 2 3 4 5

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Project :
NEW RESIDENCE
26a HUDSON PARADE
CLAREVILLE
for ANICK GRAVELINE

Drawing :
LOWER GROUND FLOOR SLAB
PLAN AND DETAILS

Job No : 130103

Drawing No : S4.00 01

Document certification
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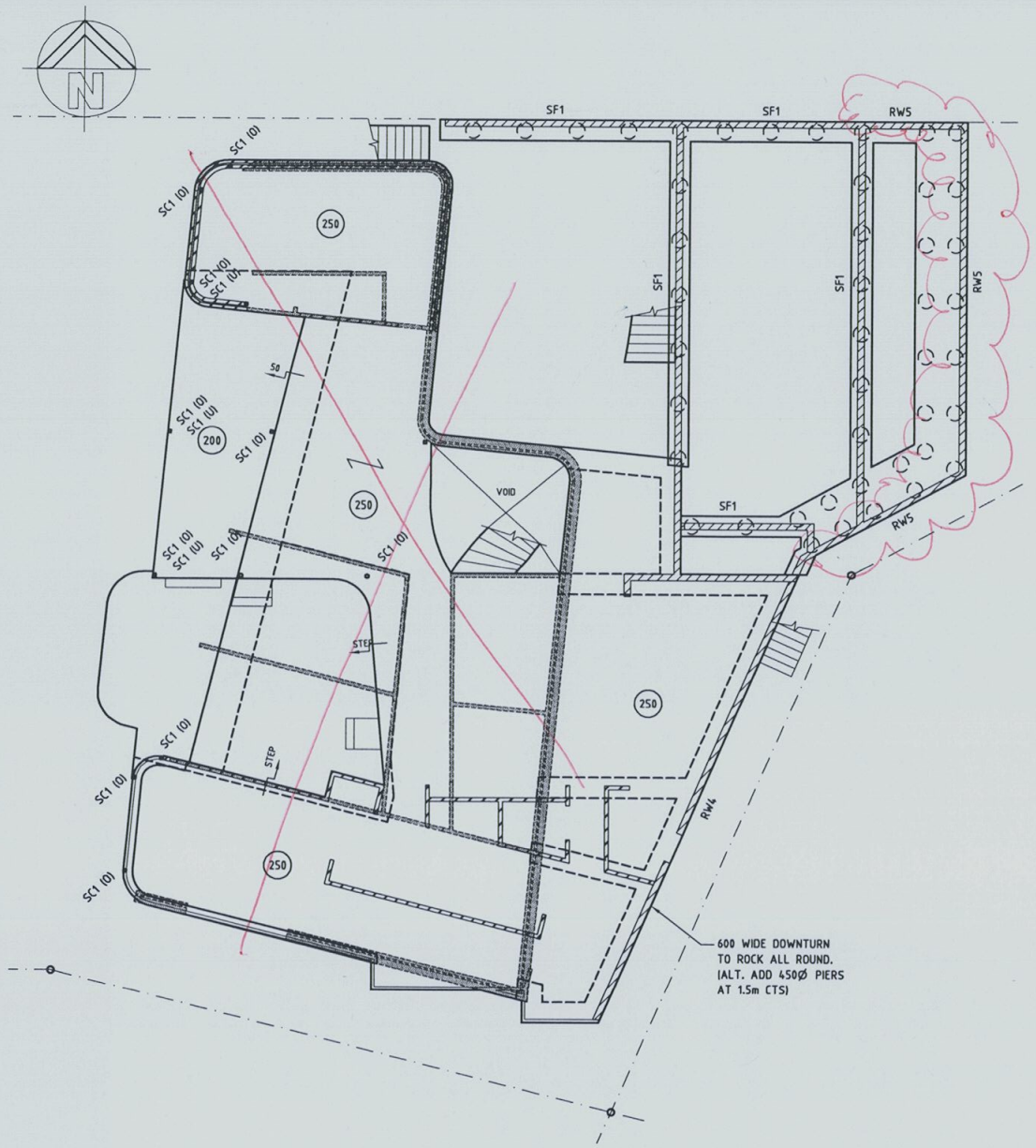
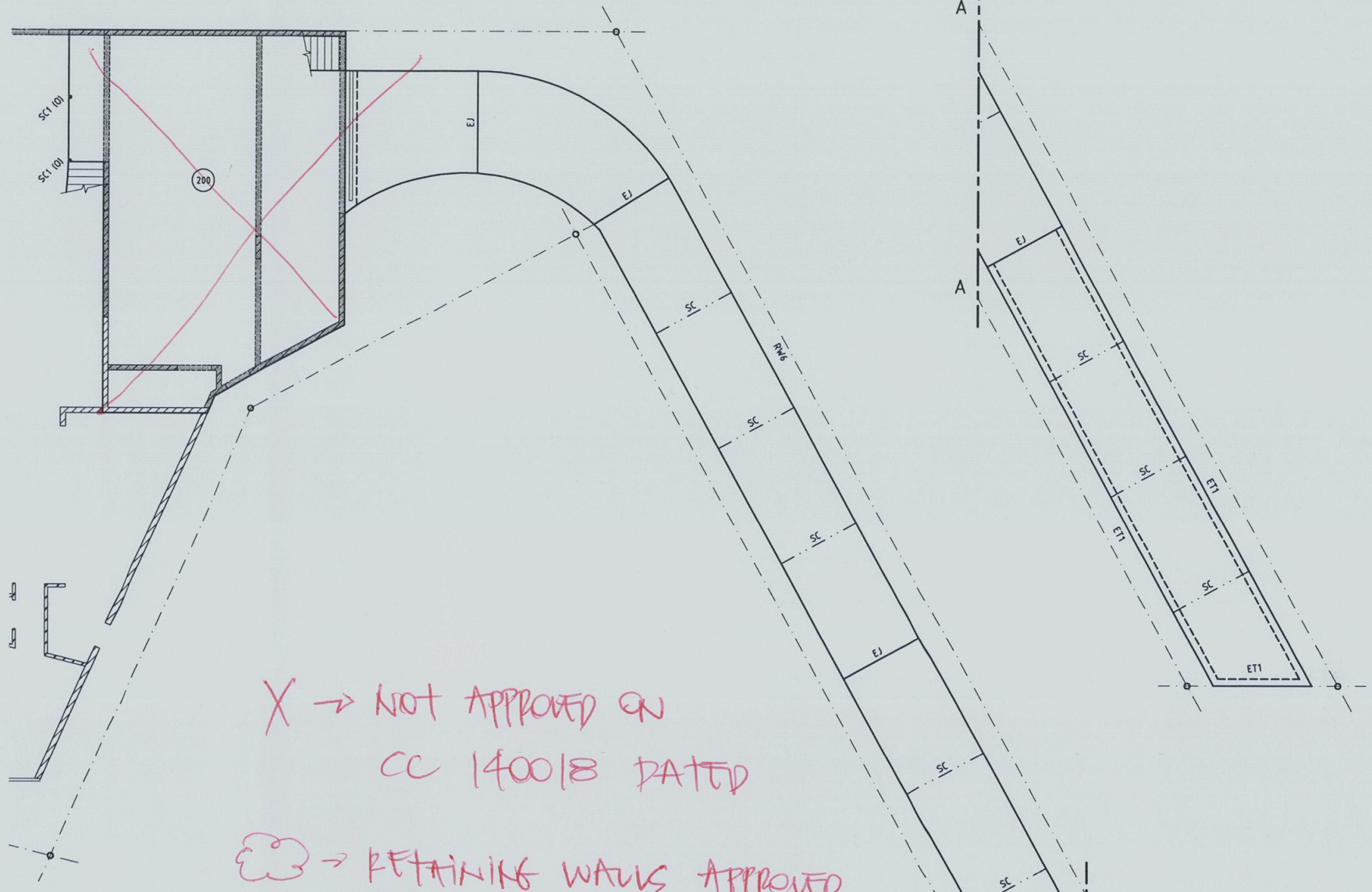
PER
Lucas Molloy MIEA CPEng NPER Director





X → NOT APPROVED ON CC 140018 DATED

→ RETAINING WALLS APPROVED ON CC 140018 DATED

GROUND FLOOR SLAB PLAN

NOTE :

200 MIN THICK SLAB UNO. F'c = 40 mPa
30mm INTERNAL COVER 45mm EXTERNAL COVER

ADDITIVES - THE CONCRETE SLAB IS TO INCLUDE A SHRINKAGE COMPENSATING ADDITIVE SUCH AS 'TETRAGUARD AS21' AT RATE OF 8 l/m³ OF WATER OR EQUIVALENT

SLAB REINFORCED WITH N16-200 E.W. TOP & BTM.

DENOTES SPAN DIRECTION FOR SLAB PRIMARY REINFORCEMENT

(250) DENOTES SLAB THICKNESS

(C1) 400 x 300 CONCRETE COLUMN UNDER

BW 190 BLOCKWORK WALL REINFORCED AND CORE FILLED AND SLIP JOINT TO SLAB OVER

SC1 (U) 89 x 6.0 SHS UNDER, GALVANISED

SC1 (O) 89 x 6.0 SHS OVER, GALVANISED

P1 (U) 450Ø PIERS TO ROCK

SF1 450 x 600 STRIP FOOTING (+ 450Ø PIERS TO ROCK IF/AS REQUIRED)

DRIVE AND GARAGE SLAB PLAN

NOTE : GARAGE SLAB

200 MIN THICK SLAB UNO. F'c = 40 mPa
30mm INTERNAL COVER 45mm EXTERNAL COVER

ADDITIVES - THE CONCRETE SLAB IS TO INCLUDE A SHRINKAGE COMPENSATING ADDITIVE SUCH AS 'TETRAGUARD AS21' AT RATE OF 8 l/m³ OF WATER OR EQUIVALENT

SLAB REINFORCED WITH N16-200 E.W. TOP & BTM.

DENOTES SPAN DIRECTION FOR SLAB PRIMARY REINFORCEMENT

(250) DENOTES SLAB THICKNESS

(C1) 400 x 300 CONCRETE COLUMN UNDER

BW 190 BLOCKWORK WALL REINFORCED AND CORE FILLED AND SLIP JOINT TO SLAB OVER

SC1 (O) 89 x 6.0 SHS OVER, GALVANISED

P1 (U) 450Ø PIERS TO ROCK

NOTE : DRIVEWAY SLAB
ALL SLABS SHALL BE 130 THICK PLACED ON A WATERPROOF MEMBRANE OVER A 30mm SAND BLINDING UNO.

ALL SLABS SHALL BE REINFORCED WITH SL92 FABRIC TOP UNO.

ET1 - SLAB DOWNTURNS
RW6 - 190 BLOCKWORK RETAINING WALL
EJ - EXPANSION JOINT
SC - SAWCUT

0 1 2 3 4 5

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CLAREVILLE
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Drawing :

GROUND FLOOR AND GARAGE
SLAB PLANS

Job No : 130103

Drawing No : S5.00 01

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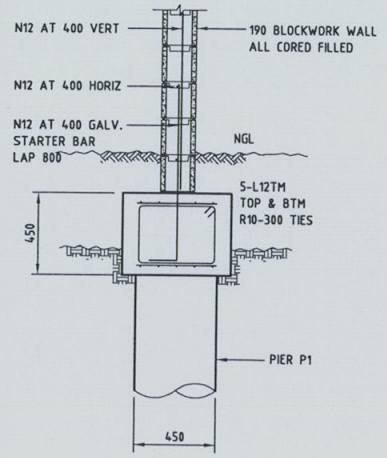
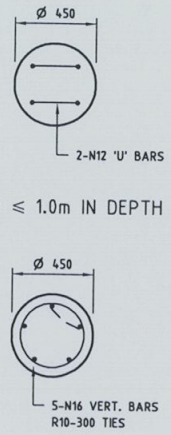
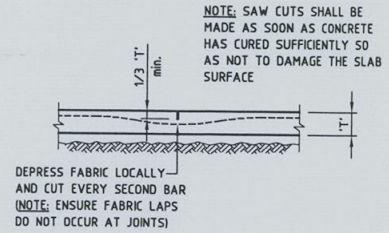
Lucas Molloy MIEA CPEng NPER Director



TYPICAL STRIP FOOTING SF1 DETAIL

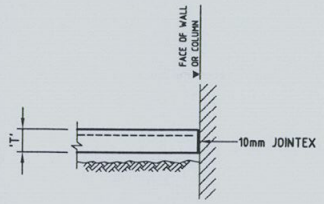


TYPICAL PIER SECTION



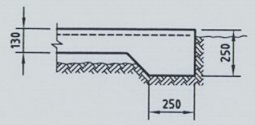
SAW CUT JOINT

NOTED SC ON PLAN

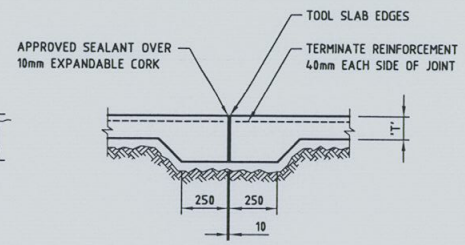


ISOLATION JOINT

TYPICAL AT ALL WALLS AND COLUMNS
SCALE 1:20

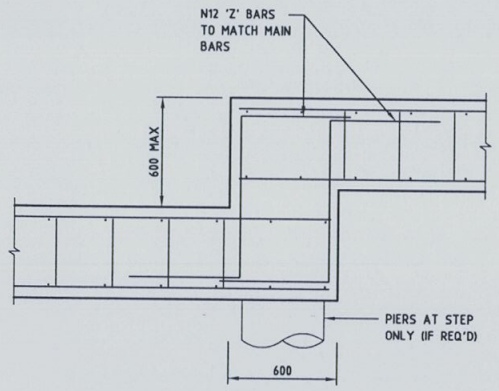


EDGE BEAM TYPE 'ET1'

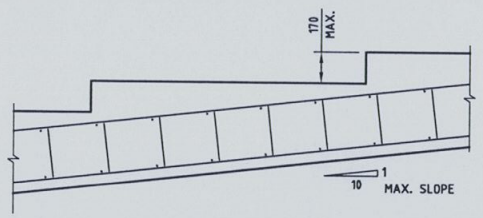


EXPANSION JOINT

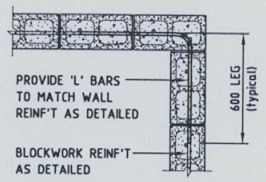
NOTED EJ ON PLAN
SCALE 1:20



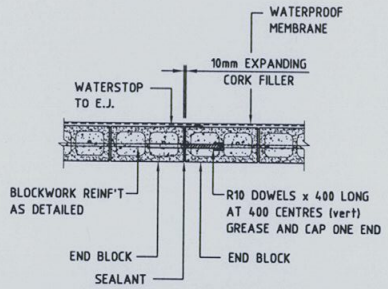
TYPICAL FOOTING STEP DETAIL



TYPICAL STRIP FOOTING ON SLOPE

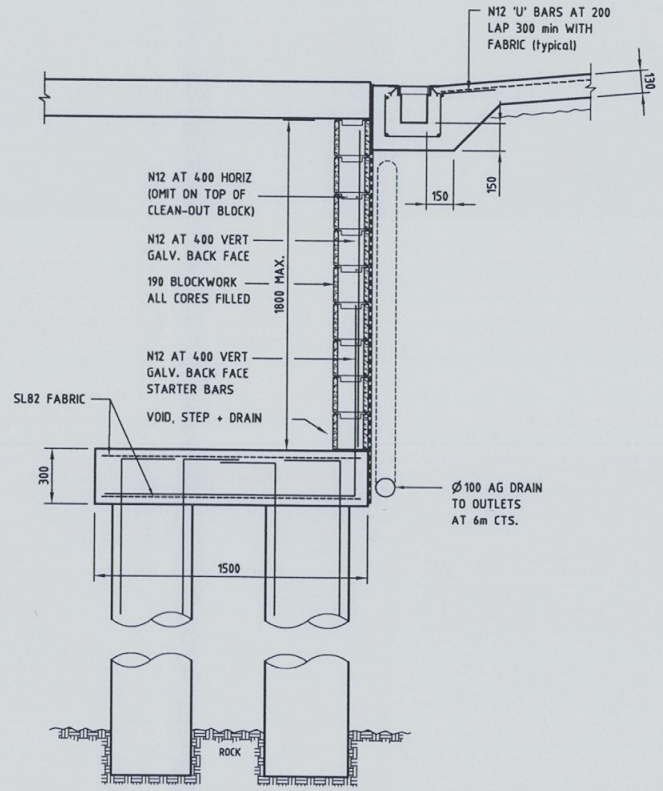


TYPICAL BLOCKWORK CORNER DETAIL

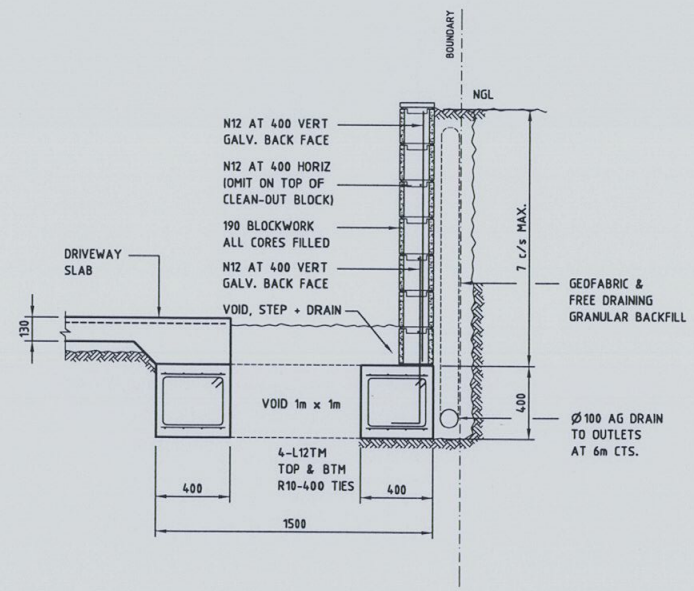


TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT

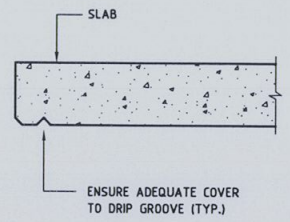
UNLESS OTHERWISE NOTED ON PLAN
JOINTS SHALL BE LOCATED AT 8000 CENTRES max.



TYPICAL RETAINING WALL RW5 DETAIL

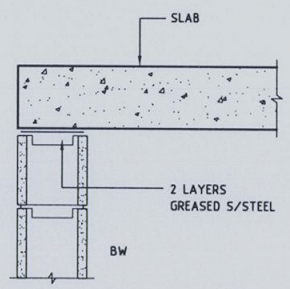


RETAINING WALL RW6 DETAIL



TYPICAL EXPOSED EDGE DETAIL

SCALE 1:10



TYPICAL SLIP JOINT DETAIL

SCALE 1:10

ISSUED FOR CONSTRUCTION CERTIFICATE

FURTHER DETAILING TO BE ADDED

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR CONSTRUCTION CERTIFICATE SUBMISSION	A.C.W.	L.M.	13-02-14

Barrenjoey Consulting Engineers Pty Ltd
Stormwater Structural Civil
PO Box 672
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P : 9918 6264 F : 9918 5841
M : 0418 620 330
E : lucasboe@bigpond.com
ABN : 13 124 694 917
ACN : 124 694 917

Project :

NEW RESIDENCE
26a HUDSON PARADE
CLAREVILLE
for ANICK GRAVELINE

Drawing :

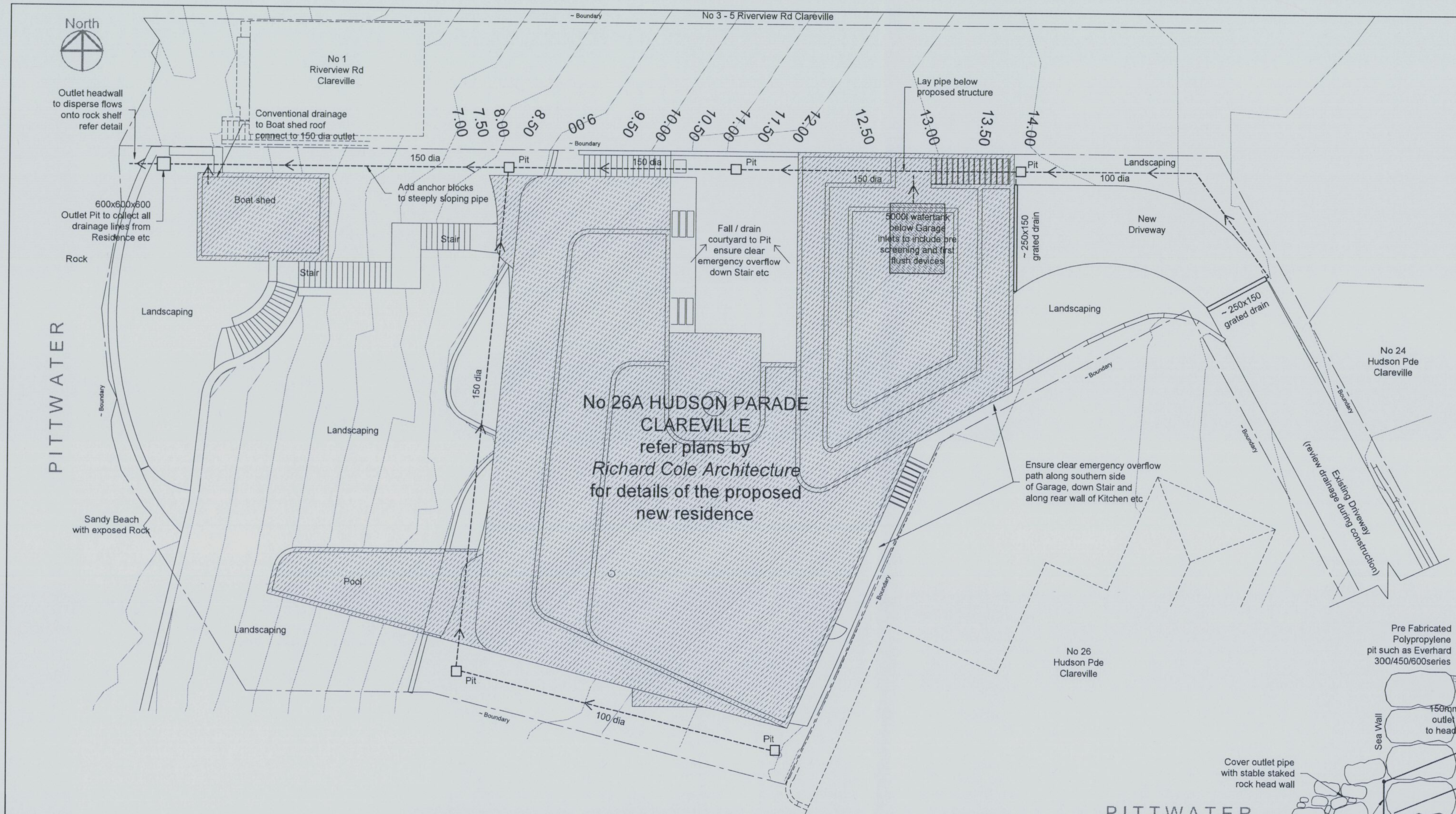
GROUND FLOOR DETAILS

Job No : 130103

Drawing No : S5.01 01

Document certification
Barrenjoey Consulting Engineers Pty Ltd

PER
Lucas Molloy MIEA CPEng NPER Director



STORMWATER MANAGEMENT PLAN

~ 1:100

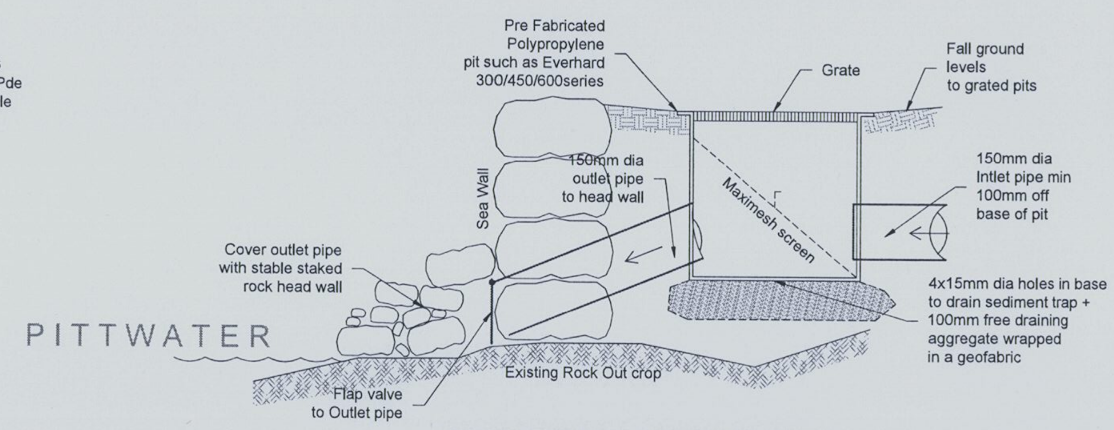
ALL DRAINAGE / RUNOFF FROM THE PROPOSED DRIVE / RESIDENCE AND IMMEDIATE SURROUNDS IS TO BE DIRECTED TO THE CONVERTOR PIT ON THE LOWER WESTERN BOUNDARY ADJACENT TO THE SEAWALL FRONTING PITTWATER .

INDICATIVE TRUNK DRAINAGE SYSTEM SHOWN ABOVE. THIS SYSTEM ALONG WITH THE DETAILING OF THE ROOF DRAINAGE DESIGN IS TO BE DETAILED BY THE HYDRAULIC CONSULTANT / PLUMBING CONTRACTOR WITH THE CONSTRUCTION CERTIFICATE / TENDER DOCUMENTATION.

Pit - 450x450x450 to drain courtyards etc

STORMWATER NOTES

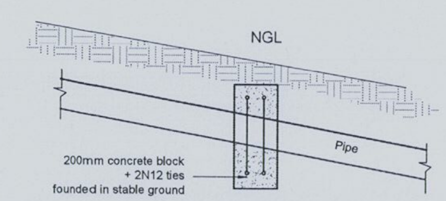
1. All roof collection components (ie slab drainage, rain heads, gutters, DPs etc) are to be located / sized by the contracting Plumber for a 5% AEP event capacity. All Trunk Drainage pipes as shown on this plan to be minimum of 150mm dia uno.
2. All pipes to be uPVC to AS 1254:2002.
3. All pipes to be laid at the grade required to match pit invert levels.
4. All pipes to be installed and laid in accordance with AS 3500.3:2003, including the installation of anchors blocks if the pipe slope is > 1V to 5H.
5. All roof guttering/ down pipes / valley gutters / box gutters etc are to be sized and installed in accordance with AS 3500.3:2003.
6. All pits are to be proprietary uv resistant polypropylene or similar unless noted (approved by the Engineer)and are to include a min 50mm sediment trap in the base and a maximesh screen laid at 45' across the pit to protect the oulet pipe .
7. All pits greater than 600mm in depth are to be proprietary precast concrete (approved by the Engineer).
8. All pits greater than 1000mm in depth are to have adequate access requirements in accordance with OH&S/Workcover requirements (ie; minimum dimensions 900x900mm with step irons).
9. All works are to be inspected and certified by the Principle Certifying Authority prioir to backfilling.
10. All works requiring certification by the Engineer will require a works as executed survey prepared by a registered Surveyor detailing all levels etc as on the Engineering plans.
11. The system is too be flushed and cleaned of all sediment and debris annually.
12. The system will require regular cleaning and maintenance to ensure its ability to function is maintained.
13. To ensure the system's ability to function is maintained it is to be inspected and certified as operating effectively by a licensed plumber every 5 years, and a engineer every 20yrs.
14. All existing predevelopment catchment area run-off conditions exiting the site are to be maintained with no run-off flows being diverted from the predevelopment condition.



OUTLET PIT / PIPE DETAIL

~ 1:10

as per *Water Management Act 2000 Guidelines for controlled activities - Outlet structures*



ANCHOR BLOCK DETAIL

TO BE INSTALLED AT 6m CTS IF PIPE SLOPE > 1V TO 5H

Issue	Date	
Prelim	30th Jan 2013	Issued for comment
	11th Sept 2013	Issued for DA submission
CC	13th Feb 2014	Issued for Construction Certificate submission

Barrenjoey Consulting Engineers pty ltd

PROJECT:
PROPOSED
NEW RESIDENCE
26A HUDSON PARADE
CLAREVILLE
for ~ T. LUEDECKE & A. GRAVELINE

DRAWING :
STORMWATER
MANAGEMENT
PLAN

Job No : 130103

Drawing No : SW1 CC

Paper size A1

Document Certification
Barrenjoey Consulting Engineers pty ltd
per
Lucas Molloy MIEA CPEng NPER Director

PRELIMINARY

1 RIVERVIEW ROAD BOATSHED

SEDIMENT FENCE

SB1

SB2

SD.345

SEDIMENT FENCE

FILL AREA

CUT AREA

FILL AREA

5000L inground water tank

ACCESS

26A HUDSON PARADE

SSP 2

SSP 2

PITTWATER

SEDIMENT FENCE
LOT 1
DP 1186229

existing 2 storey brick veneer cottage to be demolished

CUT AREA

FORESHORE BUILDING LINE

LOT C
DP 377157

MEAN HIGH WATER MARK BY DP260209

SEDIMENT FENCE

LOT 5
DP 260209

T 2
48857

26 HUDSON PARADE

24 HUDSON PARADE

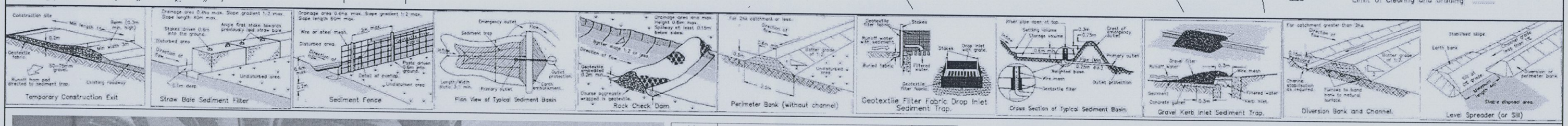
TEMPORARY CONSTRUCTION EXIT

N

Sediment Control Plan
1 : 250

LEGEND

- Perimeter Bank
- Diversion Bank
- Level Spreader
- Waterway — natural grassed
  - constructed grassed
  - constructed grass with check dam
- Sediment Basin
- Sediment Trap
- Sediment Fence
- Straw Bale Sediment Filter
- Catchment Boundary
- Vegetative Filter Strip
- Cut Area
- Fill Area
- Soil Stock Pile
- Temporary Construction Exit
- Limit of Clearing and Grading



richard cole architecture

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nominated architect : Richard Cole B.Sc(Arch) (Hons 1) B.Arch(Hons1) Reg No: 6520

No.	Revision Description	Date
G	Issue to TL for Review	03-04-13
H	Issued for Review	06-09-13
I	Issued for DA	10/09/13

CLAREVILLE HOUSE

26a HUDSON PARADE CLAREVILLE
NSW 2107
for
Anick Graveline

Sediment Control Plan

Project number	1112	Checked by	Checker
Date	September 2013	Scale	1 : 250
Drawn by	Author		A22

G	Issue to TL for Review	03-04-13
H	Issued for Review	06-09-13
I	Issued for DA	10/09/13

PRELIMINARY

CS	Concrete Slab
DR	Driveway
HWS	Solar Hot Water System
MR	Membrane Roof
PL	Pool
PV	Photovoltaic Panels
RC	Reinforced Concrete
RG	Roof Garden
SK	Skylight
ST	Stair
SW	Stone Wall
TR	Turf

3-5 RIVERVIEW ROAD

RIVERVIEW ROAD BOATSHED

PITTWATER

nom. 18441

12665

9900

nom. 9444 setback

nom. 6095 access corridor to boatshed

1000 setback

exg tree #8

exg tree #7 to be removed

roof vegetable garden

26A HUDSON PARADE

exg tree #9

RL 2.300 m

exg tree #11

exg tree #10

Foreshore Building Line

boundary 12.915

roof garden

outline of existing house

existing hedge

boundary 17.125

roof garden

exg tree #4

exg tree #3

boundary 60.58

boundary 52.560

Avalon Sailing Club

boundary 8.37 right of way

boundary 16.98

900 setback

10135 setback

5000

9640

SYDNEY WATER APPROVED

26 HUDSON PARADE

1. Position of structure in relation to Sydney Water's assets is satisfactory.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licensed plumber/drainer.
3. It is the owner's responsibility to ensure that all proposed fittings will drain to Sydney Water's sewer.
4. Any Plumbing and/or Drainage Work is to be carried out in accordance with the Sydney Water Act 1994, AS 3500 and the NSW Code of Practice.
5. Gullies, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Balcony, Verandah, Floor or other cover unless otherwise approved by Sydney Water.

Property No. 3424264

Reece, Mona Vale
Think Check Agent on behalf of
SYDNEY WATER

Reece 14/1/14

gravel car parking area for Avalon Sailing Club

timber ramp

access road for Avalon Sailing Club

line of proposed secondary dwelling shown dashed

exg tree #2

exg tree #1

RL 26.411 m

boundary 5.255

PITTWATER COUNCIL

APPROVED DEVELOPMENT CONSENT PLANS

24HUDSON PARADE

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT.

THIS APPROVAL DOES NOT AUTHORISE ANY WORKS ON THE ADJACENT ROAD RESERVE OR ANY COUNCIL RESERVE.

NOT FOR CONSTRUCTION

1 Site Plan
1 : 250

N

CLAREVILLE HOUSE

Anick Graveline
26a HUDSON PARADE CLAREVILLE
NSW 2107

Site Plan

Project number	1112
Date	September 2013
Drawn by	Author
Checked by	Checker
Scale	1 : 250

A02

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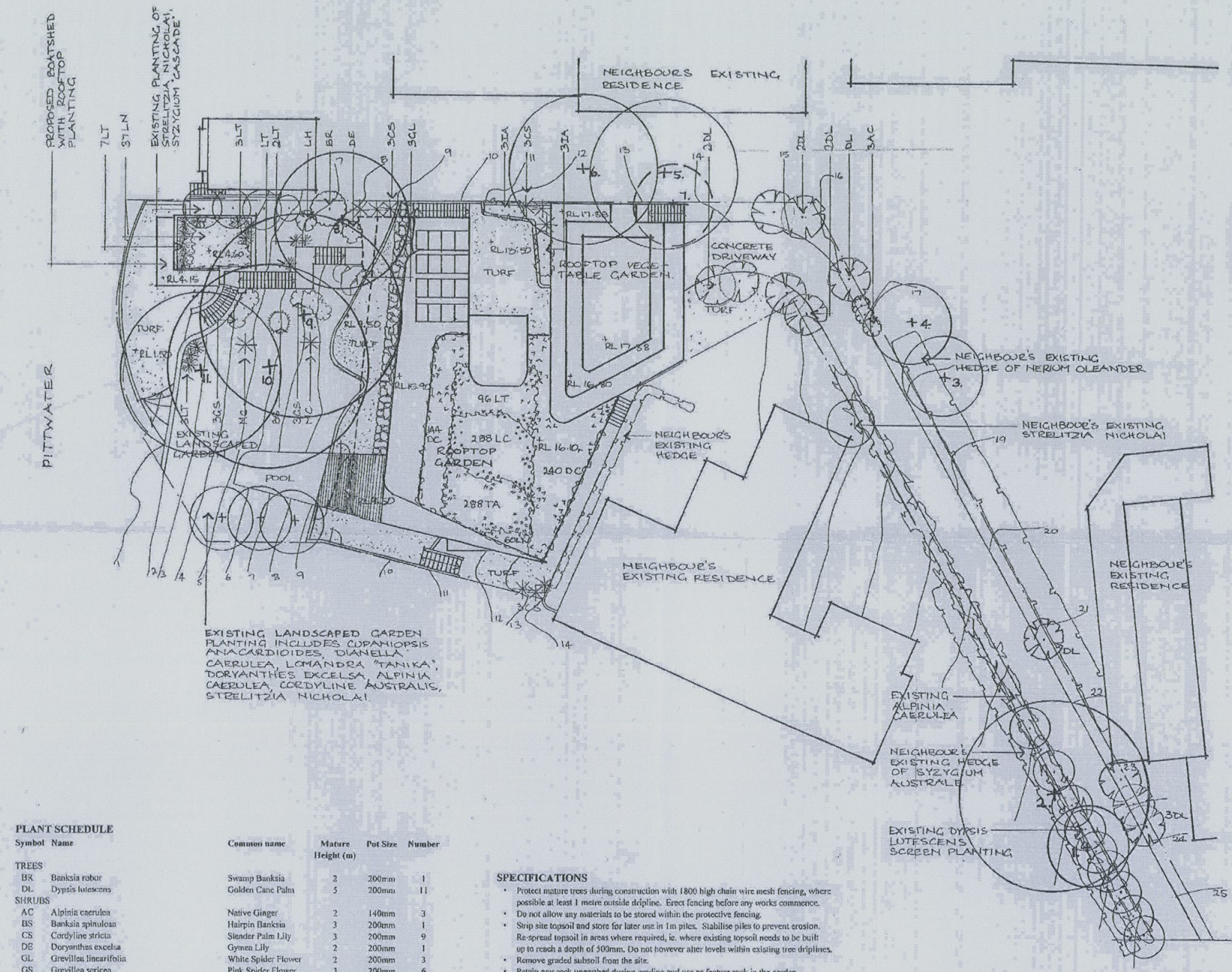

LEGEND

- Boundary
- Existing contours
- + RL 17.38 Spot level
- Pool fence
- Masonry wall
- Existing trees & shrubs TO BE RETAINED
- Existing tree to be removed

NOTES

All hard landscape is by architect/engineer.
Read this plan in conjunction with the arborist's report prepared by Mark Kokot of rain Tree consulting, dated March 2013. Trees on this plan are numbered to correspond with those in the arborist's report, as follows:

1	Eriobotrya japonica
2	Corymbia maculata
3	Magnolia grandiflora "Little Gem"
4	Banksia serrata
5	Corymbia maculata
6	Corymbia maculata
7	Brachychiton acerifolius
8	Corymbia maculata
9	Corymbia maculata
10	Corymbia maculata
11	Corymbia maculata

This plan has been prepared in accordance with Pittwater Council's DCP Pittwater 21.

Sally Kelly
Horticulturist

Sally Kelly Landscapes
21 Tasman Road
Avalon. NSW. 2107
PH: 99189191

PLANT SCHEDULE

Symbol	Name	Common name	Mature Height (m)	Pot Size	Number
TREES					
BR	Banksia robur	Swamp Banksia	2	200mm	1
DL	Dypsis lutescens	Golden Cane Palm	5	200mm	11
SHRUBS					
AC	Alpinia caerulea	Native Ginger	2	140mm	3
BS	Banksia spinulosa	Hairpin Banksia	3	200mm	1
CS	Cordyline stricta	Slender Palm Lily	3	200mm	9
DE	Doryanthes excelsa	Gymea Lily	2	200mm	1
GL	Grevillea linearifolia	White Spider Flower	2	200mm	3
GS	Grevillea sericea	Pink Spider Flower	1	200mm	6
IA	Indigofera australis	Austral Indigo	2	200mm	6
MC	Macrozamia communis	Burrawang	1.5	200mm	2
GRASSES, GROUNDCOVER					
DC	Dianella caerulea	Flax Lily	0.5	cells	384
LC	Lomandra confertifolia "Little Con"		0.3	cells	288
LH	Lomandra hystrix	Mat Rush	1	140mm	1
LT	Lomandra longifolia "Tanika"		0.5	140mm	16
LT	Lomandra longifolia "Tanika"		0.5	cells	96
LN	Lomandra "Nyalla"		0.8	140mm	37
TA	Thuseda australis "Mingo"		0.2	cells	288

SPECIFICATIONS

- Protect mature trees during construction with 1800 high chain wire mesh fencing, where possible at least 1 metre outside dripline. Erect fencing before any works commence.
- Do not allow any materials to be stored within the protective fencing.
- Strip site topsoil and store for later use in 1m piles. Stabilise piles to prevent erosion. Re-spread topsoil in areas where required, ie. where existing topsoil needs to be built up to reach a depth of 500mm. Do not however alter levels within existing tree driplines.
- Remove graded subsoil from the site.
- Retain any rock unearthed during grading and use as feature rock in the garden.
- Do not dispose of excess, harmful or hazardous materials on site.
- Build all hard surfaces and walls to architects/engineers specifications.
- Build pool fence to comply with Australian Standards 1926.1-1993 "Fencing for swimming pools" and 1926.1-1995 "Location of fencing for private swimming pools".
- Remove all weeds by hand and if persistent use glyphosate at manufacturer's recommended rates. Weeds present include Cassia *(Senna pendula)*, Asparagus Fern *(Protasparagus aethiopicus)*, Crofton Weed *(Ageratina adenophora)*, Morning Glory *(Ipomoea indica)*, Mickey Mouse Bush *(Ochna serrulata)*, Farmer's Friend *(Bidens pilosa)*.
- Mulch all planted areas to a depth of 75-100mm with fine horticultural grade pine bark, leaf litter mulch or similar.

DATE 10/05/13
SCALE 1:200
DWN Sally Kelly
Horticulturist

CLIENT
ANICK GRAVELINE
PROJECT
26a HUDSON PARADE
CLAREVILLE NSW 2107

LANDSCAPE PLAN

* to BE IN ACCORDANCE WITH ARBORICULTURAL ASSESSMENT & DEVELOPMENT IMPACT REPORT PREPARED BY MARK A. KOKOT DATED MARCH 2013