

Pittwater



LOCAL

Certificate No.: 5001434

Construction Certificate

issued under the Environmental Planning and Assessment Act, 1979

yours locally

Sydney North West
21/5 Inglewood Place
Baulkham Hills 2153
PO Box 7321 Baulkham Hills BC NSW 2153
DX 8461 Castle Hill
p 02 9836 5711 f 02 9836 5722
web www.localgroup.com.au

Subject Land:
H/N: 165
Lot: 73
DP/SP/CP: 270385
Street: GARDEN STREET
Suburb: WARRIEWOOD 2102

COPY

Applicant:
CLARENDON RESIDENTIAL PTY LTD
UNIT 3, GROUND FLOOR, 21 SOLENT CIRCUIT
BAULKHAM HILLS NSW 1755

Development:
DWELLING (TWO STOREY)

Limitations &/or Exclusions:

Building Classification: 1A
Development Consent: N0293/07
1 AUGUST, 2007

Documentation accompanying the application:

Plans:

PLANS PREPARED BY CLARENDON RESIDENTIAL GROUP DATED 10/5/06, REVISION B DATED 8/8/07, JOB No. 242039, SHEETS 1 TO 7, 2.1 TO 2.3.

Specifications:

GENERAL HOUSING SPECIFICATION PREPARED BY HIA.

Other Documents:

APPLICATION FORM; OWNERS CONSENT; COUNCIL RECEIPT; HOW CERTIFICATE; BASIX CERTIFICATE # 138569S ISSUED 17/5/07; SYDNEY WATER APPROVAL; ENGINEERS DETAILS PREPARED BY D'AMICI COLOMBO PTY LTD DATED 17/8/07, JOB No. 19038, SHEETS 1 TO 13; LANDSCAPE PLAN PREPARED BY DANIELL, DAGGER DESIGN LANDSCAPES DATED 29/8/07, ISSUE B, DWG No. 242039/LP1-2, LP2-2; WASTE MANAGEMENT PLAN DATED SEPTEMBER 2007; KOPPERS RETAINING WALL TECHNICAL DESIGN GUIDE; COLOUR SCHEDULE.

Determination: This application for Construction Certificate has been approved.

Date of Determination: 6 September, 2007

Certificate:

This Construction Certificate has been determined as **APPROVED** in accordance with the procedures outlined in Clause 142 of the Environmental Planning and Assessment Regulation 2000. In making this determination, I certify that the work if completed in accordance with the documentation accompanying the application for the Certificate (with such modifications verified by the certifying authority as may be shown on that documentation) will comply with the requirements of this Regulation as referred to in Section 81A(5) of the Environmental Planning and Assessment Act, 1979.

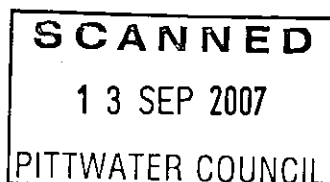
Attached/-

1. Documentation accompanying the application as listed above.
2. Fire Safety Schedule

Signature:

Name:
Accreditation Number:
Accreditation Body:

Andrew Dean
bpb0087
Building Professionals Board



\$30.00
224416



LOCAL

RECEIVED
9/8/07

APPLICATION FORM



Principal Certifying Authority



Construction Certificate
Complying Development Certificate
Occupation Certificate

✓ Compliance Certificate

5001434

THE APPLICATION

DATE OF APPLICATION: 08.08.07

LAND TO BE DEVELOPED

Lot No.: 73 Deposited Plan: 270385
House No.: 165 Street Name: Garden Street
Suburb: Warriewood Post Code: 2102
Area (m²): 475.2m2

21438

THE DEVELOPMENT

Proposed Building Work: Residential ☒ Commercial ☐ Industrial ☐
Description of Development: TWO STOREY DWELLING, ATTACHED GARAGE
Value of Work: \$216,570
Type of work: Erection of a Building

CONSENTS

Consent Authority: Pittwater
Development Consent No.: N0293/07 Date of Issue: 01.08.07
Builder or Owner/Builder Name: Clarendon Homes NSW P/L
Licence No.: 2298C

THE APPLICANT

Surname: CLARENDON Residential
First Name:
Street: Clarendon Homes NSW P/L
Suburb: Unit 3, 21 Solent Circuit, Baulkham Hills 2153
Contact No's.: 8851 5379

THE OWNER/S

	Owner 1	Owner 2	Owner 3	Owner 4
First Name:	Clarendon Residential			
Surname:				
Street:				
Address:				
Contact No.:				

Local South Coast
48b Princes Highway
Fairly Meadow NSW 2519
P - 02 4284 4709
F - 02 4284 4208

Local Norwest
Suite 21, 5 Inglewood Place
Baulkham Hills NSW 2153
P - 02 9836 5711
F - 02 9836 5722

Local Central Coast
Suite 2/162 The Entrance Road
Erina NSW 2250
P - 02 4365 6051
F - 02 4365 4846

Local Macarthur
PO Box 3190
Narellan DC NSW 2567
P - 02 4648 5666
F - 02 4648 5755

E - info@localgroup.com.au
Web - http://localgroup.com.au
ABN - 30 735 366 565

LETTER OF CONSENT

OWNERS CONSENT

I/we the owners of the subject property hereby give consent for the lodgement all relevant applications (i.e. for Construction Certificate/s, Complying Development Certificate/s, Occupation Certificate/s, Compliance Certificate/s) and associated documentation to Local Certification Services Unit Trust for consideration.

I/we also declare that all documentation presented as part of an application for a Construction Certificate has remained unaltered from that issued with any Development Consent or that any changes have been documented and Local Certification Services Unit Trust have been advised accordingly.

PRINCIPAL CERTIFYING AUTHORITY

With reference to this proposed development I/we the owners of the subject property hereby advise of our decision to appoint ☒ Andrew Dean ☐ Callan Blackwell ☐ Craig Hardy ☐ Danial Powell ☐ Michael Shanahan ☐ Paul Gearin ☐ Trent McCurley ☐ _____ (please select by ticking the box) to fulfil the role of Principal Certifying Authority (PCA) as outlined in the Environmental Planning and Assessment Act, 1979 (as amended).

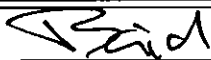
I/we understand that this engagement shall be subject to the Terms and Conditions outlined in this application and the associated Schedule and I/we further understand that he will carry out all mandatory inspections required by the Act during the course of construction along with any others that he deems to be necessary and referred to the abovementioned Agreement.

I/we also advise that I/we are aware of the conditions attached to any Development Consent (i.e. Local Development Consent or Complying Development Consent) and are aware of our responsibilities in relation to those conditions.

SIGNATURES

APPLICANT

Signed:



Name (Please Print):

Clarendon Residential

Date:

08.08.07

OWNER/S

Signed:



Name (Please Print):

Clarendon Residential

Date:

08.08.07

Signed:

Name (Please Print):

Date:

Signed:

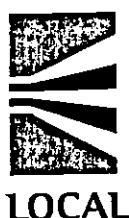
Name (Please Print):

Date:

Signed:

Name (Please Print):

Date:



AUSTRALIAN BUREAU OF STATISTICS

ALL NEW BUILDINGS

(Please complete the following)

How many storeys (incl. underground floors) will the proposed building consist of ? ☐ 1 ☒ 2 ☐ ____
What is the gross are of the new building ? _____ 288.8m²
What is the gross area of the site on which the proposal will be constructed ? _____ 475.2m²

RESIDENTIAL BUILDINGS ONLY

(Please complete the following for residential buildings)

How many dwellings will be constructed ? _____ ☐ 0 ☒ 1 ☐ 2
How many pre-existing dwellings are there on the site already ? _____ ☒ 0 ☐ 1 ☐ 2
How many dwellings will be demolished ? _____ ☒ 0 ☐ 1 ☐ 2
If the proposal includes a new dwelling/s is it be attached to another new building ? ☐ Yes ☒ No
If the proposal includes a new dwelling/s is it be attached to another new building ? ☐ Yes ☒ No
Does the site contain a Dual Occupancy ?
(A dual occupancy is defined as two dwellings on the one site) _____ ☐ Yes ☒ No

MATERIALS

Please indicate the materials to be used in the construction of the new building/s

Walls

	Code
Brick (Double) _____	☐ 11
Brick (Veneer) _____	☒ 12
Concrete or Stone _____	☐ 20
Fibre Cement _____	☐ 30
Timber _____	☐ 40
Curtain (Glass) _____	☐ 50
Steel _____	☐ 60
Aluminium _____	☐ 70
Other _____	☐ 80
Not Specified _____	☐ 90

Floor

	Code
Concrete or Slate _____	☒ 20
Timber _____	☐ 40
Other _____	☐ 80
Not Specified _____	☐ 90

Roof

	Code
Tiles _____	☐ 10
Concrete or Slate _____	☒ 20
Fibre Cement _____	☐ 30
Steel _____	☐ 60
Aluminium _____	☐ 70
Other _____	☐ 80
Not Specified _____	☐ 90

Frame

	Code
Timber _____	☒ 40
Steel _____	☐ 60
Aluminium _____	☐ 70
Other _____	☐ 80
Not Specified _____	☐ 90

Local South Coast
48b Princes Highway
Fairy Meadow NSW 2519
P - 02 4284 4709
F - 02 4284 4208

Local Norwest
Suite 21, 5 Inglewood Place
Baulkham Hills NSW 2153
P - 02 9836 5711
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Local Central Coast
Suite 2/162 The Entrance Road
Erina NSW 2250
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Local Macarthur
PO Box 3190
Narellan DC NSW 2567
P - 02 4648 5666
F - 02 4648 5755

E - info@localgroup.com.au
Web - <http://localgroup.com.au>
ABN - 30 735 366 565



HOME WARRANTY INSURANCE

Local Authority Copy

CGU POLICY CERTIFICATE NUMBER: 02.HWL.0051983.02

Home Building Regulation 2004 Clause 66(1)

Schedule 1 - Forms, Form 1

HOME BUILDING ACT 1989 Section 92

CERTIFICATE IN RESPECT OF INSURANCE RESIDENTIAL BUILDING WORK BY CONTRACTORS

A contract of insurance complying with section 92 of the Home Building Act 1989
has been issued by CGU Insurance Ltd ABN 27 004 478 371:

in respect of:

Construction of new residential dwelling

at:

Lot 73 # 165 Garden Street, Warriewood, Nsw 2102

Builder Job Number:

242039

carried out by:

Clarendon Homes (NSW) Pty Ltd ACN.003892706 ABN.18003892706

for:

CLARENDON RESIDENTIAL PTY LTD

Subject to the Act and the Home Building Regulation 2004 and the conditions of
the insurance contract, cover will be provided to a beneficiary described in the
contract and successors in title to the beneficiary.

Date: 10th August 2007

Signed for and on behalf of the Insurers:

This Certificate in respect of Insurance is issued for the building contract

dated 10/08/2007

for the contract sum of \$216,570

CGU ELIGIBILITY NUMBER: 0002458

CGU Home Warranty Insurance

A Division of CGU Insurance Limited ABN 27 004 478 371

An IAG Company

GD0522/0404

Lot 73

Pittwater Council

OFFICIAL RECEIPT

25/07/2007 Receipt No 219586

To CALRENDON RESIDENTIAL GROUP

DX 9952
NORWEST BUSINESS PARK
BAULKHAM HILLS

Applic	Reference	Amount
GL Re	QLSL-Buil	\$1,337.00
	N0293/07 73/165 Garden St	
GL Re	TDEV-DA F	\$1,826.80
	N0293/07 - 73/165 Garden	

Total: \$3,163.80

Amounts Tendered

Cash	\$0.00
Cheque	\$3,163.80
Db/Cr Card	\$0.00
Money Order	\$0.00
Agency Rec	\$0.00
Total	\$3,163.80
Rounding	\$0.00
Change	\$0.00
Nett	\$3,163.80

Printed 25/07/2007 1:38:14

Cashier PHammo

LOT 73
D.P: 270385
L.G.A: PITTWATER

AREAS:

P.O.S 132.0 Sq.m
TURF 345.0 Sq.m
DRIVE 8.50 Sq.m
XOVER 4.30 Sq.m
PATH 10.0 Sq.m

POPLAR LANE

SYDNEY WATER
APPROVED

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/drainier.
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 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.
6. Property No. 5333094

Reece, Castle Hill
Quick Check Agent on behalf of
SYDNEY WATER

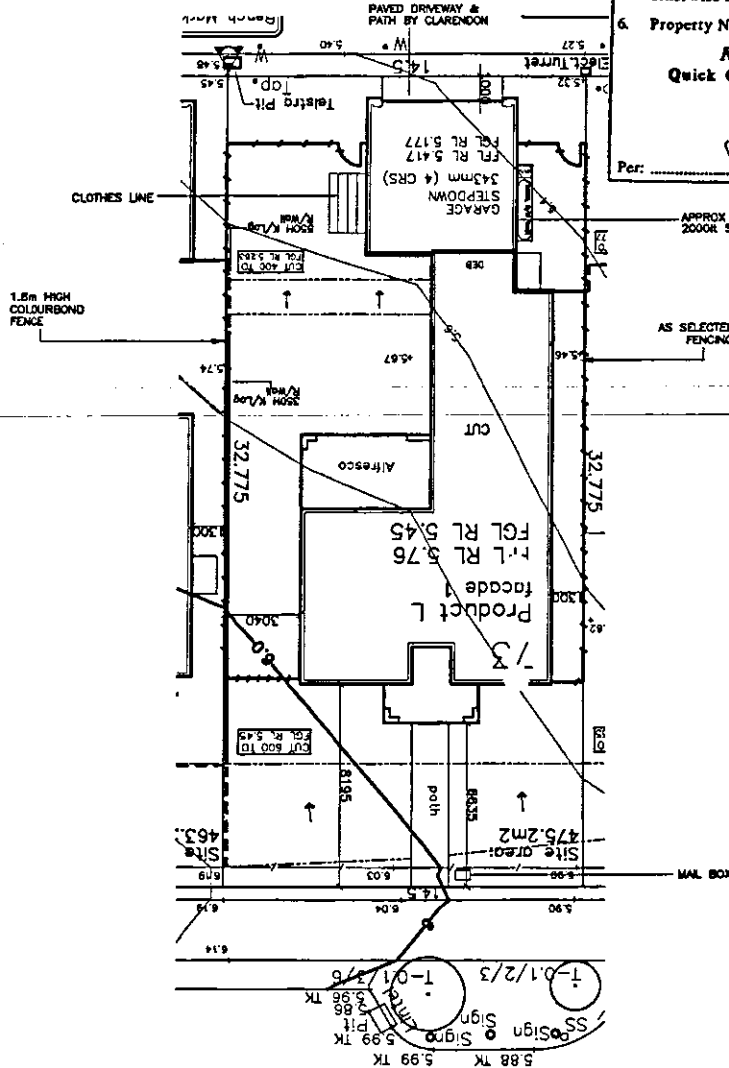
Per: 20/8/07

KEY:

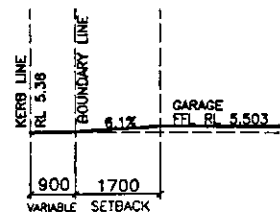
- RET. WALL - CONSISTENT HGT
RET. WALL - DIMINISHING HGT
BUILDING PLATFORM/ BATTER LINE
MAX. FALL - BATTER 1:7
FALL - BATTER 1:5
CUT / FILL LINE

NOTES

- 1) THESE LEVELS ARE APPROXIMATES ONLY & ARE TO BE CONFIRMED ON SITE WITH SUPERVISOR PRIOR TO COMMENCEMENT OF ANY EXCAVATIONS.
- 2) SITUATION CONTROL TO COUNCIL REQUIREMENTS.
- 3) EXISTING VEGETATION ON SITE TO BE REMOVED
- 4) NO WATERWAY OR WATERCOURSES ON SITE.
- 5) TERMITE PROTECTION TO AS3660.



GARDEN STREET



DRIVEWAY PROFILE

SAFETY WARNING

RING 1100 "DIAL BEFORE YOU DIG"
PRIOR TO ANY EXCAVATIONS.
ANY REGISTERED EASEMENT WITHIN THE LOT
IS SHOWN ON THIS SITE PLAN.

CLIENT'S SIGNATURE

DATE:

Clarendon
Residential Group
Clarendon Homes (NSW) P/L
21 Solent Circuit, Baultham Hills NSW 2153
T: (02) 8851 5300 F: (02) 8851 5333

© ALL RIGHTS RESERVED
This plan is the property of
CLARENDON HOMES (NSW) PTY LTD
Any copying or altering
of the drawing shall not be
undertaken without written
permission from
CLARENDON HOMES (NSW) PTY LTD
DIMENSIONS TO BE READ IN
PREFERENCE TO SCALING

PRODUCT:
Product L
Facade 1
Rear loaded Garage
Shearwater Package

CLIENT:
CLARENDON
RESIDENTIAL
SITE ADDRESS:
LOT 73 (DP: 270385)
GARDEN STREET,
WARRIEWOOD 2102.

DA

DRAWN: AL	DATE: 10/5/08	Rev: A
RATIO: 1:200	CHECKED: Checked By	
SHEET: 2	JOB No: 242039	

Andrew Dean

From: KevinShort@pittwater.nsw.gov.au
Sent: Wednesday, 5 September 2007 3:54 PM
To: Elbayeh, Brian
Cc: Andrew Dean
Subject: Re: Warriewood - DA Conditions

Brian,
Having reviewed the conditions again it is my understanding that condition B1, C1, C2 and E1 in the consents mentioned are erroneous given that previous street levels have already been obtained in a previous subdivision (community). It would be my conclusion that these conditions are already satisfied but ultimately it is the responsibility of your PCA.

Kevin Short
Development Officer
Pittwater Council
Ph: 9970 1229

----- Forwarded by Kevin Short/Pittwater Council on 05/09/2007 03:48 PM

Kevin Short

To: "Elbayeh, Brian"

<BElbayeh@clarendon.com.au>

05/09/2007 12:56

cc:

PM

Subject: Re: Warriewood - DA

Conditions(Document link: Kevin Short)

Brian,
It is not possible to provide a small note for these issues.
Where the PCA is unable to sign off then a s96 will need to be applied for.
With respect to the colours we have never received a colour sample board and are therefore unable to accurately identify proposed colours (despite searching the net for the correct colour). As such we have been conditioning each DA to be compliant with the relevant controls. In future we will be conditioning the exterior colours for each approved DA to comply with DCP 29, DCP 21 and the Masterplan. If you wish to alter already approved colours then a s96 will have to be submitted.
Hope this assists you.
regards

Kevin Short
Development Officer
Pittwater Council
Ph: 9970 1229

"Elbayeh, Brian"
<BElbayeh@clarendon.com.au>

To:

cc:

Subject: Warriewood - DA Conditions

05/09/2007 11:52
AM

Good morning Kevin,

WASTE MANAGEMENT PLAN

Outline of Proposal

Site Address

Lot 73 Garden St. Warriewood

Applicant's Name and Address

Clarendon Residential

DX 9952 Norwest Business Park

Baulkham Hills

Buildings and other structures currently on site

NIL

Brief description of proposal

This waste management plan shall cover the reuse, recycling and disposal of waste
on and off the site.

Signature of Applicant

per 

Date September 2007

Waste Management Plan Form - Details of Waste Management -- Construction Phase

MATERIALS ON SITE		DESTINATION		
		Reuse and Recycling		Disposal
Type of Materials	Estimated quantity	ON-SITE Specify proposed reuse or on-site recycling methods	OFF-SITE Specify contractor and recycling outlet	Specify contractor and landfill site
Bricks	Approximately 14,500 bricks	Broken and waste bricks are stored in a separate pile ready for collection, approx. 3%	Waste bricks to be taken to recycling plant to be crushed for future use as road-base and other related products.	Details of licensed contractor and landfill site to be confirmed
Plasterboard	Approximately 1,200 sqm	Waste plasterboard is separated and kept dry from weather by storing in a garage ready for collection.	Waste plasterboard is collected by registered and licensed contractor and sent to a recycling plant to be turned back into plasterboard.	Details of licensed contractor and landfill site to be confirmed
Roof Tiles / Colorbond Steel	Approximately 260 sqm	Waste roof tiles are gathered together and separated from other products ready for collection	Waste masonry is taken to a recycling plant to be crushed for future use as road-base and other related products.	Licensed contractor as directed to closet recycling depot
All other masonry products including, pavers excess concrete and the like	Approximately 30m ³	Waste masonry products are gathered together and separated from other products ready for collection	Waste masonry is taken to a recycling plant to be crushed for future use as road-base and other related products.	Licensed contractor as directed to closet recycling depot
General Waste	Approximately 3m ³	General waste is separated from all the above mentioned products ready for collection.	General Waste is taken to a recycling plant to be separated for future use	Licensed contractor as directed to closet recycling depot

Describe how you intend to ensure ongoing management of waste on-site (eg. Lease conditions, caretaker/manager on site).

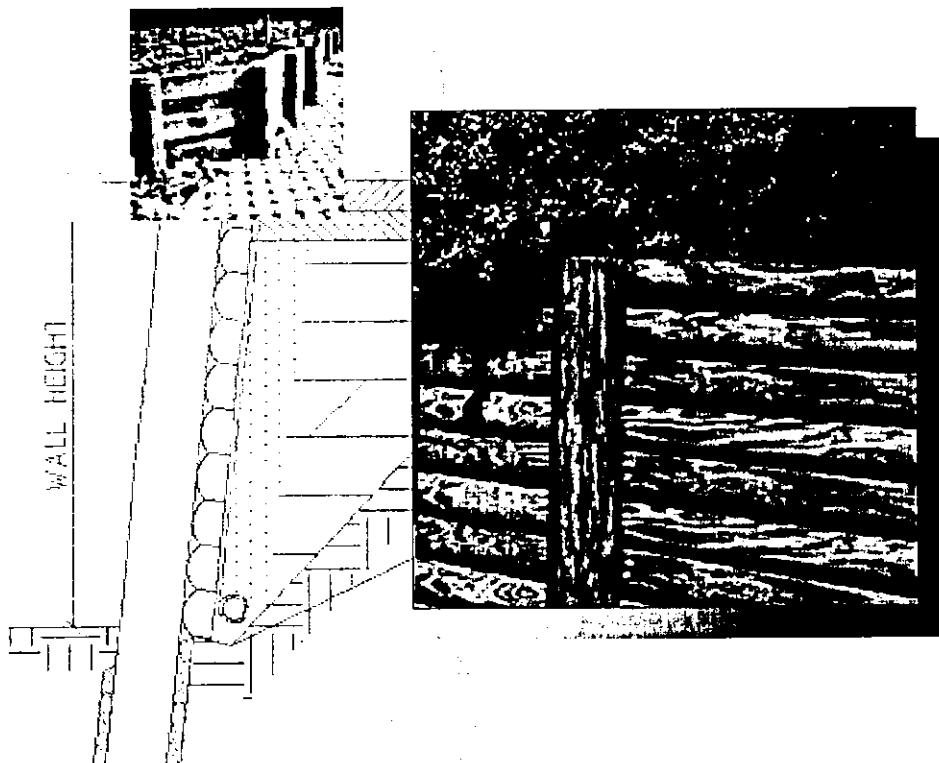
The allotment has sufficient space for the storage of bins on site in an area that is not
directly visible from the public domain. The occupants of the dwelling will be
responsible for the storage of waste and placing individual bins at the street frontage
for waste collection.



TDS 1

TECHNICAL DESIGN GUIDE

CANTILEVER RETAINING WALLS - KOPPERS ROUNDWOOD POSTS FOR WALL HEIGHTS 0.3m to 1.8m



THESE TABLES ARE ENGINEERED FOR KOPPERS® SLASH/CARIBAEA HYBRID SPECIES ROUNDWOOD POSTS ONLY AND ARE NOT SUITABLE FOR OTHER SPECIES.

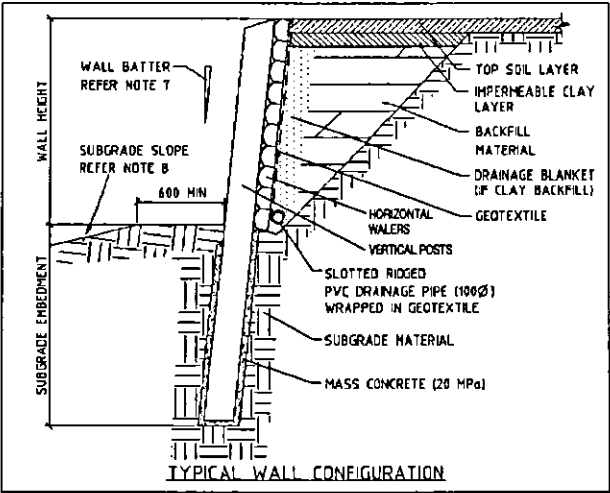
- ◆ Koppers® treated logs carry a written guarantee and each is individually branded with the Koppers® name.
- ◆ Koppers® products are pressure treated to relevant Australian Standards.
- ◆ A building approval may be required from the Local Council before constructing a retaining wall.
- ◆ 175mm to 250mm posts are treated to Hazard Level 5. Please see Product Information note.
- ◆ New 170mm roundback sleeper option for waling available in H5.

DESIGNING THE WALL

I. WALL SELECTION CRITERIA

- Select the correct design table by identifying the backfill/subgrade type:

◆ Backfill with 100% Crushed Igneous Rock or recycled concrete (+25mm to 80mm particle size)	Table 1
◆ Gravel	Table 2
◆ Medium Dense Sand (Medium grained)	Table 3
◆ Medium Dense Silty Sand/Fine Sand/Shales	Table 4
◆ Stiff Clay	Table 5
◆ Soft Clay	Table 6
- Subgrade is defined as the material into which the post is to be embedded.
- Decide on the height of the wall
- Check the table you have selected to find out the range of post spacings. Choose the most suitable post spacing.
- Now that you have resolved the soil type, wall height and post spacing, the remainder of the specification can be read off from the chart. Example: I plan to build a 0.9m wall in a stiff clay with crushed igneous rock or recycled concrete as backfill. After checking Table 1, I decide to use posts at 1.5m spacing. I then read off the remainder of the specification by checking the relevant column, shown by the shaded figures in Table 1. Refer to the embedment depth note for embedment details. For clay subgrade, a reduction factor of 20% is allowed when using crushed igneous rock or recycled concrete backfill. Therefore, the minimum embedment depth reduces to 1.4 - (20% x 1.4) = 1.12m.
- The tables show minimum sizes.
- The general configuration of the wall with drainage installed behind the wall should conform with the diagram adjacent.



2. HARD SOUND IGNEOUS ROCK

Embedment depths for hard sound igneous rock (free of weather plains, joints, etc) are 2.5 times the post diameter.

3. TWIN POST DESIGN

By using twin posts in lieu of single posts it is possible to reduce the post diameters as follows:

Single Post Diameter	Twin Post Diameter
175mm	150mm
200mm	175mm
225mm	200mm
250mm	225mm

NOTE: 250mm posts subject to availability at time of order.

4. SOIL PARAMETERS

The formulation of the cantilever log retaining wall design sheets have been undertaken based on the following soil parameters:

Soil Type	Density (kN/m³)	Angle of Internal Friction	Cohesion (kPa)
Crushed igneous rock	18	40	-
Gravel	19	35	-
Sand	20	32	-
Silty sand	18	30	-
Stiff clay	20	-	75
Soft clay	18	-	18

The sizes and dimensions shown in the design sheets have assumed that the structure classification (AS4678-2002) is Type A. This assumes failure would only result in minimal damage and loss of access. For higher structure classifications, engineering advice should be obtained.

The design sheets have assumed the backfill and subgrade to be a Controlled Fill - Class 1 (AS 4678-2002). For any backfill in a lower class, engineering advice should be obtained.

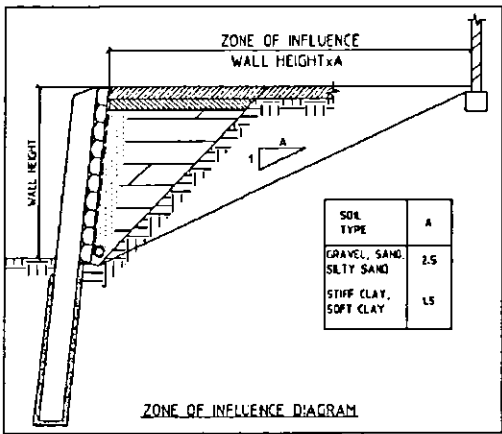
5. POST HOLE SIZES

It is assumed that the cantilever posts will be set in bored holes and encased in concrete. The following bored post hole sizes have been assumed:

Post diameter(mm)	Post hole diameter(mm)
125-150	300
175-250	400

6. SURCHARGE

The cantilever log retaining walls specified have been designed based on a 2.5kPa surcharge load in accordance with AS4678-2002. For retaining walls where a higher surcharge loading is applied within the zone of influence (refer to diagram below) , engineering advice should be obtained.



7. RETAINING WALL BATTERING

Retaining walls of height greater than 1000mm, should be battered back from vertical in the following amounts:

Backfill/Subgrade type	Batter	
	H:V(%)	V:H (ratio)
Gravel, sand, silty sand	5.0 %	1:20
Stiff clay, soft clay	6.7 %	1:15

8. SUBGRADE BATTERING

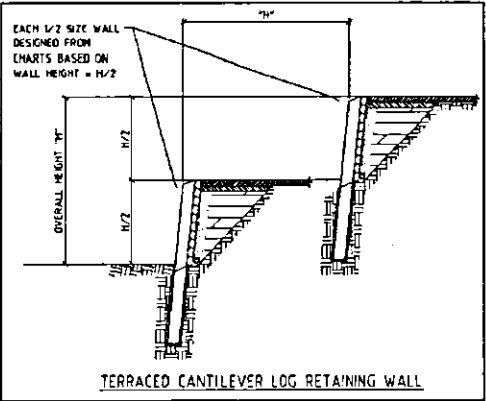
The information in the tables has been based on a maximum subgrade slope from 600mm beyond the base of the wall of 1 vertical to 6 horizontal away from the wall. If the subgrade slope is beyond this amount, engineering advice should be obtained. Refer to Typical Wall Configuration diagram.

9. BACKFILL SLOPE

The information on the tables has been based on a horizontal backfill slope only. For backfill slopes beyond this amount, engineering advice should be obtained.

10. WALL TERRACING

Utilising two terraced cantilever walls of half height instead of a single wall of full height is permitted so long as the distance between the two terraced walls conforms with the diagram below.



11. ATTACHMENT OF PALING FENCES

Paling fences can be installed adjacent to the retaining wall in a conventional manner (embedded within a mass concrete post hole) however, the retaining wall under shall be designed so that an additional 300mm is added to the wall height (1.8 metre high fence assumed). For example, for a 900mm wall with a 1.8m paling fence attached, work from the 1200mm high retaining wall table.

12. FURTHER ASSUMPTIONS

The formulation of these design sheets has been undertaken on the following assumptions:

- a) The retaining wall is not subject to vibrations
- b) The water table is, in all cases, below the underside of the cantilever posts
- c) The subgrade is in a medium dense state and is undisturbed during the construction of the retaining wall.
- d) For walls with post spacings of 1.2 and 1.5 metres it is assumed that winged split horizontals are used in a twin span continuous arrangement with staggered joints for deflection control. Where this cannot be achieved and a simple span arrangement is required, either reduce the post spacing by 150mm or use the equivalent size slab horizontal for this span.

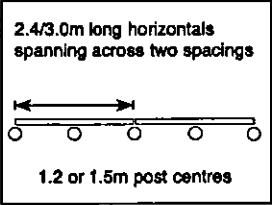


TABLE I
(Most cost effective method)

**WALLS BACKFILLED
WITH CRUSHED
IGNEOUS ROCK,
OR RECYCLED
CONCRETE (+25mm
to 80mm particle size)**

TABLE I (Most cost effective method) WALLS BACKFILLED WITH CRUSHED IGNEOUS ROCK, OR RECYCLED CONCRETE (+25mm to 80mm particle size)	Distance between post centres		1.2m						1.5m						1.8m						2.4m					
	Wall Height	Metres	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5		
	Embedment depth	Metres	REFER TO NOTE																							
	Post diameters	Millimetres	100	125	150	175	225	250	100	125	175	200	225	2x225	100	125	175	225	250	100	175	200	225	2x225		
	Winged Split Waling	Millimetres	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	125	-	-	125	-	-	-		
	Slab Waling	Millimetres	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Half Round Waling	Millimetres	75	75	75	100	100	100	100	75	75	100	100	125	125	125	150	150	-	-	150	-	-	-	-	
	Rounds	Millimetres	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	90	90	75	100	125	125	125	
	Budget Winged Split	Millimetres	100	100	100	100	100	100	100	100	100	100	100	100	-	100	-	-	-	-	-	-	-	-	-	
	Budget Slab	Millimetres	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	
Round Back Sleeper	Millimetres	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	-	-	-		

TABLE 2
GRAVEL
SUBGRADE
AND BACKFILL

[illegible]

TABLE 3
MEDIUM DENSE
SAND (MEDIUM
GRAINED)
SUBGRADE AND
BACKFILL

TABLE 3	Distance between post centres	1.2m					1.5m					1.8m					2.4m						
		0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5
MEDIUM DENSE SAND (MEDIUM GRAINED)	Wall Height Metres																						
	Embedment depth Metres	0.5	0.7	0.8	0.9	1.1	1.2	0.5	0.7	0.8	1.0	1.1	-	0.5	0.7	0.9	1.1	1.2	0.5	0.7	1.0	1.1	-
	Post diameters Millimetres	100	125	175	225	250	2x250	100	150	200	225	2x225		100	150	200	250	2x250	125	175	225	2x225	-
	Winged Split Waling Millimetres	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	-	-	-	-	-	-
	Slab Waling Millimetres	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	100	100	100	100	100	-
SUBGRADE AND BACKFILL	Half Round Waling Millimetres	75	75	100	100	125	125	75	100	125	125	150	-	125	150	-	-	-	-	-	-	-	-
	Rounds Millimetres	75	75	75	75	75	75	75	75	75	75	75	-	75	75	90	100	100	90	125	125	150	-
	Budget Winged Split Millimetres	100	100	100	100	100	-	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-
	Budget Slab Millimetres	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	100	100	100	-	-	-
	Round Back Shearer Millimetres	170	170	170	170	170	170	170	170	170	170	170	170	-	170	170	170	-	170	-	-	-	-

TABLE 4 MEDIUM DENSE SILTY SAND / FINE SAND / SHALES SUBGRADE AND BACKFILL	Distance between post centres		1.2m					1.5m					1.8m					2.4m						
	Wall Height	Metres	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5
	Embedment depth	Metres	0.5	0.7	0.8	1.0	1.2	1.3	0.5	0.7	0.9	1.1	1.2	-	0.5	0.8	1.0	1.2	1.3	0.6	0.8	1.1	1.2	-
	Post diameters	Millimetres	100	125	175	225	250	2x250	100	150	200	225	2x225	-	100	150	200	250	2x250	125	175	225	2x225	-
	Winged Split Waling	Millimetres	100	100	100	100	100	100	100	100	100	100	125	-	100	125	-	-	-	100	100	100	100	-
	Slab Waling	Millimetres	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	100	100	100	100	100	-
	Half Round Waling	Millimetres	75	75	100	100	125	125	75	100	125	125	150	-	125	150	-	-	-	100	100	100	100	-
	Rounds	Millimetres	75	75	75	75	75	75	75	75	75	75	75	-	75	75	90	100	100	90	125	125	150	-
	Budget Winged Split	Millimetres	100	100	100	100	100	-	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-
	Budget Slab	Millimetres	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	100	100	100	100	-	-
	Round Back Sleeper	Millimetres	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	-	-	170	-	-	-

TABLE 5 STIFF CLAY SUBGRADE AND BACKFILL	Distance between post centres		1.2m					1.5m					1.8m					2.4m						
	Wall Height	Metres	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5
	Embedment depth	Metres	0.5	0.7	0.8	1.0	1.2	-	0.5	0.7	0.9	1.1	1.3	-	0.5	0.7	1.0	1.2	-	0.6	0.8	1.1	1.3	-
	Post diameters	Millimetres	125	175	200	225	2x250	-	125	200	225	250	2x250	-	125	200	225	2x225	-	150	225	250	2x250	-
	Winged Split Waling	Millimetres	100	100	100	100	100	-	100	100	100	125	125	-	125	-	-	-	-	-	-	-	-	-
	Slab Waling	Millimetres	100	100	100	100	100	-	100	100	100	100	100	-	100	100	100	100	-	100	100	100	125	-
	Half Round Waling	Millimetres	75	100	100	125	125	-	100	125	125	150	150	-	150	-	-	-	-	-	-	-	-	-
	Rounds	Millimetres	75	75	75	75	75	-	75	75	75	75	75	-	75	90	100	125	-	100	125	150	150	-
	Budget Winged Split	Millimetres	100	100	100	-	-	-	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Budget Slab	Millimetres	100	100	100	100	100	-	100	100	100	100	100	-	100	100	100	100	-	100	-	-	-	-
	Round Back Sleeper	Millimetres	170	170	170	170	170	-	170	170	170	170	170	-	170	170	-	-	-	-	-	-	-	-

TABLE 6 SOFT CLAY SUBGRADE AND BACKFILL	Distance between post centres		1.2m					1.5m					1.8m					2.4m						
	Wall Height	Metres	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	1.8	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5
	Embedment depth	Metres	0.6	1.0	1.3	1.7	2.1	-	0.7	1.1	1.5	1.9	-	-	0.7	1.1	1.6	2.0	-	0.8	1.3	1.8	-	-
	Post diameters	Millimetres	125	175	200	2x225	2x250	-	125	200	225	2x250	-	-	125	200	225	2x250	-	150	225	2x250	-	-
	Winged Split Waling	Millimetres	100	100	100	100	100	-	100	100	100	125	-	-	125	-	-	-	-	-	-	-	-	-
	Slab Waling	Millimetres	100	100	100	100	100	-	100	100	100	100	-	-	100	100	100	100	-	100	100	125	-	-
	Half Round Waling	Millimetres	75	100	125	125	150	-	100	125	125	150	-	-	150	-	-	-	-	-	-	-	-	-
	Rounds	Millimetres	75	75	75	75	75	-	75	75	75	75	-	-	75	90	100	125	-	100	125	150	-	-
	Budget Winged Split	Millimetres	100	100	100	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Budget Slab	Millimetres	100	100	100	100	100	-	100	100	100	100	100	-	100	100	100	100	-	100	-	-	-	-
	Round Back Sleeper	Millimetres	170	170	170	170	170	-	170	170	170	170	170	-	170	170	-	-	-	-	-	-	-	-

NOTE ON TABLE I

EMBEDMENT DEPTH

Embedment depth for cantilever walls is critical. A small reduction in depth results in a significant increase in stress within the foundation material. Additionally, a reduction in post hole diameter causes extra soil stress and increases the likelihood of a foundation failure.

Unless noted otherwise, post embedment depths shall not be less than 300mm. For Clays the minimum embedment depth shall be 400mm.

When using crushed igneous rock or recycled concrete backfill, the embedment depth may be obtained by reference to the table appropriate for the type of soil in which the post is to be embedded (for the wall height and post spacing selected) and reducing this embedment depth by a factor as follows:

TYPE OF SOIL	EMBEDMENT REDUCTION FACTOR
Medium Dense Sand (Medium grained)	10% Reduction
Medium Dense Silty Sand / Fine Sand / Shales	10% Reduction
Clays	20% Reduction
No reduction is allowed for gravel subgrade	

ALTERNATIVE POSTS

100mm and 125mm diameter posts may be substituted by 100mm and 125mm slabs respectively.

NOTES ON TABLES 2 to 6

The figures given in these tables assume that the same soil type is used for both backfill and embedment.

When crushed igneous rock or recycled concrete is used as backfill, refer to Table 1.

INSTALLATION NOTES

- ◆ Wherever possible, place uncut ends into the ground. Where this is not practical (eg: trimmed posts or horizontal walers), coat the ends well with a surface preservative, such as CN Emulsion or equivalent.
- ◆ Place horizontal walers behind posts and temporarily fasten to posts. Fasten top horizontal walers to posts from the rear with galvanised bridge spikes.
- ◆ Place geotextile to rear face of horizontal walers to prevent drainage material from flowing through small gaps. Lay slotted rigid PVC pipe to an outlet as detailed in Typical Wall Configuration diagram.
- ◆ Slope post tops to shed water as appropriate and coat with a surface preservative. Any cut ends above the ground should also be coated with a surface preservative.

KOPPERS PRODUCT RANGE

		1.8m	2.4m	3.0m	3.6m	H4	H5
Rounds	75 / 90mm	✓	✓	✓	-	✓	-
	100 / 125 / 150mm	✓	✓	✓	✓	✓	-
	175 / 200 / 225 / 250mm	✓	✓	✓	✓	-	✓
Slabs & Winged Splits	100mm	✓	✓	✓	-	✓	-
	125mm	✓	✓	✓	-	✓	-
Half Rounds	75mm	✓	✓	✓	-	✓	-
	100mm	✓	✓	✓	-	✓	-
	125mm	✓	✓	✓	-	✓	-
	150mm	✓	✓	✓	-	✓	-
Budget Slabs & Budget Winged Splits		-	✓	-	-	✓	-
Roundback Sleepers		-	✓	✓	-	-	✓

PRODUCT INFORMATION

- 100mm slabs and winged splits are milled from 125mm rounds
- 125mm slabs and winged splits are milled from 150mm rounds
- 100mm budget slabs and winged splits are milled from 110mm rounds

Koppers do not produce Crib and Tieback retaining wall technical design guides. These should be individually designed and engineered.

RELEVANT STANDARDS FOR THIS TYPE OF WALL:

- AS4678 - 2002 Earth-retaining structures
- AS1604.1 - 2005 Specification for preservative treatment - sawn and round timber
- AS1720.1 -1997 Timber structures, Part 1: Design Methods
- AS1170.0 : 2002 Structural design actions Part O: General Principles.

SAFETY

Koppers roundwood timber products are normally treated with Australian Pesticides & Veterinary Medicines Authority registered wood preservatives. These preservatives are fixed in the timber and is safe for normal landscaping, construction rural and utility applications. For further information on treatment preservatives, please visit www.kopperswood.com.

Koppers recommend that you take appropriate care when working with and handling all treated wood products. Wear suitable work gloves to avoid splinters and other minor hand injuries. Always wear eye protection when using power saws or other operations that generate flying particles. Avoid breathing wood dust when sanding or machining. Wash hands and face after working with the material and before eating, drinking or smoking.

Normal domestic or trade quantities of treated wood wastes and off-cuts can be disposed of through normal waste collection services.

Treated timber off-cuts must not be burnt.

These tables were compiled by Cardno consulting engineers. The information is provided for guidance purposes only in the design of retaining walls. If in doubt about the interpretation of the tables or the nature of the soil combinations at the site please seek expert advice.



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www.kopperswood.com

DECEMBER 2005

Available from your Authorised Koppers® stockist:



SHEARWATER

EXTERNAL COLOUR SELECTIONS

**LOT 73 GARDEN STREET
WARRIEWOOD**

ROOF TILE – BORAL STRIATA GUNMETAL

WINDOWS – CUSTOM BLACK

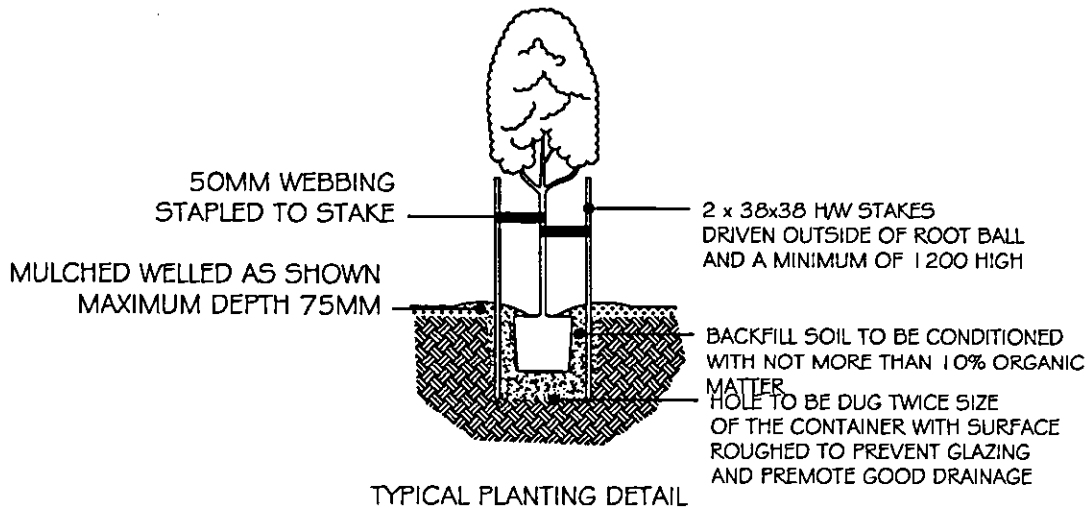
GUTTER & FASCIA – COLORBOND WOODLAND GREY

GARAGE DOOR – COLORBOND PAPERBARK

MAIN BODY COLOUR – TAUBMANS MERINO T175-2W

FEATURE COLOUR 1 – TAUBMANS BURGESS T113-7A

FEATURE COLOUR 2 – TAUBMANS GREEN SLATE T154-7A

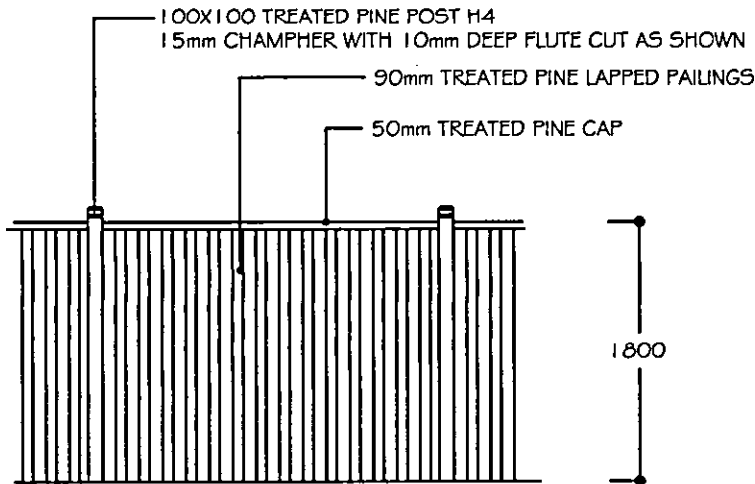


AFTER PLANTING WATER IN PLANT WELL USING 4 TIME THE PLANT CONTAINER CAPACITY OF WATER

IF SOIL IS COMPACTED INSERT A 60MM DIA AG PIPE UNDER PLANT IN BACKFILL TO PROMOTE GOOD AERATION IN SOIL

Notes:

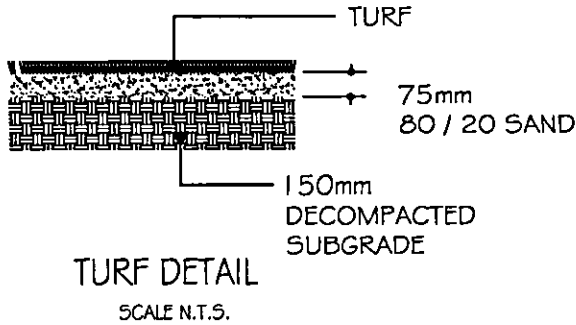
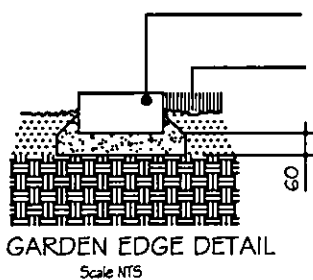
1. This plan is not for construction purposes.
2. The contractor shall be responsible for all sub-grade excavation and preparation to allow for topsoil and mulch depth requirements.
3. All trees and shrubs are to be planted in accordance with Planting Schedule.
4. Before Landscape work is commenced, Contractor is to establish the position of all service lines. Service lids, vents and hydrants shall be left exposed and not covered by any landscape finishes (turfing, paving, mulch, garden beds, etc.,)
5. "No levels taken" therefore any walls, steps etc., to be constructed must have levels taken on site by contractor to ascertain height and/or slope. All contours shown in A.H.D.
6. On-structure garden bed soils to be conditioned with a 50mm cover of pasteurised Cow Manure.
7. All imported soil to be of premium garden mix standard containing 40% Soil, 20% coarse sand, 10% graded ash, 10% coco peat, 20% composted saw dusts. Profile depths not to exceed 200mm.
8. Turf to be 'Sir Walter' grass. Turf to be laid on a 75mm minimum base of 80% sand 20% soil mix. All sub grade clays to judiciously cultivated 150mm deep.
9. All beds to be covered with a minimum of 50mm of Horticultural grade composted pine bark mulch.
10. All garden bed edges to be brick laid on a sand cement bed.
11. Surface drains to be 250mm wide and connected to storm water unless otherwise noted.



TIMBER FENCE DETAIL

NOTE:

GATES TO BE MADE FROM SAME MATERIAL AS FENCE
ALL FIXINGS TO BE GALVANISED
ALL GATES TO HAVE GALVANISED LATCHES FITTED



Plant Schedule

Symbol	Botanic Name	Common Name	Origin	Number	Pot Size	Mature Height	Spacing
Tree							
ASAM	Acmena smithii 'Allyn Magic'	Dwarf Lillypilli	IN	11	300mm	2m	1.5m
CG	Ceratopetalum gummiferum	NSW Christmas Bush	IN	2	35lt	9m	1.5m
TL	Tristaniopsis laurina	Water Gum	IN	2	45lt	6m	2.0m
Shrubs							
CC	Callistemon citrinus	Scarlet Bottlebrush	IN	9	200mm	2.0m	1.5m
DE	Doryanthes excelsa	Gynea Lily	N	2	300mm	1.8m	-
GF	Gardenia florida	Gardenia	E	15	150mm	0.5m	400mm
MC	Macrozamia communis	Macrozamia	IN	6	200mm	1.4m	1.8m
Ground Covers							
DB	Dianella caerulea 'Breeze'	Dianella	IN	13	150mm	0.7m	0.45m
DCB	Dianella caerulea 'Cassa Blue'	Dianella	IN	7	150mm	0.45m	0.3m
LLC	Lomandra longifolia 'Conferta'	Lomandra	IN	21	90mm	0.45m	0.25m
LLT	Lomandra longifolia 'Tanika'	Lomandra	IN	25	90mm	0.45m	0.25m
Turf	Buffalo Palmetto	Soft Leaf Buffalo					
	(IN) Indigenous Native Species =			96			
	(N) Native Species =			2			
	(E) Exotic Species =			15			
	Total			113			
	(%) Percentage of Indigenous Native Species =			84.96			

LOCAL CERTIFICATION SERVICES
PTY LTD
RECEIVED

Issue	Description	Date
B	Revision	29.08.07
A	Initial design for DA	25.05.07

General Notes :
Drawings shall not be used for construction purposes until issued by Landscape Designer for construction. Prior to use for building construction the Builder must ensure that they are in possession of a Construction Certificate and all other required Council approvals.
Contractors must verify all dimensions on site before commencing fabrication or preparation of working drawings, and verify all errors and omissions with the Architect. Use figured dimensions only. Do not scale from drawings.

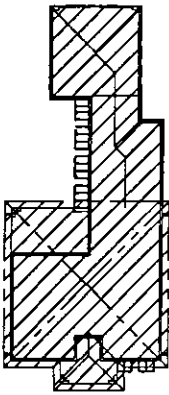
Scale: AS SHOWN@A3
Print Date:
Copyright:
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Project: Shearwater Estate New Residence
Client: Clarendon Residential
Project Address: Lot 73 Garden Street Warnewood NSW 2102

Drawing Title: Landscape Plan
Drawing No: 242039/LP2-2
Issue: DA
Drawn: MAF
Approved: CMD

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fax: +61 2 9939 6644
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Suite 324, 20 Dale Street, Brookvale NSW 2100
Structural Landscape Licence #119673C

PROPOSED AREAS	
SITE:	475.2 m²
BUILDING FOOTPRINT:	180.4 m²
DRIVEWAY & PATHWAYS:	8.5 + 6.5 m²
SWIMMING POOL AREA:	na m²
ENTERTAINMENT AREA:	15.6 m²
TOTAL:	211.0 m²
No. of Beds:	4
GROUND FLOOR:	119.33 m²
FIRST FLOOR:	100.00 m²
GARAGE:	37.17 m²
PATIO:	8.34 m²
BALCONY:	8.34 m²
ALFRESCO	15.62 m²
Spare 2:	N/A m²
TOTAL:	288.8 m²
TOTAL LIVING AREA: (Excl. Garage/Patio etc.)	219.33 m²
FLOOR SPACE RATIO:	0.485 : 1 48 %
SITE COVERAGE:	46.6 %
LANDSCAPED AREA:	349 m² 53.4 %
BUILDING PLATFORM:	000.00 m²
NETT CONDIT. FLOOR AREA:	180.6 m²
UNCONDITIONED FLOOR AREA:	10.5 m²
TOTAL ROOF AREA:	205 m²
HARVESTED ROOF AREA:	205 m²



HARVESTED ROOF AREA - NTS

FUTURE FLOOR COVERINGS	
GROUND FLOOR:	FIRST FLOOR:
KITCHEN TILES	BEDROOMS CARPET
DINING CARPET	HALLWAYS CARPET
LIVING CARPET	BATHROOMS TILES
ENTRY TILES	TV/RUMPUS CARPET
FAMILY TILES	
LAUNDRY TILES	
STUDY CARPET	
GAMES CARPET	
EXTERNAL COLOURS	
ROOF:	DARK EXT WALLS: LIGHT

WINDOW/DOOR REQUIREMENTS		
UNIT CODE	AREA (m2)	TYPE
W1	4.60	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W2	2.90	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W3	4.20	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W4	3.60	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W5	1.30	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W6	4.40	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W7	6.60	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W8	6.80	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W9	1.90	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W10	7.20	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W11	3.60	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.
W12	1.05	IMPROVED ALUMINIUM, SINGLE CLEAR. U VALUE: 6.44, SHGC: 0.75.

6.5hp Ducted AC unit EER values (Cooling 2.5-3.0 & Heating 3.0-3.5) Day/night zoning.
OUTDOOR CLOTHES LINE (LOCATION TO BE DETERMINED)
5 STAR GAS HOT WATER UNIT.
GAS COOKTOP & ELECTRIC OVEN.
SARKING TO UNDERSIDE OF ROOF TILES.
R3.0 CEILING INSULATION (EXCLUDES GARAGE).
R1.5 WALL INSULATION (EXCLUDES GARAGE).
3 STAR BATH TAP SETS.
3 STAR SHOWER HEADS, TOILETS, KITCHEN & VANITY TAP SETS.
SCHEDULE OF BASIX COMMITMENTS

LOCALITY SKETCH UBD REF:

B	08.08.07	ISSUED FOR CC	T.L
A	15/5/07	ISSUED FOR DA	AL
REV	DATE	AMENDMENTS	BY

2.3	SHADOW DIAGRAM
2.2	STORMWATER PLAN
2.1	SITE ANALYSIS PLAN
7	SECTION
6	ELEVATIONS
5	ELEVATIONS
4	FIRST FLOOR PLAN
3	GROUND FLOOR PLAN
2	SITE PLAN
1	COVER SHEET
SHEET	DESCRIPTION

CLIENT'S SIGNATURE: _____ DATE: _____

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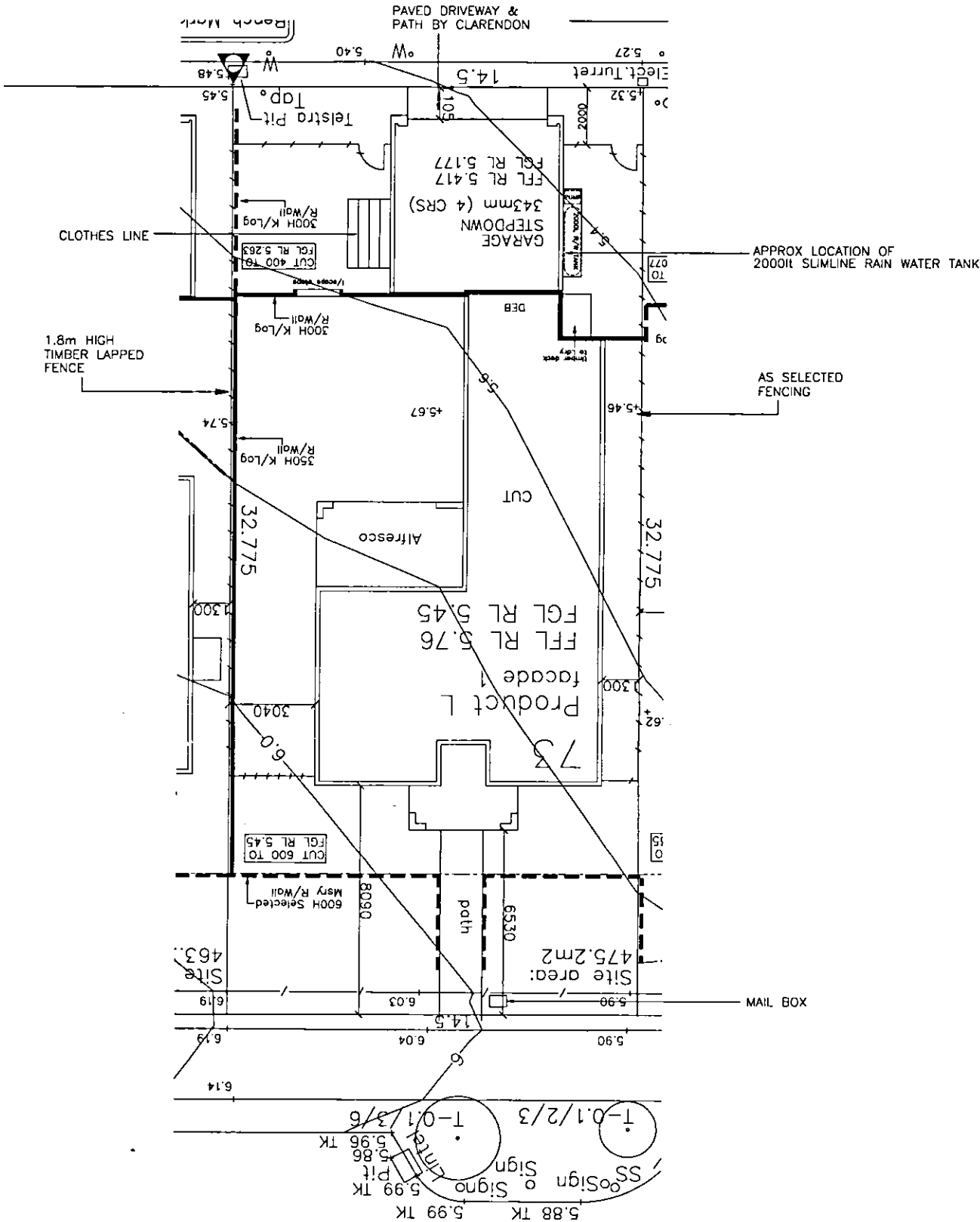
LOT 73
D.P: 270385
L.G.A: PITTWATER

AREAS:
P.O.S 132.0 Sq.m
TURF 345.0 Sq.m
DRIVE 8.50 Sq.m
XOVER 4.30 Sq.m
PATH 10.0 Sq.m

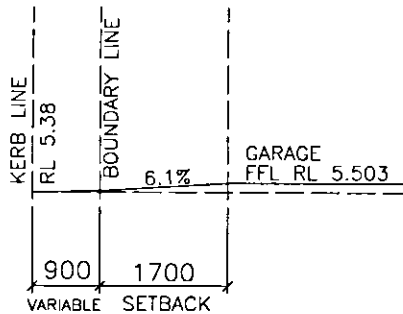
POPLAR LANE

KEY:
RET. WALL - CONSISTENT HGHT
RET. WALL - DIMINISHING HGHT
BUILDING PLATFORM/ BATTER LINE
MAX. FALL - BATTER 1:7
FALL - BATTER 1:5
CUT / FILL LINE

NOTES
1) THESE LEVELS ARE APPROXIMATES ONLY & ARE TO BE CONFIRMED ON SITE WITH SUPERVISOR PRIOR TO COMMENCEMENT OF ANY EXCAVATIONS.
2) SILTATION CONTROL TO COUNCIL REQUIREMENTS.
3) EXISTING VEGETATION ON SITE TO BE REMOVED
4) NO WATERWAY OR WATERCOURSES ON SITE.
5) TERMITE PROTECTION TO AS3660.



GARDEN STREET



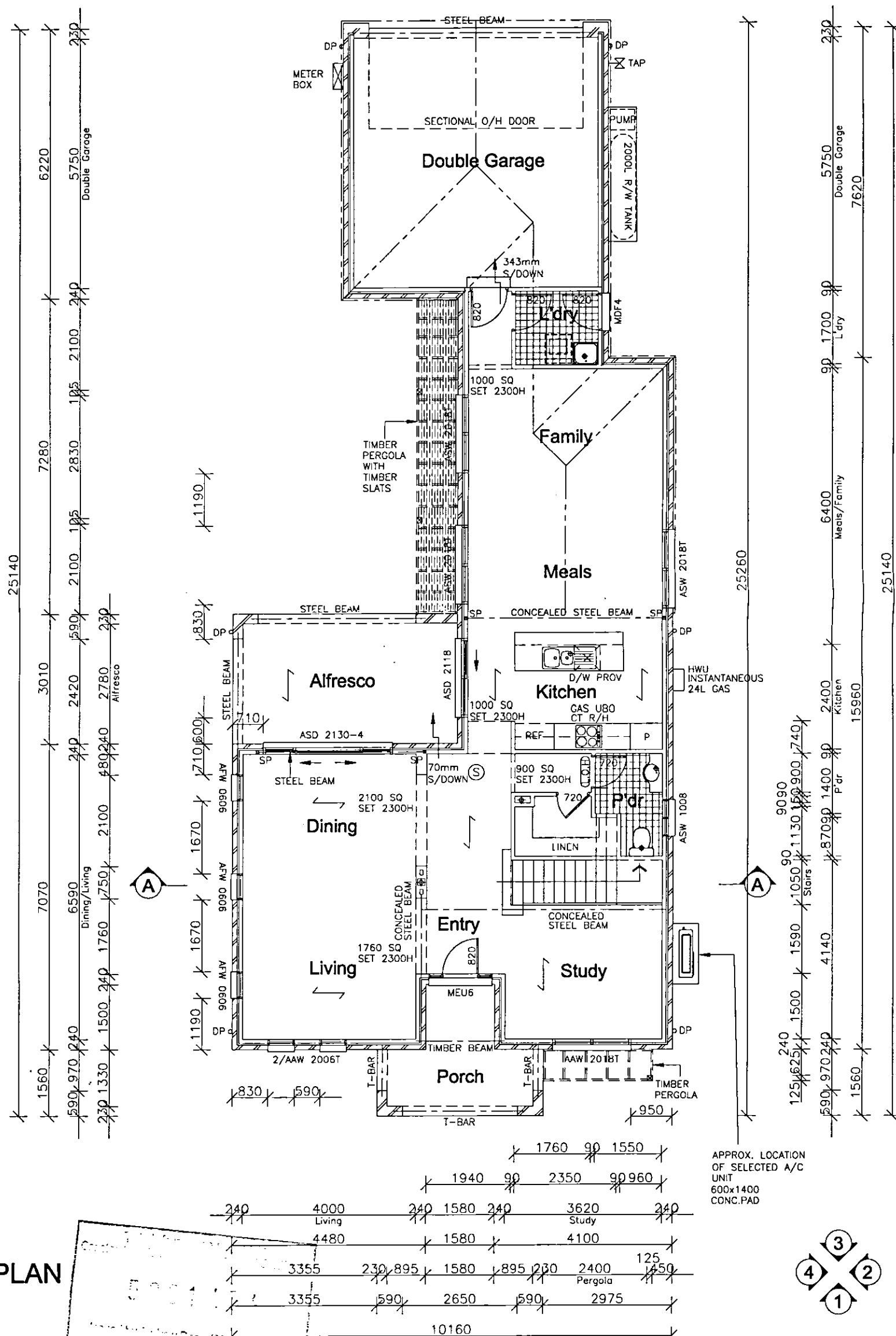
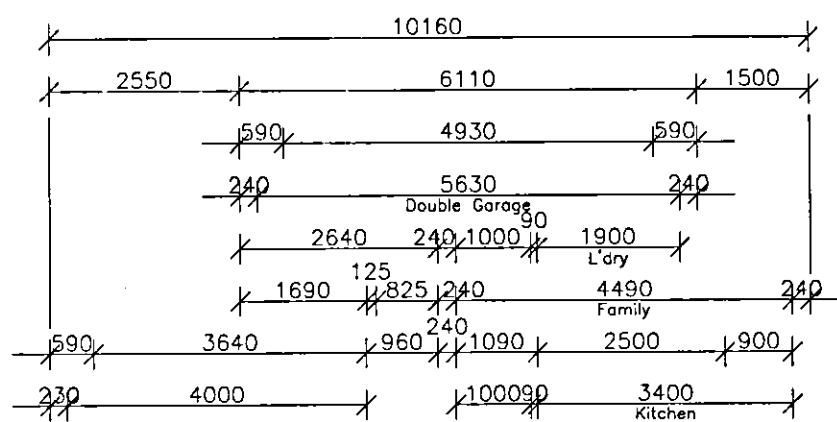
SAFETY WARNING
RING 1100 "DIAL BEFORE YOU DIG"
PRIOR TO ANY EXCAVATIONS.
ANY REGISTERED EASEMENT WITHIN THE LOT
IS SHOWN ON THIS SITE PLAN.

CLIENT'S SIGNATURE: _____ DATE: _____		PRODUCT: Product L Facade 1 Rear loaded Garage Shearwater Package		CLIENT: CLARENDON RESIDENTIAL SITE ADDRESS: LOT 73 (DP: 270385) GARDEN STREET, WARRIEWOOD 2102.		CC PLAN	
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						Rev: B	

1 FLOOR
JOIST
DIRECTION

SP₀ STEEL POST

SELF CLOSING EXHAUST FAN



GROUND FLOOR PLAN

CLIENT'S SIGNATURE:

DATE:



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DIMENSIONS TO BE READ IN PREFERENCE TO SCALING

PRODUCT:

Product L
Facade 1
Rear loaded Garage
Shearwater Package

CLIENT:
CLARENDON
RESIDENTIAL

SITE ADDRESS:
LOT 73 (DP: 270385)
GARDEN STREET,
WARRIEWOOD 2102

CC PLAN

DRAWN: AL	DATE: 10/5/06	Rev: E
RATIO: 1:100	CHECKED: Checked By	
SHEET: 3	JOB No: 242039	

Ⓢ SMOKE DETECTOR

↑ FLOOR JOIST DIRECTION

DP • DOWN PIPE LOCATION

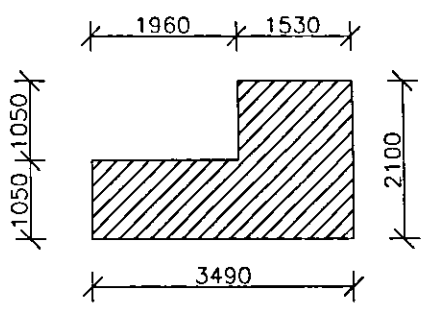
TAP - GARDEN TAP LOCATION

(L.O.B) LIFT OFF HINGES

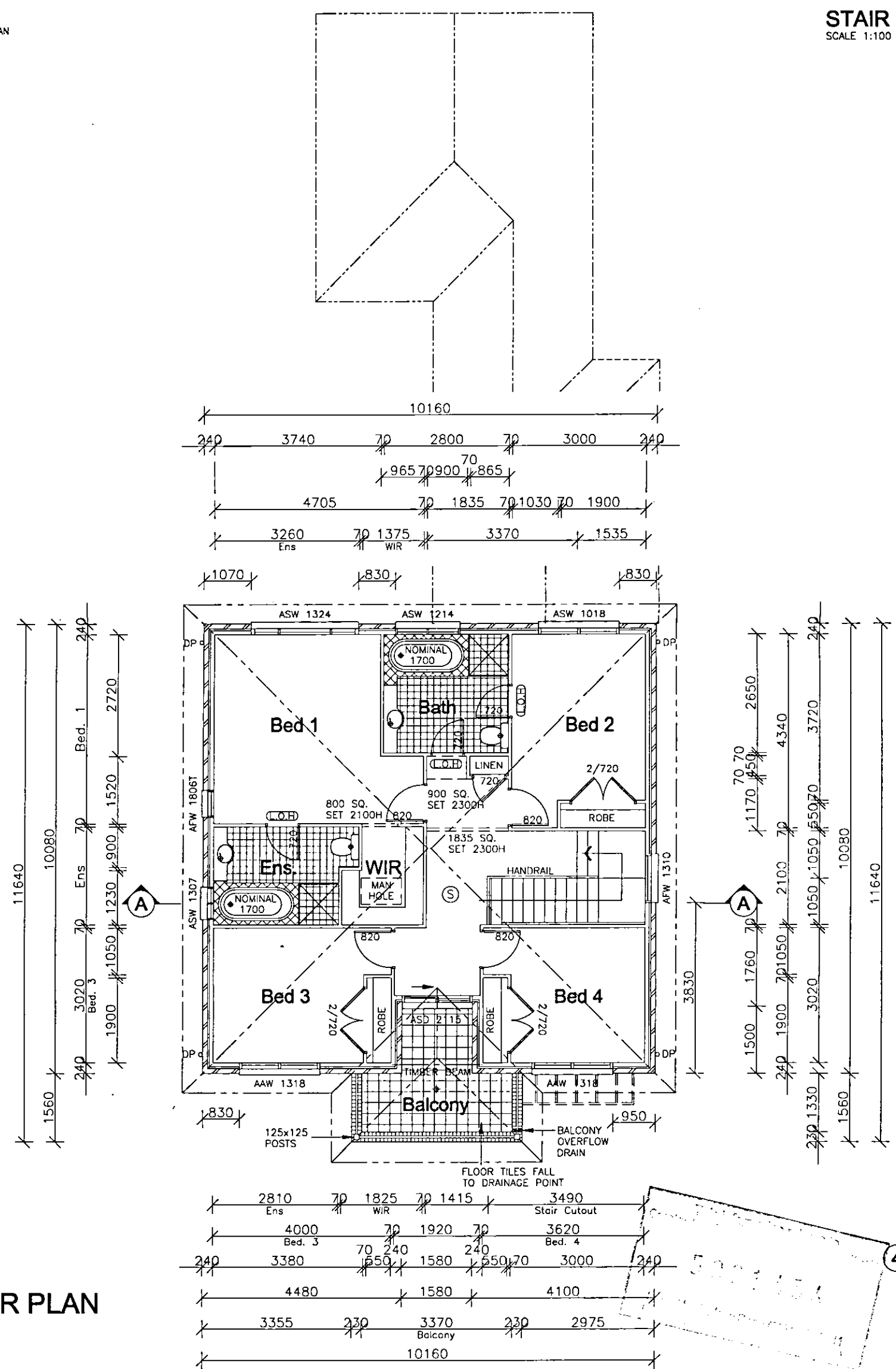
SP • STEEL POST

ARTICULATION JOINTS TO ENGINEERS DETAILS

⊗ SELF CLOSING EXHAUST FAN



STAIR CUTOUT
SCALE 1:100

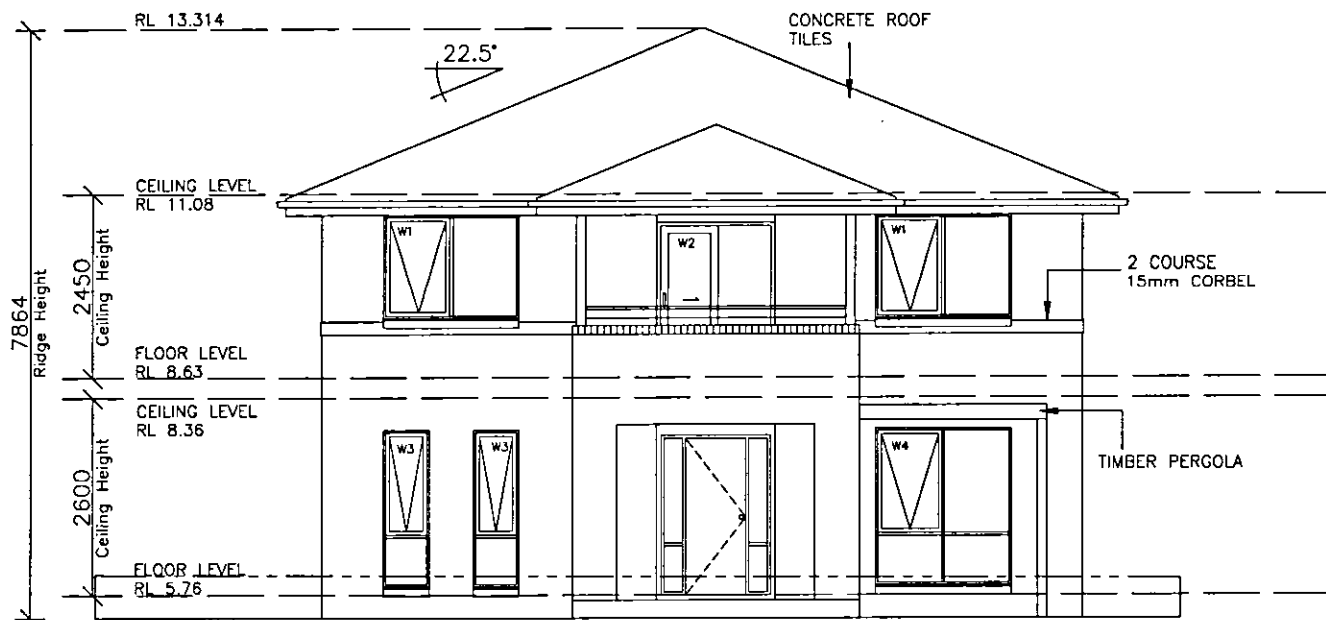


FIRST FLOOR PLAN

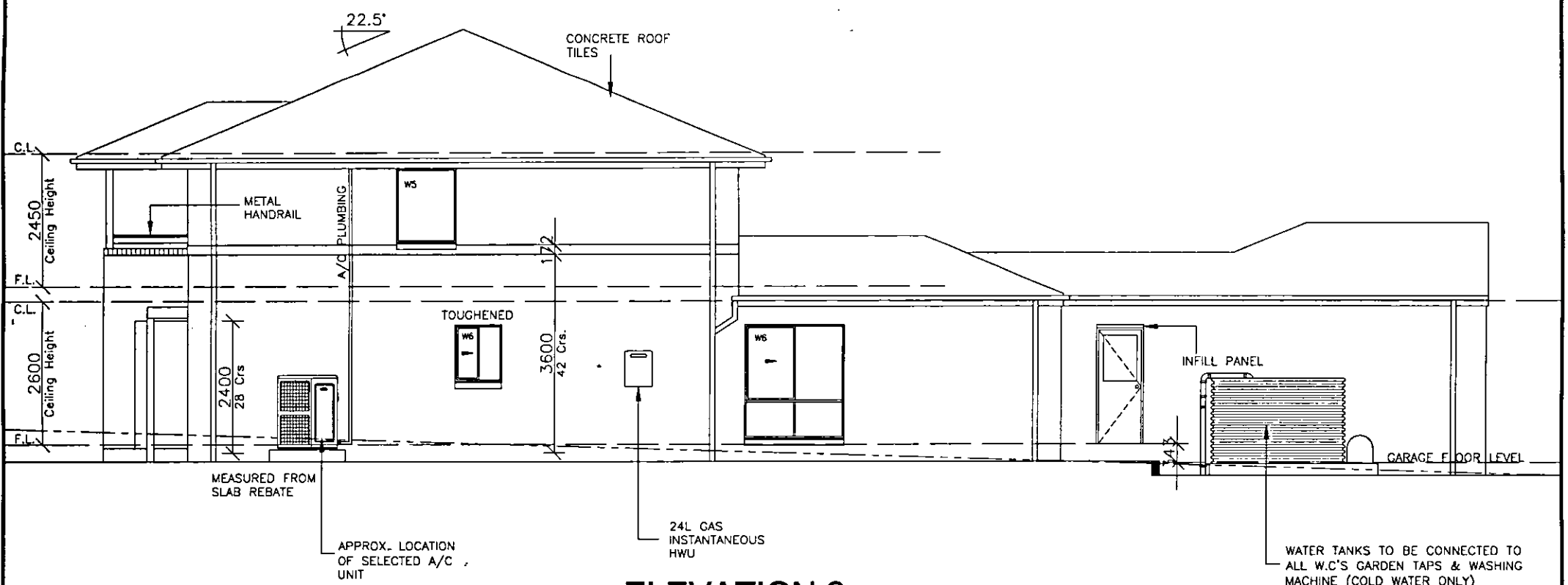
CLIENT'S SIGNATURE: _____ DATE: _____		PRODUCT: Product L Facade 1 Rear loaded Garage Shearwater Package		CLIENT: CLARENDON RESIDENTIAL SITE ADDRESS: LOT 73 (DP: 270385) GARDEN STREET, WARRIEWOOD 2102.		CC PLAN		
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						CHECKED: Checked By		
						JOB No: 242039		

WIND CLASSIFICATION: " - "

SLAB CLASSIFICATION: "M"



ELEVATION 1
WEST



ELEVATION 2
SOUTH

CLIENT'S SIGNATURE:

DATE:

Clarendon
Residential Group

Clarendon Homes (NSW) P/L
21 Solent Circuit, Baulkham Hills NSW 2153
T: (02) 8851 5300 F: (02) 8851 5333

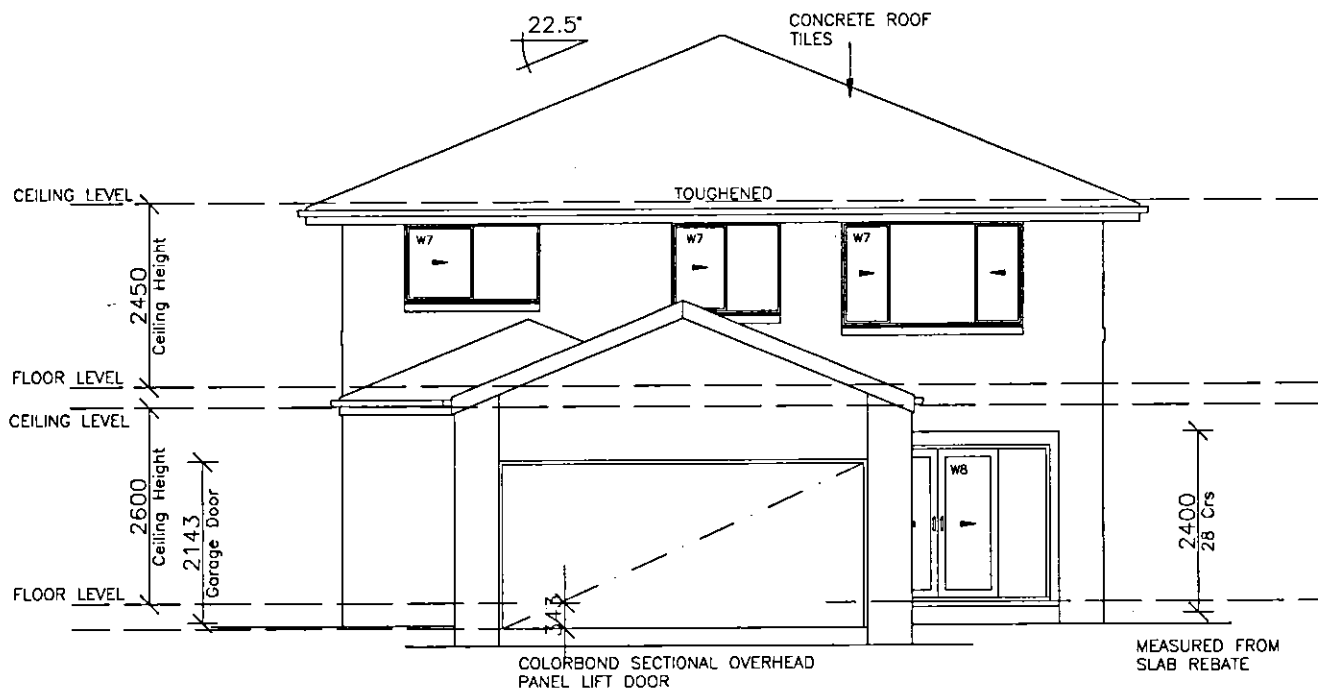
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PRODUCT:
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Facade 1
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Shearwater Package

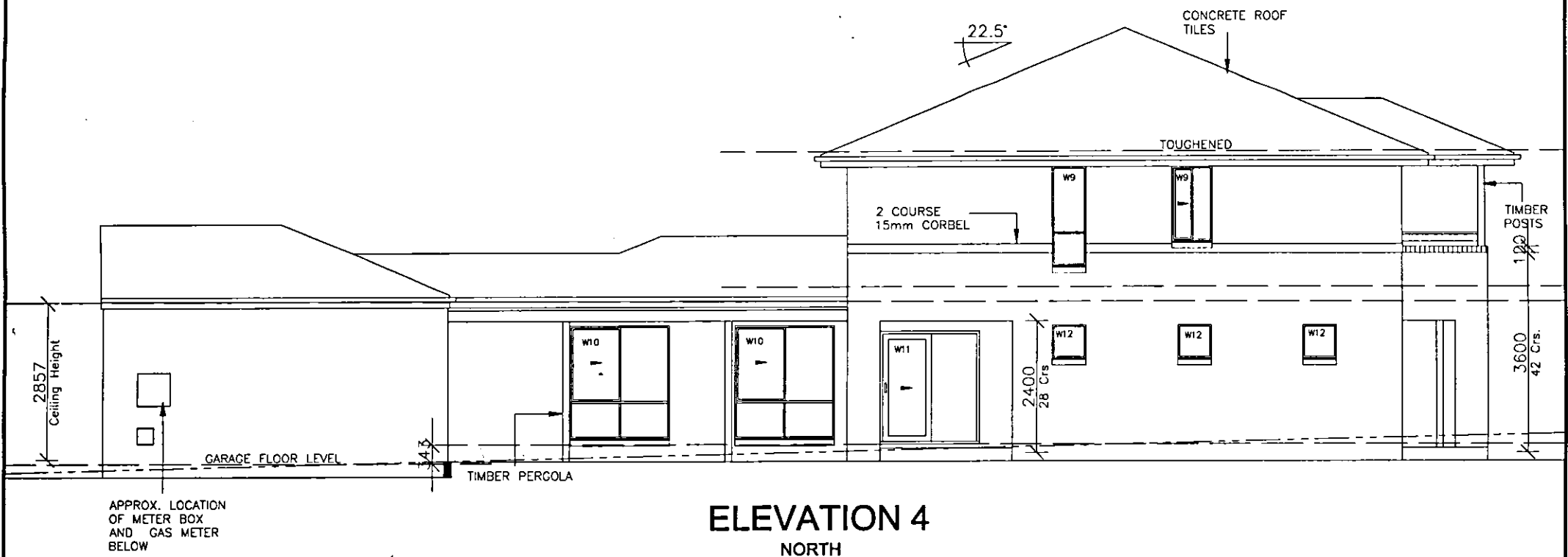
CLIENT:
**CLARENDON
RESIDENTIAL**
SITE ADDRESS:
LOT 73 (DP: 270385)
GARDEN STREET,
WARRIEWOOD 2102.

CC PLAN

DRAWN: AL	DATE: 10/5/06	Rev: B
RATIO: 1:100	CHECKED: Checked By	
SHEET: 5	JOB No: 242039	



ELEVATION 3
EAST



ELEVATION 4
NORTH

CLIENT'S SIGNATURE: _____

DATE: _____



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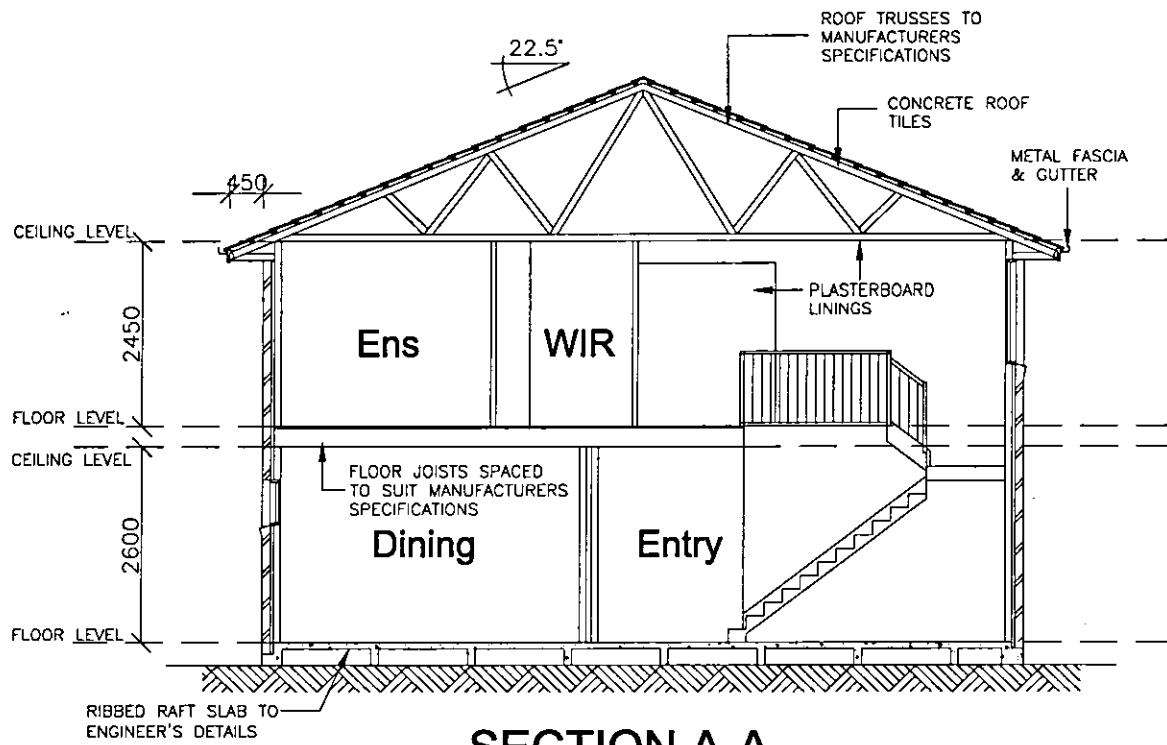
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Shearwater Package**

CLIENT:
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RESIDENTIAL**
SITE ADDRESS:
**LOT 73 (DP: 270385)
GARDEN STREET,
WARRIEWOOD 2102.**

CC PLAN

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SHEET: 6	JOB No: 242039	



SECTION A-A.



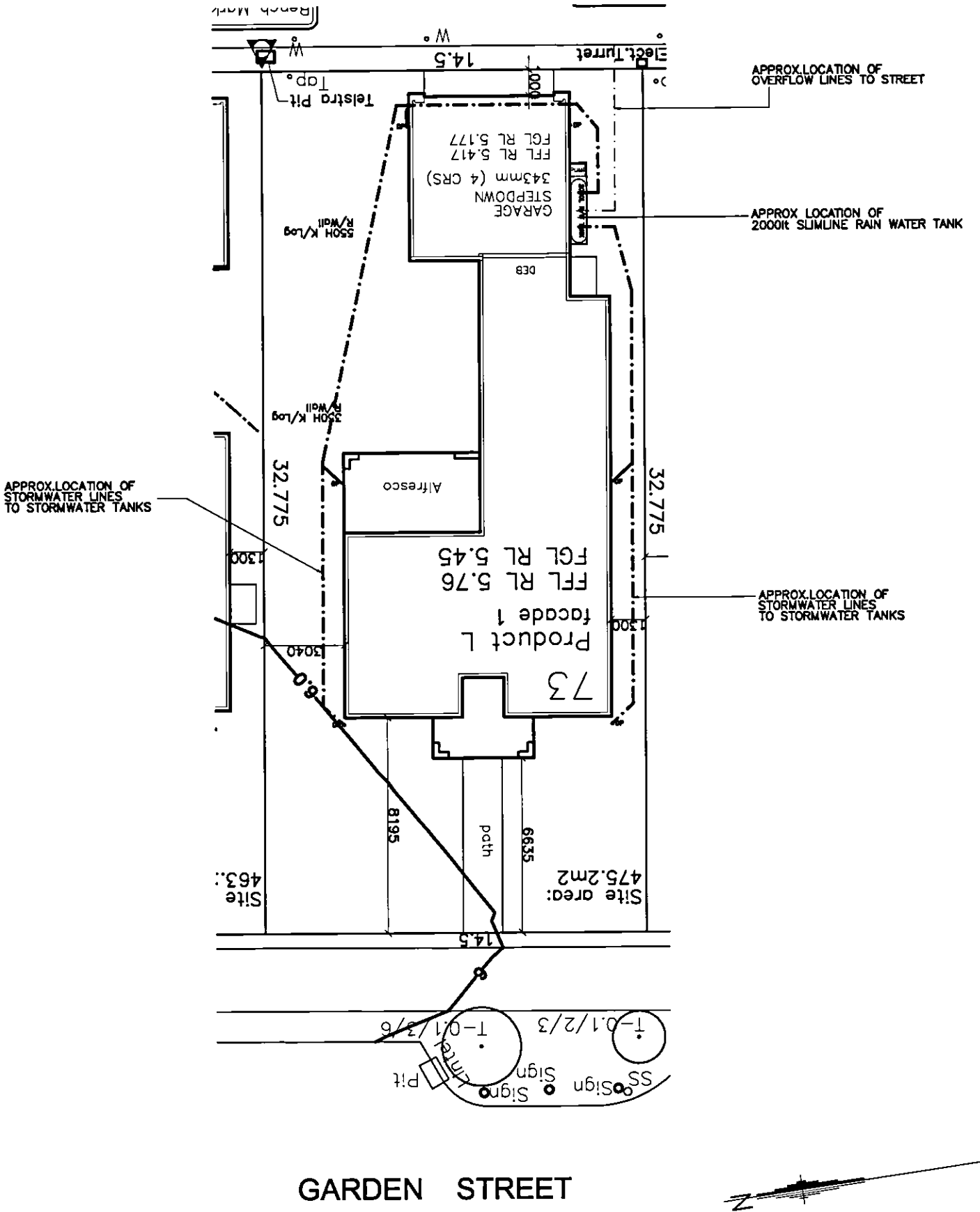
CLIENT'S SIGNATURE: _____

DATE: _____

 Clarendon Residential Group CL No. 2286C A.B.N. 18003882706 Clarendon Homes (NSW) P/L 21 Solent Circuit, Baulkham Hills NSW 2153 T: (02) 8851 5300 F: (02) 8851 5333	© ALL RIGHTS RESERVED This plan is the property of CLARENDON HOMES (NSW) PTY LTD Any copying or altering of the drawing shall not be undertaken without written permission from CLARENDON HOMES (NSW) PTY LTD # DIMENSIONS TO BE READ IN PREFERENCE TO SCALING	PRODUCT: Product L Facade 1 Rear loaded Garage Shearwater Package	CLIENT: CLARENDON RESIDENTIAL	CC PLAN		
			SITE ADDRESS: LOT 73 (DP: 270385) GARDEN STREET, WARRIEWOOD 2102.	DRAWN: AL	DATE: 10/5/06	Rev: B
				RATIO: 1:100	CHECKED: Checked By	
				SHEET: 7	JOB No: 242039	

STORMWATER LINES
TO STREET VIA TANK

POPLAR LANE



S T O R M W A T E R M A N A G E M E N T P L A N.

CLIENT'S SIGNATURE:

DATE:



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DIMENSIONS TO BE READ IN
PREFERENCE TO SCALING

PRODUCT:
Product L
Facade 1
Rear loaded Garage
Shearwater Package

CLIENT:
CLARENDON
RESIDENTIAL

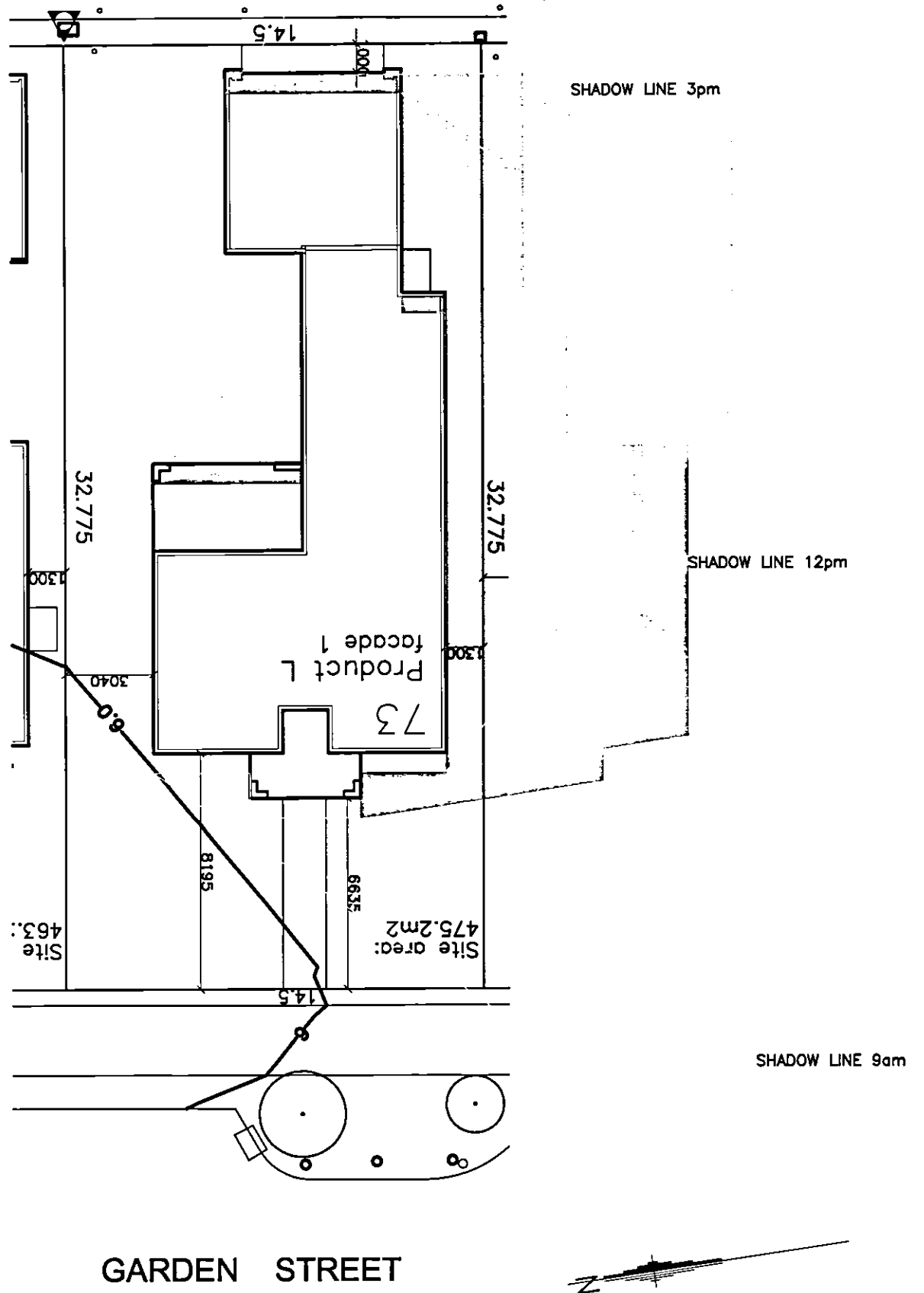
SITE ADDRESS:
LOT 73 (DP: 270385)
GARDEN STREET,
WARRIEWOOD 2102.

CC PLAN

DRAWN: AL	DATE: 10/5/06	Rev: B
RATIO: 1:200 @ A3	CHECKED: Checked By	
SHEET: 2.2	JOB No: 242039	

Rev

POPLAR LANE



S H A D O W D I A G R A M
J U N E 21st

CLIENT'S SIGNATURE: _____		DATE: _____		CLIENT: CLARENDON RESIDENTIAL		CC PLAN												
 BL No. 22962 A.B.N. 18003962708 Clarendon Homes (NSW) P/L 21 Solent Circuit, Baulkham Hills NSW 2153 T: (02) 8851 5300 F: (02) 8851 5333		© ALL RIGHTS RESERVED This plan is the property of CLARENDON HOMES (NSW) PTY LTD Any copying or altering of the drawing shall not be undertaken without written permission from CLARENDON HOMES (NSW) PTY LTD # DIMENSIONS TO BE READ IN PREFERENCE TO SCALING		PRODUCT: Product L Facade 1 Rear loaded Garage Shearwater Package		SITE ADDRESS: LOT 73 (DP: 270385) GARDEN STREET, WARRIEWOOD 2102.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">DRAWN: AL</td> <td style="width: 33%;">DATE: 10/5/06</td> <td style="width: 33%;">Rev. B</td> </tr> <tr> <td>RATIO: 1:200 @ A3</td> <td colspan="2">CHECKED: Checked By</td> </tr> <tr> <td>SHEET: 2.3</td> <td colspan="2">JOB No: 242039</td> </tr> </table>		DRAWN: AL	DATE: 10/5/06	Rev. B	RATIO: 1:200 @ A3	CHECKED: Checked By		SHEET: 2.3	JOB No: 242039	
								DRAWN: AL	DATE: 10/5/06	Rev. B								
								RATIO: 1:200 @ A3	CHECKED: Checked By									
SHEET: 2.3	JOB No: 242039																	

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General Housing Specifications



ADDRESS OF PROPERTY :

GENERAL HOUSING SPECIFICATIONS

ADDRESS – Lot 73 GARDEN STREET
WARRIEWOOD
OWNER – CLARENDON RESIDENTIAL

OWNER:

CONTRACTOR – CLARENDON RESIDENTIAL
LICENCE NO - 2298C

AND

CONTRACTOR:

CONTRACTOR LICENCE NO:

INDEX
GENERAL HOUSING SPECIFICATION
(NSW version revised August 2005)

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3.0	Owner's Obligations	3
4.0	Plans, Permits and Application Fees	4
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1.0 INTRODUCTION

1.1 General

This Specification details the works to be executed and the materials to be used in carrying out those works at the site.

This Specification shall be read as a general specification only. The extent of the works shall be governed by the approved plans and other requirements under the contract.

Any works not fully detailed shall, where appropriate, be sufficiently performed if carried out in accordance with the relevant manufacturer's recommendations or Engineer's Recommendations, and the Building Code of Australia (BCA).

1.2 Preliminary Use

This Specification forms part of the contract and should be read in conjunction with the other contract documents.

1.3 Prevailing Documents

Where there is a difference between the plans and this specification, the plans will take precedence. The Contractor must at all times maintain a legible copy of the plans and this Specification bearing the approval of the relevant Local Authority.

1.4 Size and Dimensions

All sizes and dimensions given in this Specification are in millimetres unless otherwise stated and are nominal only.

1.5 Prime Cost and Provisional Sum Items

Prime cost items and provisional sum items are listed in the Schedule of Works.

1.6 Definitions

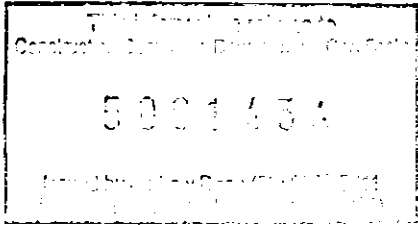
In this Specification:

"Engineer's Recommendations" includes any soil classification report, preliminary footing report, construction footing report and any other report, recommendation, site or other instruction, calculations or plans prepared by an engineer in respect of the works.

Where the words "Local Authority" are mentioned they shall mean the local council, or other governing authority or private certifier with statutory responsibility for the compliance of the work performed.

Where referred to in this Specification, "regulations" shall mean the building regulations and codes (including the BCA, as amended) statutorily enforceable at the time application is made for a construction certificate or other permits, consents or approvals relating to the contract.

Unless the context suggests otherwise, terms used in this Specification shall have the same meaning as in the HIA NSW Residential Building Contract between the Owner and the Builder ("contract").



2.0 **STATUTORY REQUIREMENTS**

2.1 **The Building Works**

The building works shall be constructed in accordance with:

- a. the regulations and in particular the Performance Requirements of the BCA, Housing Provisions, Volume 2,
- b. any conditions imposed by the relevant development consent or complying development certificate,
- c. commitments outlined in the relevant BASIX Certificate,

in so far as the Builder is required in accordance with the Schedule of Works addended to this Specification.

2.2 **Compliance with Requirements of Authorities**

The Builder is to comply with the requirements of all legally constituted authorities having jurisdiction over the building works and the provisions of the Home Building Act.

2.3 **Electricity**

Where there is no existing building, the Builder is to make arrangements for any electrical power to be used in the construction of the building works and is to pay fees and costs incurred therein. The cost of providing and installing any additional poles, wiring, service risers or underground wiring etc., as may be required by the electricity supply authority, shall be borne by the Owner.

2.6 **Sanitary Accommodation**

Prior to the commencement of the building works, unless toilet facilities exist on the site, the Builder shall provide temporary toilet accommodation for the use of subcontractors. Where the Local Authority requires the temporary toilet to be connected to sewer mains, the additional cost of this work shall be borne by the Owner. On completion the Builder shall remove the convenience.

3.0 **OWNER'S OBLIGATIONS**

3.1 **Engineer's Recommendations**

If the contract so indicates, the Owner shall, at the Owner's expense, provide the Builder with reports and recommendations (including soil classification) as to the foundations or footings requirements for the building works prepared by an engineer.

In these circumstances, if the Builder instructs any party to provide such recommendations, the Builder does so only as agent for the Owner.

3.3 **Trades Persons Engaged by Owner**

The Owner shall not engage or employ any tradesperson, trade-contractor or any other person to work on the site without the consent of the Builder which consent may be subject to such terms and conditions as the Builder may stipulate.

3.4 **Items Supplied by Owner**

For all items referred to in this Specification to be supplied by the Owner, it is the responsibility of the Owner to arrange payment for delivery of and protection against damage and theft of all these items.

3.5 Water Supply

Where there is no existing building on the site, the Owner shall, at the Owner's expense, supply adequate water to the site for construction purposes. Unless otherwise specified, the Builder shall pay the standard water meter connection fee to the water supply authority providing this service is pre-laid to the site ready for use. The Owner shall be responsible for any fee to be paid in excess of the standard water meter connection fee.

3.6 Sanitation

Unless otherwise specified:

- (a) the Owner shall, at the Owner's expense, supply sewerage connection riser or common effluent drainage connection riser on the site;
- (b) the Builder shall pay the standard sewer connection fee to the sewerage supply authority providing this service is pre-laid to the site and ready for use; and.
- (c) the Owner shall be responsible for any fee to be paid in excess of the standard sewer connection fee.

4.0 PLANS, PERMITS AND APPLICATION FEES

4.1 Permits and Fees

Subject to a contrary requirement under the contract, the Builder shall lodge all necessary application notices, plans and details with the Local Authority for approval prior to commencement of construction.

4.2 Mines Subsidence

In areas affected by mines subsidence the appropriate authority is to be consulted and any work carried out in accordance with the authority's requirements.

4.3 Setting Out

The Builder shall accurately set out the building works in accordance with the site plan and within the boundaries of the site.

5.0 EXCAVATIONS

5.1 Excavations

The part of the site to be covered by the proposed building or buildings and an area at least 1000mm wide around that part of the site or to the boundaries of the site, whichever is the lesser, shall be cleared or graded as indicated on the site works plan.

Top soil shall be cut to a depth sufficient to remove all vegetation.

Excavations for all footings shall be in accordance with the Engineer's Recommendations and BCA Volume 2, Housing Provisions, Part 3.2.2.

6.0 FOUNDATIONS AND FOOTINGS

6.1 Underfloor Fill

Underfloor fill shall be in accordance with BCA Volume 2, Housing Provisions, Part 3.2.2 or Performance Requirements P2.1, P2.2.3 and Clause 1.0.10.

6.2 Termite Risk Management

Termite treatment shall be carried out in accordance with BCA Volume 2, Housing Provisions, Part 3.1.3 or Performance Requirement P2.1 and Clause 1.0.10.

6.3 Vapour Barrier

The underfloor vapour barrier shall be 0.2 mm nominal thickness, high impact resistance polyethylene film installed in accordance with BCA Volume 2, Housing Provisions, Part 3.2.2 or Performance Requirements P2.1, P2.2.3 and Clause 1.0.10.

6.4 Reinforcement

Reinforcement shall conform and be placed in accordance with the Engineer's Recommendations and BCA Volume 2, Housing Provisions, Part 3.2.3 or Performance Requirements P2.1 and Clause 1.0.10.

Support to all reinforcement shall be used to correctly position and avoid any undue displacement of reinforcement during the concrete pour.

6.5 Concrete

Structural concrete shall not be less than Grade N20 except where otherwise approved by the engineer and in accordance with BCA Volume 2, Housing Provisions, Part 3.2.3 or Performance Requirements P2.1 and Clause 1.0.10.

Pre-mixed concrete shall be manufactured in accordance with AS1379 with delivery dockets kept on site and available for inspection by the engineer.

Concrete shall be placed and compacted in accordance with good building practice.

6.6 Curing

All concrete slabs shall be cured in accordance with AS3600.

6.7 Footings and Slabs on Ground

Concrete slabs and footings shall not be poured until approval to pour concrete is given by the engineer or the Local Authority.

NOTE: Bench levels and floor levels on the site works plan shall be regarded as nominal, unless specified otherwise.

6.8 Suspended Slabs

All concrete slabs, other than those supported on solid ground or properly compacted filling, shall be constructed as suspended slabs. These slabs shall be constructed in accordance with the Engineer's Recommendations.

6.9 Foundation Walls

On footings as previously specified build brick walls to the thickness shown on plan to level underside of floor bearers or plates.

6.10 Sub- Floor Ventilation

Provide adequate cross ventilation to the space under suspended ground floor. No section of the under floor area wall to be constructed in such a manner that will hold pockets of still air and to meet with the requirements of BCA, Volume 2, Housing Provisions, Part 3.4.1 or Performance Requirement P2.2.3 and Clause 1.0.10.

6.11 Sub-Floor Access

Provide access under suspended floors in position where indicated on plan.

7.0 RETAINING WALLS

7.1 Retaining Walls

Where the Builder is required by the Schedule of Works addended to this Specification, the Builder shall construct retaining walls as shown on the approved plans. Where a retaining wall is not included in the Schedule of Works, the construction of the retaining wall shall be the responsibility of the Owner.

8.0 EFFLUENT DISPOSAL/DRAINAGE

8.1 Effluent Disposal/Drainage

In both sewered and unsewered areas, fit bath, wash basin, kitchen, wash tubs, pedestal pan and floor grate to shower recess in positions shown on plan (refer to Schedule of Works). Provide waste pipes with traps to the above fittings and connect to the drainage system. The whole of the work to be performed in accordance with the rules and requirements of the sewerage authority concerned.

8.2 Septic System

Provide and install a septic system where applicable to the requirements of the Local Authority and in accordance with the manufacturer's recommendations.

8.3 Storm Water Drainage

Stormwater drainage shall be carried out in accordance with BCA, Volume 2, Housing Provisions, Part 3.1.2 or Performance Requirement P2.2.1 and Clause 1.0.10.

Allow for the supplying and laying of stormwater drains where shown on the site plan

9.0 TIMBER FRAMING

9.1 Generally

All timber framework sizes, spans, spacing, notching, checking and fixing to all floor, wall and roof structures shall comply with BCA, Volume 2, Housing Provisions, Part 3.4.3 or Performance Requirement P2.1 and Clause 1.0.10 or AS1684. Alternative structural framing shall be to structural engineer's details and certification.

The work shall be carried out in a proper and tradesperson like manner and shall be in accordance with recognised and accepted building practices.

9.2 Floor Framing

All floors not specified to be concrete are to be framed at the level shown. Span and spacing of bearers is to conform to the requirements of the span tables for the appropriate member size. Deep joists to upper floors, where shown, are to be fitted with solid blocking or herringbone strutting as required. All sizes and stress grades of timber members and tie down methods are to be in accordance with AS1684.

9.3 Wall Framing

Plates may be trenched to provide uniform thickness where studs occur. Where plates are machine gauged to a uniform thickness, trenching may be omitted. Wall framing is to be erected plumb and straight and securely fastened to floor framing. Provide a clear space of 40mm between outer face of wall frame and inner face of brick veneer walls. Tie brickwork to studs with approved veneer ties. Ties are to slope downwards towards the veneer wall.

Studs in each panel of walling shall be stiffened by means of solid noggings or bridging pieces at not more than 1350mm centres over the height of the wall. Bottom plates shall be fixed to the floor structure in accordance with AS1684.

9.4 Heads Over Opening (Lintels)

All sizes, stress grade and bearing area shall conform to AS1684. Heads exceeding 175mm in depth shall be seasoned or a low shrinkage timber species used. Plywood web lintels conforming to the requirements of the Plywood Association of Australia may be used. Glue laminated beams conforming to AS1328 or, laminated veneer lumber beams to manufacturer's specification and data sheets may be used.

9.5 Roof Trusses

Where roof truss construction is used, trusses shall be designed in accordance with AS1720 and fabricated in a properly equipped factory and erected, fixed and braced in accordance with the fabricator's written instructions.

9.6 Bracing

Bracing units shall be determined and installed in accordance with AS1684 as appropriate for the design wind velocity for the site. Bracing shall be evenly distributed throughout the building.

9.7 Flooring

Cover floor joists with strip or sheet flooring as shown on plan with particular regard to ground clearance and installation in wet areas as required by the BCA. Thickness of flooring to be appropriate for the floor joist spacing.

Strip and sheet flooring shall be installed in accordance with AS1684.

When listed in Schedule of Works, floors shall be sanded to provide an even surface and shall be left clean throughout.

9.8 Roof Framing

Roofs are to be pitched to the slope shown on plan. Provide tie-down as required for the appropriate design wind speed and roof covering. Provide all rafters, ridges, hips, valleys, purlins, struts, collar ties and wind bracing as appropriate with all sizes and stress grades in accordance with AS1684.

Metal fascias shall be installed in accordance with the manufacturer's recommendations and shall meet the requirements of AS1684.

9.9 Timber Posts

Posts supporting carports, verandas and porches shall be timber suitable for external use, or as otherwise specified, supported on galvanised or treated metal post shoes, unless otherwise specified. Post shall be bolted to all adjoining beams as required by AS1684 for the wind speed classification assessed for the site.

9.10 Corrosion Protection

All metal brackets, facing plates and other associated fixings used in structural timber joints and bracing must have appropriate corrosion protection.

9.11 Hot Water Storage Tank Platforms

Where a hot water storage tank is to be installed in the roof space, the tank platform shall be supported directly off the wall plates and must not be supported on ceiling joists. Where installed in the roof space the storage tank shall be fitted with an appropriate spill tray and overflow drain pipe.

Where a hot water storage tank is supported by the roof structure the structure shall be specifically designed to support all imposed loads

10.0 STEEL FRAMING

10.1 Generally

Steel floor, wall or roof framing shall be installed in accordance with the manufacturer's recommendations and BCA, Volume 2, Housing Provisions, Part 3.4.2 or Performance Requirement P2.1 and Clause 1.0.10.

11.0 ROOFING

All roof cladding to comply with the relevant structural performance and weathering requirements of BCA, Volume 2, Housing Provisions, Part 3.5.1 or Performance Requirements P2.1, P2.2.2 and Clause 1.0.10 and be installed as per the manufacturer's recommendations.

11.1 Tiled Roofing

Cover the roof of the dwelling with approved tiles as selected. The tiles are to be fixed as required for the appropriate design wind speed to battens of sizes appropriate to the spacing of rafters/trusses in accordance with manufacturer's recommendations. Cover hips and ridges with capping and all necessary accessories including starters and apex caps. Capping and verge tiles are to be well bedded and neatly pointed. Roofing adjacent to valleys should be fixed so as to minimise water penetration as far as practicable. As roof tiles are made of natural products slight variation in colour is acceptable.

11.2 Metal Roofing

Provide and install a metal roof together with accessories all in accordance with the manufacturer's recommendations.

Except where design prohibits, sheet shall be in single lengths from fascia to ridge. Fixings of sheet shall be strictly in accordance with the manufacturer's recommendations as required for the appropriate design wind speed. Incompatible materials shall not be used for flashings, fasteners or downpipes.

11.3 Gutters and Downpipes

Gutters and downpipes shall be manufactured and installed in accordance with BCA, Volume 2, Housing Provisions, Part 3.5.2 or Performance Requirement P2.2.1 and Clause 1.0.10. Gutters and downpipes are to be compatible with other materials used.

11.4 **Sarking**

Sarking if used under roof coverings must comply and be fixed in accordance with AS/NZS4200.1 for materials and AS/NZS4200.2 for installation.

11.5 **Sealants**

Appropriate sealants shall be used where necessary and in accordance with manufacturer's recommendations.

11.6 **Flashing**

Flashings shall comply with, and be installed in accordance with BCA, Volume 2, Housing Provisions, Part 3.3.4 or Performance Requirement P2.2.2 and Clause 1.0.10.

12.0 **MASONRY**

12.1 **Bricks**

All clay bricks and brickwork shall comply with AS/NZS4455, AS/NZS4456, AS3700 and BCA, Volume2, Housing Provisions, Part 3.3 or Performance Requirement P2.1 and Clause 1.0.10. Clay bricks are a natural kiln fired product and as such their individual size may vary.

Tolerances shall only be applied to the total measurements over 20 units, not to the individual units.

12.2 **Concrete Blocks**

Concrete blocks are to be machine pressed, of even shape, well cured and shall comply with AS3700. Concrete blockwork shall be constructed in accordance with BCA, Volume 2, Housing Provisions, Part 3.3 or Performance Requirement P2.1 and Clause 1.0.10.

Autoclaved aerated concrete blocks shall be in accordance with the manufacturer's product specification at the time the work is being carried out.

12.3 **Damp Proof Courses**

All damp proof courses shall comply with BCA, Volume 2, Housing Provisions, Part 3.3.4 or Performance Requirement P2.2.2 and Clause 1.0.10. The damp proof membrane shall be visible in the external face of the masonry member in which it is placed and shall not be bridged by any applied coatings, render or the like.

12.4 **Cavity Ventilation (Weep Holes)**

Open perpendicular joints (weepholes) must be created in the course immediately above any DPC or flashing at centres not exceeding 1.2m and be in accordance with BCA, Volume 2, Housing Provisions, Part 3.3.4 or Performance Requirement P2.2.2 and Clause 1.0.10.

12.5 **Mortar and Joining**

Mortar shall comply with BCA, Volume 2, Housing Provisions, Part 3.3.1 or Performance Requirement 2.1 and Clause 1.0.10. Joint tolerances shall be in accordance with AS3700.

12.6 **Masonry Accessories**

Masonry accessories shall comply with BCA, Volume 2, Housing Provisions, Part 3.3.3 or Performance Requirement P2.1 and Clause 1.0.10 and accepted building practices. Wall ties to meet corrosion resistant rating appropriate for the exposure conditions of the site. Provide appropriate ties to articulated joints in masonry.

12.7 **Lintels**

Lintels used to support brickwork opening in walls must be suitable for the purpose as required by BCA, Volume 2, Housing Provisions, Part 3.3.3 or Performance Requirement P2.1 and Clause 1.0.10. Provide one lintel to each wall leaf. Provide corrosion protection in accordance with BCA Part 3.4.4 as appropriate for the site environment and location of the lintels in the structure.

12.8 **Cleaning**

Clean all exposed brickwork with an approved cleaning system. Care should be taken not to damage brickwork or joints and other fittings.

13.0 **CLADDING AND LININGS**

13.1 **External Claddings**

Sheet materials or other external cladding shall be fixed in accordance with the manufacturer's recommendations and any applicable special details.

Where required in open verandas, porches and eaves soffits, material indicated on the plans shall be installed.

13.2 **Internal Wall and Ceilings Linings**

Provide gypsum plasterboards or other selected materials to walls and ceilings. Plasterboard sheets to have recessed edges and be a minimum of 10mm thick. Internal angles in walls from floor to ceiling to be set. Suitable cornice moulds shall be fixed at the junction of all walls and ceilings or the joint set as required. The lining of wet area walls shall be constructed in accordance with BCA, Volume 2, Housing Provisions, Part 3.8.1 or Performance Requirement P2.4.1 and Clause 1.0.10. Wet area lining is to be fixed in accordance with the manufacturer's recommendations.

The ceiling access hole shall be of similar material to the adjacent ceiling.

13.3 **Waterproofing**

All internal wet areas and balconies over internal habitable rooms to be waterproofed in accordance with BCA, Volume 2, Housing Provisions, Part 3.8.1 or Performance Requirement P2.4.1 and Clause 1.0.10.

14.0 **JOINERY**

14.1 **General**

All joinery work (metal and timber) shall be manufactured and installed according to accepted building practices.

14.2 Door Frames

External door frames shall be a minimum of 32mm thick solid rebated 12 mm deep to receive doors. Internal jamb linings shall be a minimum of 18mm thick fit with 12mm thick door stops. Metal door frames shall be installed where indicated on drawings in accordance with the manufacturer's recommendations.

14.3 Doors and Doorsets

All internal and external timber door and door sets shall be installed in accordance with accepted building practices Unless listed otherwise in the Schedule of Works doors and door sets shall be manufactured in accordance with AS2688 and AS2689.

14.4 Window and Sliding Doors

Sliding and other timber windows and doors shall be manufactured and installed in accordance with AS2047.

Sliding and other aluminium windows and doors shall be installed in accordance with manufacturer's recommendations and AS2047.

All glazing shall comply with BCA, Volume 2, Housing Provisions, Part 3.6 or Performance Requirements P2.1, P2.2.2 and Clause 1.0.10, and any commitments outlined in the relevant BASIX Certificate

14.5 Architraves and Skirting

Provide architraves and skirting as nominated on the plans or listed in the Schedule of Works.

14.6 Cupboards/Kitchens/Bathroom

Units shall be installed to manufacturer's recommendations. Bench tops shall be in a water resistant material.

14.7 Stairs, Balustrades and other Barriers

Provide stairs or ramps to any change in levels, and balustrades or barriers to at least one side of ramps, landings and balconies as per BCA, Volume 2, Housing Provisions, Part 3.9.1 or Performance Requirement P2.5.1 and Clause 1.0.10 for stair construction and Part 3.9.2 or Performance Requirements P2.1, P2.5.2 and Clause 1.0.10 for balustrades.

15.0 SERVICES

15.1 Plumbing

All plumbing shall comply with the requirements of the relevant supply authority and AS3500. The work is to be carried out by a licensed plumber.

Fittings as listed in the Schedule of Works shall be supplied and installed to manufacturer's recommendations. Fittings, hot water system and any rainwater harvesting facilities shall be appropriate to satisfy any commitment outlined in the relevant BASIX Certificate

15.2 Electrical

Provide all labour and materials necessary for the proper installation of electricity service by a licensed electrician in accordance with AS3000 and the requirements of the relevant supply authority. Unless otherwise specified, the electrical service shall be 240 volt, single phase supply.

15.3 Gas

All installation (including LPG) shall be carried out in accordance with the rules and requirements of the relevant supply authority.

15.4 Smoke Detectors

Provide and install smoke alarms manufactured in accordance with AS3786 as specified or as indicated on the plans and in accordance with BCA, Volume 2, Housing Provisions, Part 3.7.2 or Performance Requirement P2.3.2 and Clause 1.0.10.

15.5 Thermal Insulation

Where thermal insulation is used in the building fabric or services, such as air conditioning ducting or hot water systems, it shall be installed in accordance with manufacturer's recommendations to achieve the R-Values required by BCA Part 3.12.1 to meet Performance Requirement NSW P2.6.1 (a) or as outlined in the relevant BASIX Certificate.

16.0 TILING

16.1 Materials

Cement mortar and other adhesives shall comply with AS3958.1 or tile manufacturer's recommendations.

16.2 Installation

Installation of tiles shall be in accordance with AS3958.1, manufacturer's recommendations or accepted building practices.

Where practicable, spacing between tiles should be even and regular. Provide expansion joints where necessary. All vertical and horizontal joints between walls and fixtures e.g. bench top, bath, etc. and wall/floor junctions to be filled with flexible mould resistant sealant. All joints in the body of tiled surfaces shall be neatly filled with appropriate grout material as specified by the tile manufacturer or accepted building practice. As tiles are made of natural products a slight variation in colour is acceptable.

16.3 Walls

Cover wall surfaces where indicated on the drawings with selected tiles. Tiles are to be fixed to the wall substrate with adhesives compatible with the substrate material. Provide all required strips, vent tiles and recess fittings.

16.4 Floors

Lay selected floor tiles in sand and cement mortar, or adhesive compatible with the substrate material, to areas indicated on the drawings. Where required, fit approved edge strips or metal angle to exposed edges in doorways or hobless showers in wet areas in accordance with BCA, Volume 2, Housing Provisions, Part 3.8.1 or Performance Requirement P2.4.1 and Clause 1.0.10.. Provide adequate and even fall to wastes where required.

17.0 PAINTING

17.1 General

All paint used shall be of a quality suitable for the purpose intended and the application shall be as per the manufacturer's recommendations. The colours used shall be as listed in the Schedule of Works or other relevant contract document. All surfaces to be painted shall be properly prepared to manufacturer's recommendations.

18.0 SIGNATURES

This is the Specification referred to in the contract No..... Date:.....

Signed by the said
Owner in the
presence of

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Witness

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Owner's Signature

...../...../
Date

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Witness

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Owner's Signature

...../...../
Date

Signed by the said
Builder in the
presence of

.....
Witness

.....
Builder's Signature

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Date