



CONSTRUCTION CERTIFICATE APPLICATION

Made under the Environmental Planning and Assessment Act 1979 Sections 109C
(1) (b), 81a (2) and 81a (4)

Pittwater Council

PO Box 882, Mona Vale NSW 1660

Tel: (612) 9970 1111

Fax: (612) 9970 7150

Internet: www.pittwaterlga.com.au

Email: pittwater_council@pittwater.nsw.gov.au

SITE DETAILS

Unit/Suite:	Street No:	Street:
	162	NARRABEEN PARK PARADE
Suburb:	Lot No:	Deposit /Strata Plan:
MONA VALE	15	

DEVELOPMENT CONSENT

Development Application No:	Determination Date:
NO256/06.	27/7/2006.

APPLICANT DETAILS

Name/Company:	Contact Person:
SITE ALTERNATIVES P/L.	KEVIN SHANSHAN
Postal Address:	Contact Numbers:
P.O. Box 6215	Phone (H/B): 9488 6800
PYMBUL NSW 2073	Mobile: 0418 578 766
	Fax: 9144 6864
Signature of Applicant:	Date:
	4.9.2006.

OWNERS DETAILS

Name:	If Company, contact person:
GRETEL SHANSHAN	
Postal Address:	Contact Numbers:
3 Melbourne Ave	Phone (H/B): 9979 3636
Mona Vale NSW 2103	Mobile: 0409 224 772
	Fax: 9979 4545

As the owner of the land to which this application relates, I consent to this application. I also give consent for the authorised Council Officer to enter the land to carry out inspections.

Signature of Owners:

Date:

4.9.2006.

If more than one owner, every owner must sign. If the owner is a company, the form must be signed by an authorised director and the common seal must be stamped on this application.
If the property has been recently purchased, written confirmation from the purchaser's Solicitor must be provided.
If the contracts have been exchanged for the purchase of the land, the current owner is to sign the application.

DEVELOPMENT DETAILS

Type of Work:	☒ Building Work
OR	
	☐ Subdivision Work
Description of proposal – (Provide brief, concise details):	
CONSTRUCTION OF NEW DWELLING, SWIMMING	
POOL, DRIVEWAY & LANDSCAPING WORKS.	

WHO WILL BE DOING THE BUILDING WORKS?

☐ Owner Builder	
Owner Builders Permit No:	
Copy of Owner Builders permit attached:	☐ Yes ☐ No – to be provided with Notice of Commencement Form
<i>If you are an Owner-Builder for the residential building work exceeding \$5000 you must apply for a permit at NSW Office of Fair Trading, 1 Fitzwilliam Street, Paramatta NSW 2150 Australia. Tel: 61 2 98950111 Fax: 61 2 9895 0222.</i>	

OR

☒ Licensed Builder	
Builder's License Number 24260C.	
Name of Builder: SITE ALTERNATIVES	Phone: 94886800
Contact person: KEVIN SHANAHAN P/L.	Mobile: 0418578766
Address: P.O Box 6215	Fax: 91446864
PYMBLE NSW 2073	
Insurance Company: LUMLEY.	Insurance Certificate attached: ☒ Yes ☐ No – to be provided with Notification of Commencement form
<i>If you are using a licensed builder for residential building work exceeding \$12,000 you must obtain Home Building Act Insurance. A certificate of insurance must be provided with this application or submitted with the Notification of Commencement form.</i>	

VALUE OF PROPOSED DEVELOPMENTValue of Works: \$ 550,000 (including full cost of labour and materials)**DO YOU NEED TO PAY THE BUILDING INDUSTRY LONG SERVICE LEVY?**☒ Yes☐ No*Only required if the development involves building works exceeding \$25,000.00.***OFFICE USE ONLY**

Fee Type	Cashier's Code	Fee Amount
Construction Certificate Application Fee	TCER	1628
Long Service Levy Fee	QLSL	1925
Driveway/Street Levels	ESTR	
Sec 94 Contributions		
Bonds/Guarantees		
Other Fees		
TOTAL		
Date of Receipt:	Receipt No:	Accepted By:

PRIVACY AND PERSONAL INFORMATION PROTECTION NOTICE

Purpose of collection:	To enable Council as the consent authority to assess your proposal.
Intended recipients	Council Staff and any other relevant government agency that may be required to assess the proposal.
Supply:	The information is required by legislation.
Consequence of Non-provision:	Your application may not be accepted, not processed or rejected for lack of information
Storage:	The Pittwater Council will store details of the application and any subsequent decision in a register that can be viewed by the public.
Retention period:	Hard copies of the application will be destroyed after 7 years and electronic records will be kept indefinitely.
Please contact Council if this information you have provided is incorrect or changes.	

R# 200758
MC 7/19/06 \$3553CC0435/06
\$ = 3553.00

STATISTICAL RETURN FOR AUSTRALIAN BUREAU OF STATISTICS

What is the area of the land?	Area in square metres	633 m ²	
Gross floor area of existing building?	Area in square metres	NIL	
If no existing building, write "NIL"			
What is the existing building or site used for at present?	Main uses:	RESIDENTIAL LOT	
	Other uses:		
Does the site contain a dual occupancy?	☐ Yes	☒ No	
Gross floor area of proposed building?	Proposed floor area in square metres	305 m ²	
What will the proposed building to be used for?	Main uses:	RESIDENTS	
	Other uses:		
How many dwellings:			
Are pre-existing at this property?	Dwellings:	NIL	
Are proposed to be demolished?	Dwellings:	NIL	
Are proposed to be constructed?	Dwellings:	ONE	
How many storeys will building consist of?	Storeys:	2	
What are the main building materials?			
Walls		Roof	
Full Brick	☐	Aluminium	☐
Brick veneer	☐	Concrete or slate	☐
Concrete, masonry	☒	Tile	☐
Steel	☐	Fibrous cement	☐
Fibrous cement	☐	Steel	☒
Timber/weatherboard	☒	Other	☐
Cladding-aluminium	☐	Unknown	☐
Curtain glass	☐		
Other	☐		
Unknown	☐		
Floor		Frame	
Concrete	☒	Timber	☒
Timber	☐	Steel	☐
Other	☐	Other	☐
Unknown	☐	Unknown	☐

APPLICANTS CHECK LIST

Note: This list is intended as a guide to the type of information to be submitted. Some items may not be required and Section B of the Conditions of Development Consent for the building works may specify further additional information required with submission of your Construction Certificate Application.

Application Form –	☒ Owners Consent ☒ Applicant's Signature ☒ Long Service Levy ☒ Driveway/Street levels Application
Supporting Documentation - (3 copies of each)	☒ Architectural Plans ☒ Quick Check Plans endorsed by Sydney Water ☒ Construction Specifications for Building Works ☒ Structural Engineer's Plans ☒ Structural/Geotechnical Certificates ☒ Landscape Plans ☒ Driveway Level Plans ☒ On-site Stormwater Detention Plans ☒ Drainage Plans on Site Storm Management ☒ Erosion and Sediment Management Plan ☒ Sydney Water Quick Check Plans ☐ Subdivision Work Plans ☒ Schedule of External Finishes/Colours ☐ Fire Safety Measures Schedule ☒ Form No. 2 – "Geotechnical Risk Management Policy for Pittwater" ☒ Details and location of fencing for Swimming Pool to comply with AS 1926-1986 "Fences and Gates for Private Swimming Pools" ☐ Specifications for construction of buildings in Bushfire-prone areas ☐ Security Deposit / Section 94 contributions

**Pittwater Council**

Form No UI 203

Consent by Road Authority for Work in Road Reserve**Section 139 – Roads Act 1993****1 July 2006 - 30 June 2007**

PLEASE PRINT

Applicant: SITE ALTERNATIVES PTY LIMITED.Postal Address: P.O BOX 6215 PYMBLE NSW Postcode: 2073.Phone (W): 94886800 (M): 0418578766.Property Address: 162 NARRABEEN PARK PDE MONA VALE 2103.

Subject to the payment of the appropriate fee, the Applicant is hereby permitted to construct the driveway (and/or associated work) as detailed below, in strict accordance with the **CONDITIONS** overleaf.

I/We the undersigned agree to abide by the said conditions.

Applicant's Signature: Date: 1/9/2006.**FEES (includes GST)**

Consent for access driveway construction only (includes 2 site inspections) per allotment for residential single and dual occupancy.	\$132.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for residential single and dual occupancy which includes any of: retaining structures, stairs or landscape treatment.	\$330.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for other than residential single and dual occupancy.	\$154.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for other than residential single and dual occupancy which includes any of: retaining structures, stairs or landscape treatment.	\$440.00

NOTE TO CUSTOMER SERVICE: PHOTOCOPY APPLICATION FORM AND STAPLE WITH RECEIPT FOR CUSTOMER'S RECORD

Office Use Only:		Form No: UI 203
CODE: ESTR	1.7.06 - 30.6.07	FEE PAID: \$
Late Fee: \$600 when work commenced prior to Issue of Consent		
RECEIPT NO:	ISSUED BY:	DATE:

SECTION 139 – ROADS ACT 1993**CONDITIONS OF CONSENT**

1. The Applicant shall, at all times, keep indemnified Council from and against all actions, suits, proceedings, losses, costs, damages, changes, claims and demands in any way arising out of or by reason of anything done or omitted to be done by the Applicant in respect of the work in question.
2. The Applicant, at all times for the duration of this Consent, will not interrupt or otherwise disturb the traffic flow on the road without first obtaining the consent of Council.
3. The applicant shall make good any damage caused to the property of any person or any property of Council by reason of the carrying out of any work by the Applicant under the Conditions of this Consent.
4. Should the Applicant fail to comply with any of these conditions or any requirement of Council as provided then this Consent shall permanently lapse and any part of the work remaining within the road at that time shall be deemed to be an obstruction or encroachment under Section 107 of the Roads Act 1993.
5. This Permit/Consent receipt must be held on the job and produced to any officer of Council when called upon.
6. ***All work within the Road Reserve (including excavation) is to be carried out by Council Authorised Contractors only.***
7. Construction of the vehicular access is to be strictly in accordance with the profile supplied.
8. A formwork inspection and approval by Council is required prior to construction of the driveway.

Sandra,

The first form is for Council to come out and assess what the driveway profile is.

Once they have been advised, then the second form is for the owner to apply for the Section 139.

Thanks , Fiona

Stormwater Drainage Calculations
162 Narrabeen Park Parade
Warriewood NSW
Proposed Site Drainage Conditions

AJYCE Job 06058
Sep-06

Total site area	633 m2
total roof area	243.3 m2
terrace front	38 m2
driveway	26.8 m2
stairs up	8.3 m2
crushed stone path	75.9 m2
pool equipment	3 m2
total impervious area	395.3 m2
total roof impervious to RWT	243.3
total gd impervious area	152 m2
pool	36.4 m2
therefore soft landscaping	201.3 m2

Under Council Stw Management

B5.2 Rainwater Tanks

Hard Area to tank (roof)	243.3 m2
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RWT Vol Required	4000 litres
Basix Requirement (min)	2800 litres

B5.3 On-site Drainage

Hard Surface Area	8000 litres	for 395m2 impervious area
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existing impervious area	201.7 m3	(from architect)
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New impervious area	193.6 m2
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OSD tank Required - B5.3	4000 litres	for 193.6m2 impervious area	PSD (l/s)
OSD Tank Required Council DA Conditions	3000 litres	using DA Consent Conditions	7
			6

Provided RWT each	3000 litres
Number	2
Total Volume	6000 litres

Oversized by	2000 litres	(using Council)
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credit to OSD using 50%	1000 litres
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therefore OSD required		PSD (l/s)
OSD tank Required - B5.3	3000 litres	for 193.6m2 impervious area
OSD Tank Required Council DA Conditions	2000 litres	using DA Consent Conditions
		7
		6

Permitted Site Discharge	
say allow	6 l/s

IL outlet	38.85 m AHD
outlet pipe height	0.1 m
centre outlet	38.9 m AHD
centre orifice	38.9 m AHD
orifice size	0.05 m
orifice area	0.001964 m2
top storage water	40.25 m AHD
head	1.35 m
Discharge	0.006165 m3/s
Discharge	6.164991 l/s

Storage Volume	pit 1	pit 2	Total
pit length	1.2	0.9	
pit width	1.2	0.9	
pit area	1.44	0.81	
IL	38.85	38.97	
Top Water	40.25	40.25	
height storage water	1.4	1.28	
volume	2.016	1.0368	3.0528



Pittwater Council
Information for Access Driveway Profiles
1 July 2006 – 30 June 2007

To: Kevin Shanahan, Site Alternatives Pty Ltd **Date:** 17 August 2006
Receipt No: 197239
Amount: 66.00
Postal Address: PO Box 6215
PYMBLE NSW 2073

ACCESS DRIVEWAY PROFILE AT: 162 Narrabeen Park Parade, Mona Vale 2103

- The proposed vehicular access driveway profile shall be as per the enclosed plan NH.
- **Type of Construction:** Domestic
- **Slab Construction:** Vehicular access slab 5.5m long, x 3.5m wide at gutter crossing to 3.5m wide at the boundary.

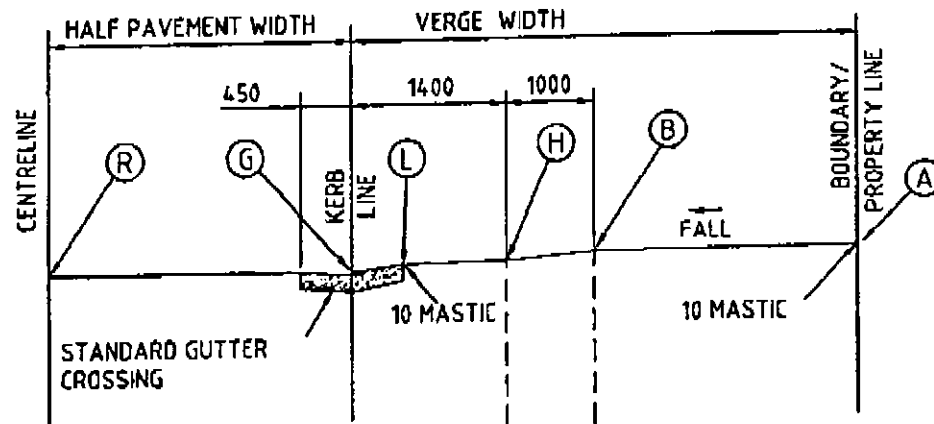
Council will only permit an absolute maximum gradient of 25% (1 in 4) measured at any point on the driveway and that an ease may be required for access into the car stand area, carport or garage. Refer to relevant attached profile.

- All work within the road reserve (including excavation) in connection with the above, is to be carried out by authorised Contractors only;
- Quotations for the work specified above should be obtained from any of the contractors on Council's list and should be for the whole of the work stated;
- Construction of vehicular access will be strictly in accordance with the profile supplied; and
- A formwork inspection by Council is required prior to construction. (Provide minimum 24 hours notice)

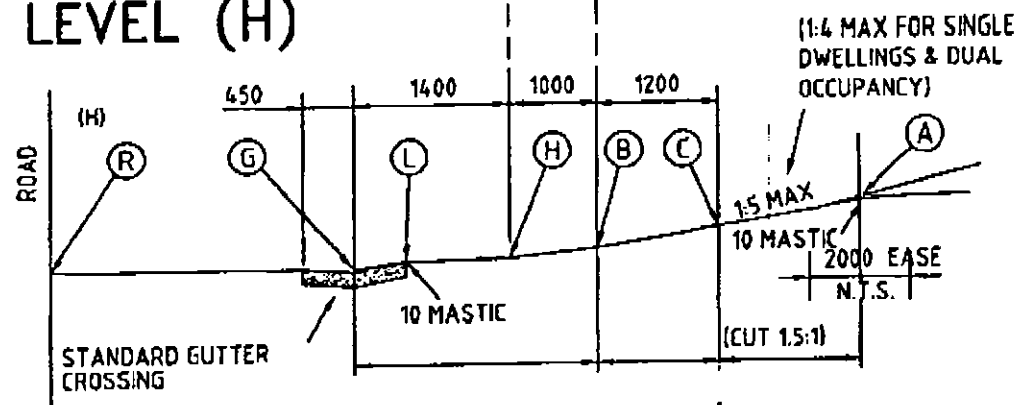
1. **NOTE THAT THIS INFORMATION SHEET DOES NOT CONSTITUTE AN APPROVAL TO COMMENCE OR PROCEED WITH ANY WORK ON SITE.**
 2. **A SECTION 139 CONSENT UNDER THE ROADS ACT – 1993 IS REQUIRED (FORM UI203).**
 3. **FAILURE TO OBTAIN SUCH CONSENT PRIOR TO COMMENCING WORK WILL INCUR A PENALTY.**

Sigi Melderis
ASSETS / RESTORATIONS OFFICER
Telephone: 9970 1348

NORMAL (N)



HIGH LEVEL (H)



(MAX BATTER FROM EDGE OF DRIVEWAY TO FINAL G.L.)
(WHERE THERE IS NO CONSTRUCTED FOOTPATH)
(1:6) (1:6 → 1:2) (FILL 1:2)

POINT	REMARKS	LEVELS
R	ROAD CENTRELINE	
G	INVERT OF GUTTER	
L	BACK OF LAYBACK	100 ABOVE "G"
H	1000 FROM BACK OF LAYBACK	130 ABOVE "G"
B	2400 FROM KERB LINE	MAX 200 ABOVE "G"
C	3600 FROM KERB LINE	MAX 400 ABOVE "G"
A	BOUNDARY	EASE REQUIRED AT GRADE CHANGE

NOTE

- To be read in conjunction with Pittwater 21 Development Controls.



PITTWATER COUNCIL

Standard Driveway Profile

NORMAL TO HIGH

PLAN No.

PWC-DW01

REV No. B

DATE 5/9/05



Pittwater Council

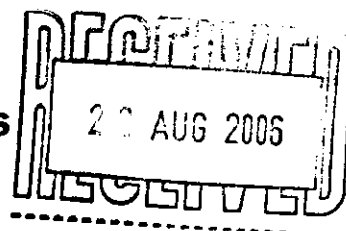
List of Council Approved Contractors 1st July 2006 – 30 June 2007 Vehicle Footpath Crossings & Associated Works

- The following contractors are authorised to carry out the above construction within the road reserve in the Pittwater Council area. No other persons are permitted to carry out excavation or any other part of this work.
- Please note that the contractors are specifically recommended as vehicle footpath crossing contractors only and in some instances the contractors may not hold a Builder's Licence or a Restricted Builder's Licence.

Company Name	Address1	Address2	Phone	Mobile
Acacia Paving	71 Smith Avenue	ALLAMBIE NSW 2100	9939 3917	0414 397 052
Action Concreting & Const. Pty Ltd	P.O. Box 521	COLLARROY NSW 2097	9982 2135	0414 355 772
A-Grade Concrete	PO Box 6142	NARRAWEENA NSW 2100	9982 2616	0410 565 772
A.K. Concrete Solutions Pty Ltd	164 Madagascar Drive	KINGS PARK NSW 2148	9837 8322	0412 392 352
Antonio Tomaino	97 Wyadra Avenue	NORTH MANLY NSW 2099	9938 3841	0422 994 938
Barrie Bree Concreting	29 Seaview Avenue	NEWPORT NSW 2106	9997 8840	0415 183 148
Brook Concrete P/L (Bomanite)	26 Adderton Road	TELOPEA NSW 2117	9638 2926	0418 218 672
Capano Concrete Pty Ltd	40 Rowley Street	SMITHFIELD NSW 2164	9604 8715	0409 838 238
Coastline Concrete Pty Ltd	47 Blighs Road	CROMER NSW 2099	9982 4805	0412 278 502
C-Side Concreting & Pump Hire Pty Ltd	43 Wesley Street	ELANORA HEIGHTS NSW 2101	9913 1653	0404 872 111
Cubic Concrete	12A Linden Street	MOUNT DRUITT NSW 2770		0407 016 062
D Spencer & Associates	7/1 Marina Close	MOUNT KURING-GAI NSW 2080	9457 0332	0425 212 570
Florimo, John	17 Iluka Avenue	ELANORA HEIGHTS NSW 2099	9913 7440	0415 296 978
H J Bellamy & Sons Pty Ltd	P.O. Box 541	COLLARROY NSW 2097	9981 4137	0418 280 904
Kakoda Concrete Pty Ltd	32 Aldinga Road	WAMBERAL NSW 2260	4384 2460	0421 342 172
Kelpie Concrete Pty Ltd	20 Spring Road	CURL CURL NSW 2096	9905 8398	0418 164 604
Leo Concreting Pty Ltd	PO Box 99	QUAKERS HILL NSW 2763	4574 0296	0410 442 862
Luch's Concrete Pty Ltd	15 Milpera Place	CROMER NSW 2099	9982 8739	0411 879 252
Matlock Landscapes and Design Pty Ltd	3 Rooke Court	KELLYVILLE NSW 2155	8824 8353	0412 366 588
Newborn Concrete & Landscaping	24A Holt Street	NORTH RYDE NSW 2113		0425 323 332
Northcrete Concreting Pty Ltd	8 David Road	COLLARROY PLATEAU 2097	9971 7868	0418 239 958
Northshore Formwork & Concreting Pty Ltd	30 Nimbey Avenue,	NARRAWEENA NSW 2099	9981 4390	0418 169 368
North Shore Paving Co Pty Ltd	16 Moore Avenue	LINDFIELD WEST NSW 2080	9416 8455	0418 269 692
Northside Formwork & Constructions Pty Ltd	PO Box 168	MONA VALE NSW 1660	9997 6363	0411 529 004
Pavecrete Pty Ltd	PO Box 710	AVALON NSW 2107	9913 8500	0418 772 798
Pave-On-Line Pty Ltd	232 Coreen Avenue	PENRITH NSW 2750	4721 2566	0438 212 582
Performance Concrete Service	Unit 23/10-12 Jenkins Street,	COLLARROY NSW 2097		0414 182 552
Peter Yorke Landscapes Pty Ltd	32 Sydney Road	WARRIEWOOD NSW 2102	9944 6598	0414 997 644
PRC Constructions Pty Ltd	14 Buena Vista Avenue	MONA VALE NSW 2103	9940 1019	0410 303 808
S & E Cavallieri Pty Ltd	29 Quinlan Parade	MANLY VALE NSW 2093	9948 5442	0412 285 301
Shorecent Concreting Pty Ltd	18A Pine Avenue	BROOKVALE NSW 2100	9944 0860	0402 853 921
T.B.R.H. Concreting and Landscaping P/L	P.O. Box 2078	NORMANHURST NSW 2076	9489 2620	0413 072 702
The Gardenmakers Pty Ltd	Unit 4/1 Vuko Place	WARRIEWOOD NSW 2101	9970 7600	
Topform Construction	PO Box 704	MONA VALE NSW 1660	9997 2295	0418 266 378



Pittwater Council
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1 July 2006 – 30 June 2007



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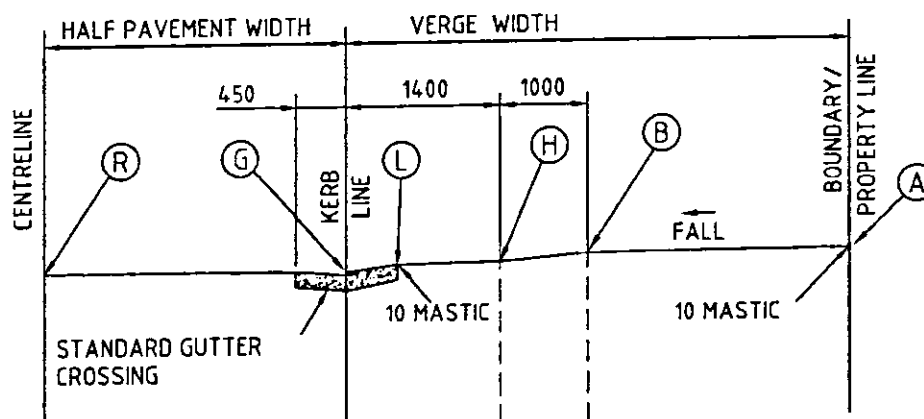
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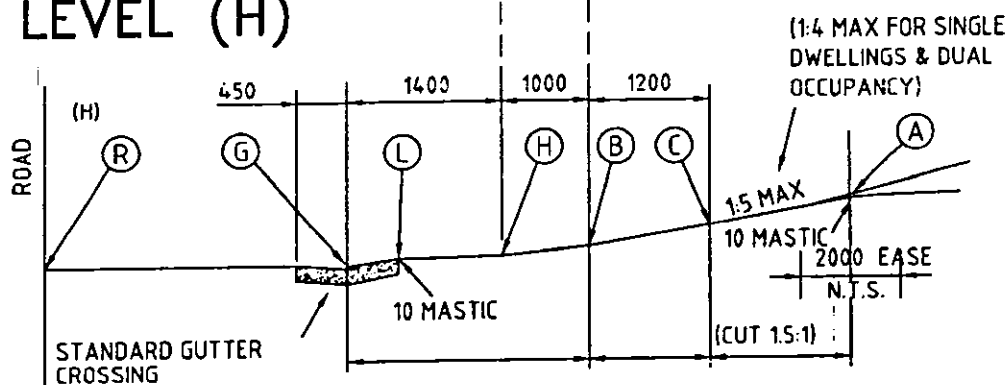
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Sigi Melderis
ASSETS / RESTORATIONS OFFICER
Telephone: 9970 1348

NORMAL (N)



HIGH LEVEL (H)



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(WHERE THERE IS NO CONSTRUCTED FOOTPATH)
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H	1000 FROM BACK OF LAYBACK	130 ABOVE "G"
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C	3600 FROM KERB LINE	MAX 400 ABOVE "G"
A	BOUNDARY	EASE REQUIRED AT GRADE CHANGE

NOTE

- To be read in conjunction with Pittwater 21 Development Controls.



PITTWATER COUNCIL

Standard Driveway Profile

NORMAL TO HIGH

PLAN No.

PWC-DW01

REV No. B

DATE 5/9/05



Pittwater Council

List of Council Approved Contractors 1st July 2006 – 30 June 2007

Vehicle Footpath Crossings & Associated Works

- The following contractors are authorised to carry out the above construction within the road reserve in the Pittwater Council area. No other persons are permitted to carry out excavation or any other part of this work.
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The Gardenmakers Pty Ltd	Unit 4/1 Vuko Place	WARRIEWOOD NSW 2101	9970 7600	
Topform Construction	PO Box 704	MONA VALE NSW 1660	9997 2295	0418 266 375

Builders who wish to carry out their own work only. (No quotes)

Gubler & Associates Pty Ltd	49 Careel Head Road	NORTH AVALON NSW 2107	9918 2896	
Lamrock Builders	PO Box 76	AVALON NSW 2107	9918 7037	0418 406 221

home warranty insurance



Lumley General Insurance Limited ABN 24 000 036 279
Lumley House, Level 9, 309 Kent Street Sydney NSW 2000
Tel 02 9248 1111 Fax 02 9248 1122

Home Building Act 1989 (New South Wales)

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, namely -

Home Warranty Insurance Policy No.:	SYBW-0048-0274
Has been issued by:	Lumley General Insurance Limited
In respect of:	New Single Dwelling, Concrete Pool & Spa
At:	Lot 15 162 Narrabeen Park Parade MONA VALE, NSW 2103
Contract Value:	\$550,000.00
Carried Out By:	Site Alternatives Pty Ltd
For:	Gretel Shanahan

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 of Issue: 30/08/2006

Signed for and on behalf of **Lumley General Insurance Limited**

Quick Check Ref No: 1761246

Building Plans Approved - Requirements Apply	
☒	The Building Plans submitted have been approved and are being returned. Additional charges now apply (see invoice attached)
☒	The foundations/footings for the proposed structure/building are required to be supervised by Sydney Water's Civil Maintenance group. They can be contacted (to arrange for the supervision) on the phone number indicated on the approval stamp (on the back of one of the plans)
☐	The existing Sydney Water sewer is required to be concrete encased. This work needs to be carried out by an accredited Minor/Major Works Supplier, who must first lodge an application at a Quick Check agent. Details of the Minor/Major Works Supplier can be found at www.sydneywater.com.au → Building Developing and Plumbing → Supplier Information → Constructor of Minor Works/Constructors

Building Plans NOT Approved	
☐	The Building Plans submitted have NOT been approved and are being returned.
☐	The location of Sydney Water's assets (sewer, stormwater & watermain) will need to be accurately determined before the plans can be reviewed. The customer will need to carry out a Service Protection Application (also known as a 'Peg Out') which will accurately determine the location of the asset/s, as well as determining its depth and the property sub strata details (soil, clay, sand, rock etc). The Service Protection Application can be carried out by an accredited supplier, whose details can be found at www.sydneywater.com.au → Building Developing and Plumbing → Supplier Information → Sewer Locations Pegouts. Alternatively an application can be made at a Quick Check agent, for Sydney Water to carry out this work.
☐	Once you have received the Service Protection Application report, you will need to give this report to the Structural Engineer who is designing the foundations for the structure so that they can design the foundations appropriately to ensure that the structure does not impact on Sydney Water's asset/s.
☐	Upon completion of the Service Protection Application and once the engineers plans have been prepared/amended, you will need to submit the building plans, engineers plans and a copy of the Service Protection Application report to Sydney Water via a Quick Check Agent for review.
☐	The indemnity attached needs to be completed, signed by the owner/s of the property and returned with the Building Plans to Sydney Water via a Quick Check Agent.
☐	Other Comments:

Building Plans Approved - No Specific Requirements	
☐	The Building Plans submitted have been approved. Sydney Water does not have any specific requirements in this instance and does not require the works to be supervised.

Approval Stamp - Signature Details				
Development Services Representative	Jannine Brodbeck	Phone	9828-8358	Facsimile



Application Lodgement Summary

Sydney
WATER

Reference Number 1771511

Date Requested: Fri September 1 2006

WAMS Number: 11129272

Agent Sydney Water, Liverpool, Cnr Bigge and Moore St, Liverpool
Applicant Mr Jp & Mrs Gt Shanahan, 48 Chesterfield Pde Bronte 2024
Property/Asset 162 Narrabeen Park Pde, Mona Vale 2103 (Gf Shanahan) PNum: 3437318
150 mm VC Sewer Main - (2791257)
150 mm VC Sewer Main - (2793981)
Maintenance Hole - (1056928)
Product Pier Supervision

Charge	Product Cost	GST	Total
Pier Supervision Fee	\$286.55	\$28.65	\$315.20

Your application has been sent to **North Coast Depot, Government Road, Beacon Hill** for action.
Enquiries can be directed to **8977 5204**, fax **9975 7972** or DX : **DX2522W**.
The anticipated turnaround time is **4 days**



Transaction Summary

**Date Requested** Fri September 1 2006**A.B.N** 49 776 225 038**Agent** Reece Mona Vale, 10 Taronga Pl Mona Vale**Applicant** Mr Jp & Mrs Gt Shanahan, 48 Chesterfield Pde Bronte 2024

This document will be a tax invoice when you make payment.

Transaction Details	Charge	GST	Total
162 Narrabeen Park Pde, Mona Vale 2103			
09 1761246 Determining Requirements on Builder - Technical Services	\$80.91	\$8.09	\$89.00
09 1761246 Pier Supervision Fee	\$286.55	\$28.65	\$315.20
Transaction Total	\$367.46	\$36.74	\$404.20



Application Lodgement Summary

Sydney
WATER

Reference Number 1761246
DOLFIN Number D06/7-01073

Date Requested: Mon August 21 2006

Agent Reece Mona Vale, 10 Taronga Pl Mona Vale
Applicant Mr Jp & Mrs Gt Shanahan, 48 Chesterfield Pde Bronte 2024
Property/Asset 162 Narrabeen Park Pde, Mona Vale 2103 (Gf Shanahan) PNum: 3437318
150 mm VC Sewer Main - (2791257)
150 mm VC Sewer Main - (2793981)
Maintenance Hole - (1056928)
Product Building Plan Approval Application

Charge	Product Cost	GST	Total
Building Plan Approval Application Fee	\$23.60	\$0.00	\$23.60

Your application has been sent to **Technical Services Liverpool, Cnr Bigge/Moore Streets, Liverpool** for action.
Enquiries can be directed to **(02) 9828 8553**, fax **(02) 9828 8629** or DX : **Dx2546W**.
The anticipated turnaround time is **8 days**

SEWER AFFECTED
 SYDNEY WATER SUPERVISOR REQUIRED
 OTHERWISE LETTER OF COMPLIANCE
 WILL NOT BE ISSUED

SYDNEY WATER

Proposed building is APPROVED for construction over/adjacent to Sydney Water's sewer provided

1. Foundations are below 1.1 zone of influence
2. No part of the building or its foundations is less than 0.6m horizontal distance from the centre-line of the sewer
3. Foundations are constructed in accordance with Engineer's detail plans as submitted to and stamped by Sydney Water

NOTE: ABOVE CONDITIONS, AND ANY OTHERS, MUST HAVE SYDNEY WATER SUPERVISION OTHERWISE LETTER OF COMPLIANCE WILL NOT BE ISSUED Joe Rocca

Supervision can be arranged by phoning Inspector on 89775203 between 8.30 a.m. and 3.30 p.m. giving at least 48 HOURS NOTICE

See file BA6 3437318

E Brodbeck
 TECHNICAL SERVICES
 BLACKTOWN CUSTOMER CENTRE
01.09.06

SYDNEY WATER CORPORATION

4. Proposed R/C Pool to be founded to below invert of sewer.

5. Proposed Residence to be founded outside of zone. No Special Precautions.

SYDNEY WATER
FILLING OF SWIMMING POOLS

The water supply to the pool must be drawn from a metered service and any tap or hose used to fill the pool must be at least 150mm above the highest possible water level of the pool.

EMPTYING OF SWIMMING POOLS

Pools emptying into Sydney Water's Sewer must:

- (a) discharge into a gully through a pipe.
- (b) discharge only in dry weather, with prior approval from Sydney Water's Regional Office.

NOTE: IT IS PROHIBITED TO DISCHARGE POOL WATER INTO ANY OF SYDNEY WATER'S VACUUM SYSTEMS SEWERS.

MANAGER
 BLACKTOWN CUSTOMER CENTRE
 Per E Brodbeck 01.09.06
 SYDNEY WATER CORPORATION

Swimming Pool Stamp

Permits are required to fill all new swimming pools with a capacity greater than 10,000L. Contact Sydney Water on 13 20 92 during business hours.

Fines of \$220 will apply for filling pools without a permit

162 NARRABEEN PARK PARADE, WARRIEWOOD

- A01 SITE PLAN 1:200
- A02 BASEMENT PLAN 1:100
- A03 GROUND FLOOR PLAN 1:100
- A04 FIRST FLOOR PLAN 1:100
- A05 ELEVATIONS 1:100
- A06 ELEVATIONS 1:100
- A07 SECTIONS 1:100
- A08 SECTIONS 1:100
- A09 DRIVEWAY PLAN & SECTIONS 1:100
- A10-15 SHADOW DIAGRAMS 1:200

TOTAL SITE AREA = 633m²

PROPOSED IMPERVIOUS AREAS = 292m² = 46%

DWELLING FOOTPRINT = 192m²
TERRACE & POOL HARD AREAS = 54m²

DRIVEWAY AND STAIRS = 36m²
OTHER SOFT AREAS (too narrow for classification as soft areas) = 10m²

PROPOSED SOFT AREAS = 341m² = 54%

POOL WET AREA = 28m²

SOFT LANDSCAPING FRONT = 96m²

SOFT LANDSCAPING (REAR AND SIDE) = 217m²

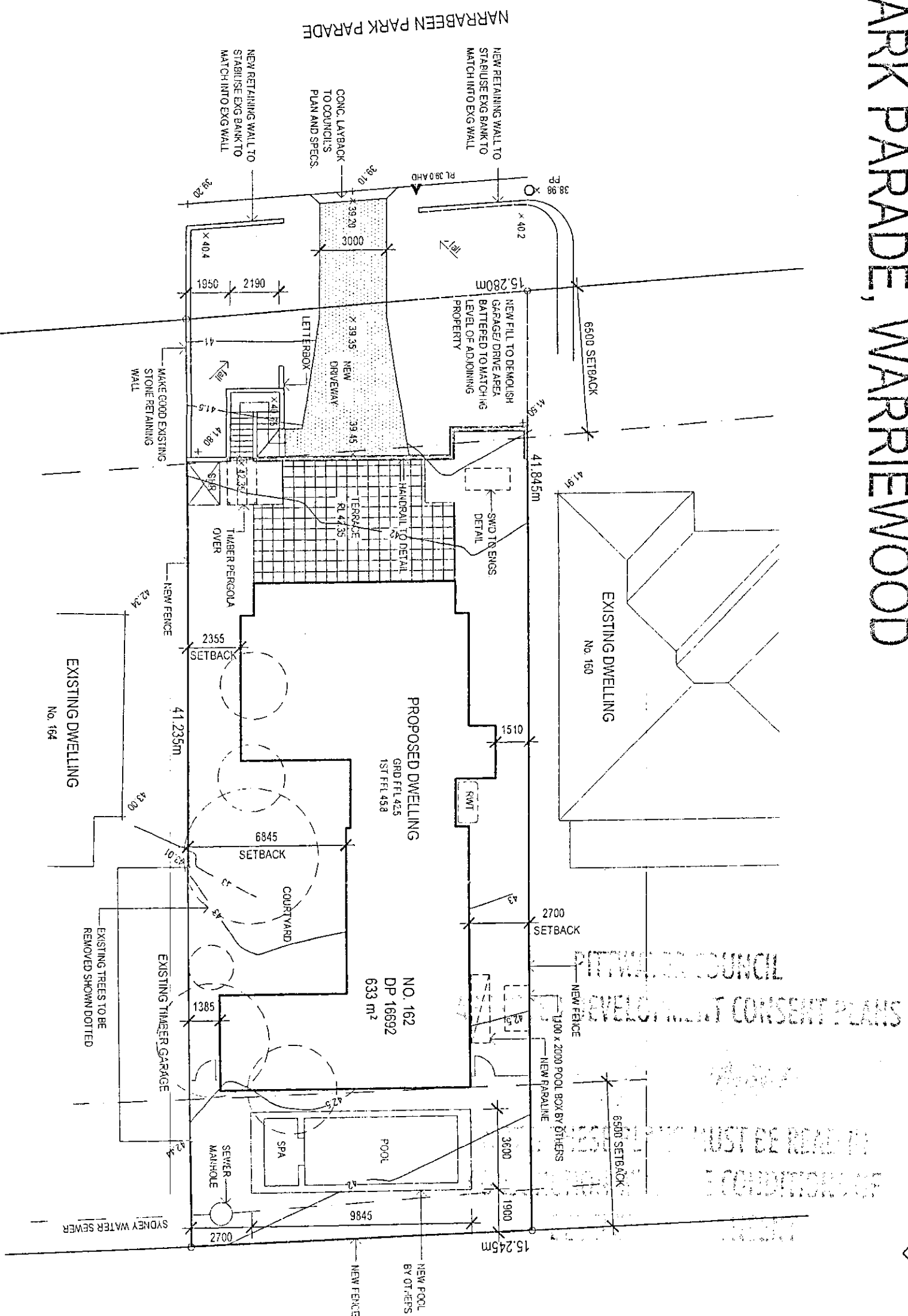
EXISTING AREAS = 201.7m²

EXISTING DWELLING FOOTPRINT = 145.5m²

TOTAL EXISTING IMPERVIOUS AREAS = 201.7m²

TOTAL EXTRA IMPERVIOUS = 90m²

AMENDMENTS					
ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION	MAY 06			
B	FACED FRONT GARDEN FENCE FROM STAIR AND PANTRY REDUCED	14.07.06			
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					
O					
P					
Q					
R					
S					
T					
U					
V					
W					
X					
Y					
Z					



SITE PLAN 1:200

PROJECT TITLE NEW DWELLING 162 MARRABEEN PARK PARADE, WAREHEWOOD	DRAWING TITLE SITE PLAN SCALE 1:200 @ A3	DRAWING NO. 904	DRAWING NAME 15 DRAWING NUMBER A01-B
	CHECKED BY SJ	DATE 9/04	
	DRAWING NUMBER 15		

ADVICE ON BUILDING PLAN APPROVALS

Quick Check Agent

The Quick Check Agent has lodged your application with Sydney Water and determined that your proposed building/structure may potentially impact on Sydney Water's infrastructure.

The Quick Check Agent has advised you to contact a Water Servicing Coordinator for approval of your proposed building/structure. The Water Servicing Coordinator acts as your contact in dealing with Sydney Water.

Some of the activities required prior to approving your plan may include;

- Reviewing your proposed building/structure plans and discussing options.
- Advise if a Service Protection Report (also known as a Pegout) is required.
- Advise if structural engineering detail is required.
- Arrange supervision of concrete encasement and piling.
- Specify asset protection requirements and/or alternative options.

Water Servicing Coordinator

Water Servicing Coordinators are located across Sydney, Illawarra and the Blue Mountains. Sydney Water recommends that you contact several Water Servicing Coordinators to ensure you choose the one that is most appropriate for you.

To assist in your selection, Sydney Water recommends you ask each Water Servicing Coordinator the following type of questions:

1. How long will it take to obtain the Building Plan Approval?
2. How much do you charge for a Building Plan Approval?
3. If I require a Service Protection Report (pegout), how much will it cost?
4. Are there any other charges that I may have to pay?

For more information and a list of Water Servicing Coordinators, visit the Building, Developing and Plumbing section of Sydney Water's website at www.sydneywater.com.au

No. 1731832

NARRABEEN PARK PDE.

W.O. 47832

W.S. & D.S.

SEWERAGE SERVICE SHEET

Municipality of Warringah.

Scale 1:500

Distances/depths in metres;
pipe diameters in millimetres

for House Services Engineer

SYMBOLS AND ABBREVIATIONS

Boundary Trap	IP	Induct Pipe
Inspection Shaft	MF	Manic Flap
Pit	T	Tubs
Grease Interceptor	K	Kitchen Sink
Gully	W	Water Closet
P Trap	B	Bath Waste
Reflex Valve	H	Handbasin
Cleaning Eye	S	Shower
Vert Vertical Pipe	WIP	Wrought Iron Pipe
SV Vent Pipe	CIP	Cast Iron Pipe
SV Soil Vent Pipe	F	Floor Waste
DC Down Cast Cowl	M	Washing Machine

PLUMBING

Supervised by	Date
Inspector	

SEWER AVAILABLE
Where the sewer is not available and a special inspection is involved the Board accepts no responsibility for the suitability of the drainage in relation to the eventual position of the Board's Sewer.

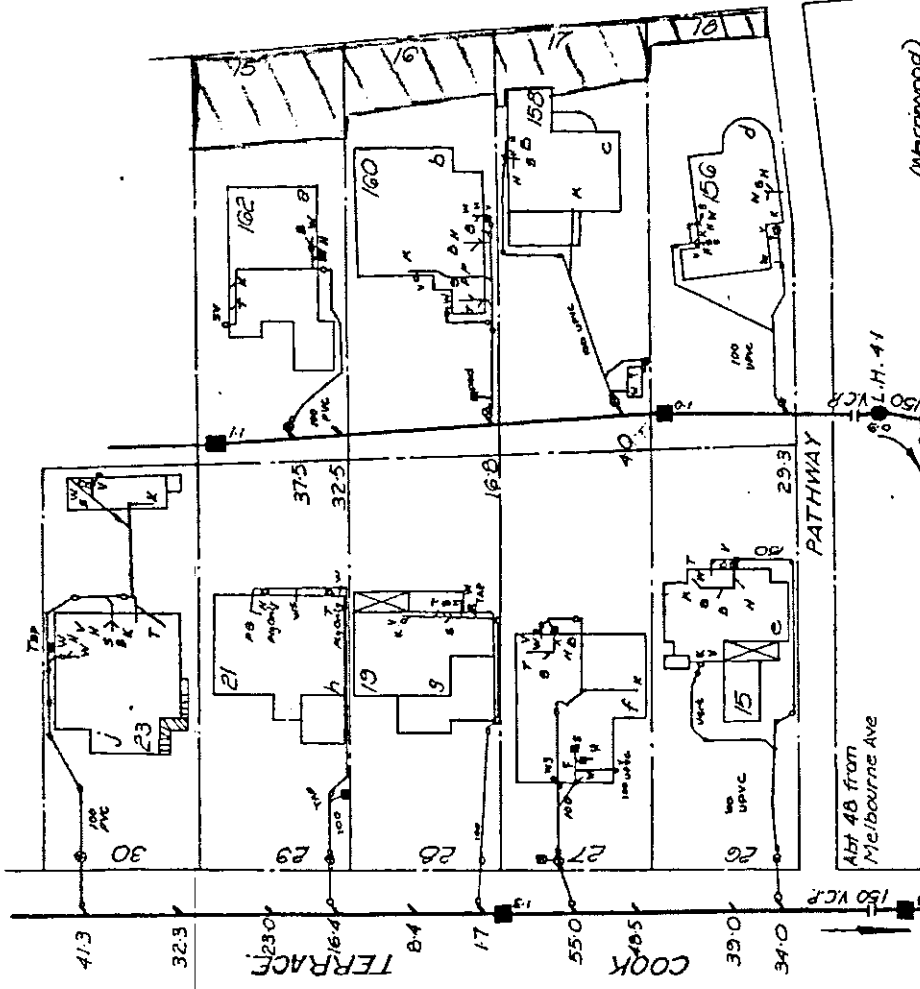
BRANCH OFFICE

Date	Initial
Drainage	Plumber
Boundary Trap	W/Is not required

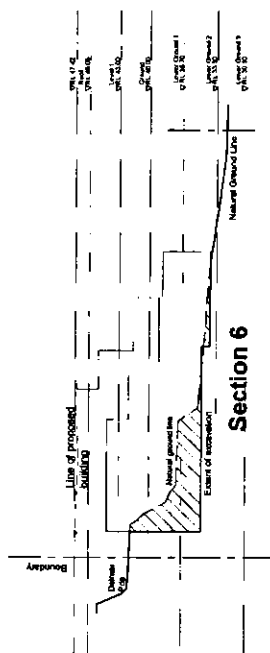
DRAINAGE

Supervised by	Date
Inspector	
Examined by	Chief Inspector
Tracing Checked	

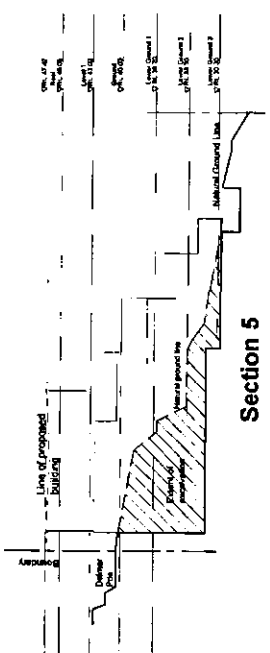
g. 16.11.77 0.31.1.78 26.4.79 f. 28.5.80



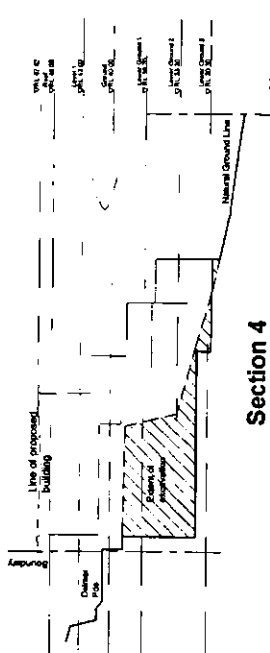
NOTE This diagram only indicates availability of a sewer and any sewerage service shown as existing in Sydney Water's records. The existence and position of Sydney Water's sewers, stormwater channels, pipes, mains and structures should be ascertained by inspection of maps available at any of Sydney Water's Customer Centres. Position of structures, boundaries, sewers and sewerage services shown hereon are approximately only.



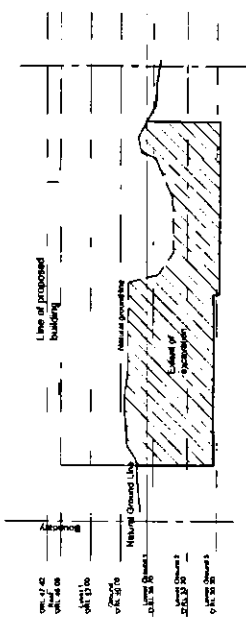
Section 6



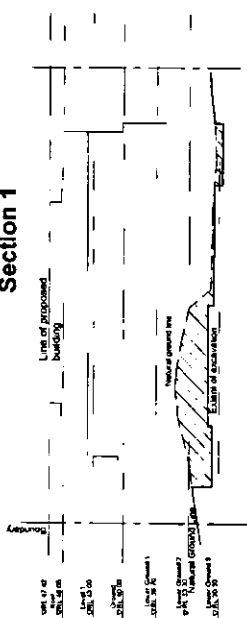
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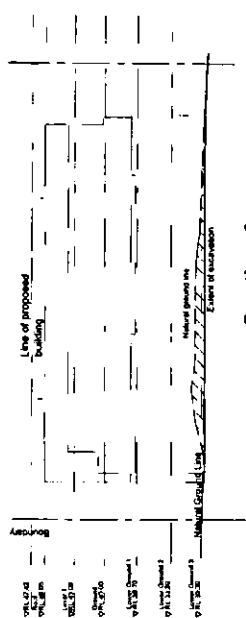
Section 4



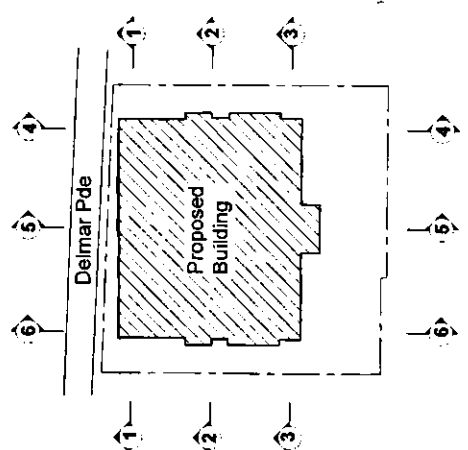
Section 1



Section 2



Section 3



Key Plan

NOTE:
Extent of excavation is
2000 cubic meters, for
method of disposal refer
to statement

Edifice Construction Pty Ltd	
COPYRIGHT IN THIS DRAWING IS THE PROPERTY OF SAM ROMANOUS ARCHITECTS. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF SAM ROMANOUS ARCHITECTS.	
PRINCIPAL ARCHITECTS	
WRITTEN DIMENSIONS TAKE PREFERENCE TO SCALED DIMENSIONS. SCALE DIMENSIONS WITHOUT PRIOR APPROVAL OF ARCHITECTS.	
DIMENSIONS ON SITE BEFORE COMMENCEMENT.	
PROJECT DESCRIPTION	Residential Development
PROJECT ADDRESS	19-23 Delmar Parade
DESIGNER	Dee Why
DATE	24 Mar 2006
SCALE	1:500 (A1)
PROJECT NO.	1905
ARCHITECT NO.	A-1

SAM ROMANOUS ARCHITECTS
125 GOSGROVE ROAD BELFIELD 2191
TEL: 9742 5960 FAX: 9742 5068 MOB: 9425 250 333
24 Mar 2006
1:500 (A1)

SPECIFICATION FOR BUILDING WORK**THE WORK**

The building work described in the
building contract dated

No/street	162 Narrabeen Park Parade
Suburb/town	Mona Vale
Municipality/shire/city	Pittwater
Reference to title	
Lot/position	15
Deposited Plan (DP)/Strata Plan (SP)	16692
Volume	
Folio	

THE PARTIES

Owner(s)	Gretel Shanahan
Address	3 Melbourne Ave Mona Vale NSW 2103
Builder	Site Alternatives Pty Limited
Address	P.O Box 6215 Pymble
Australian Business Number (ABN)	90 053 034 080
Licence/registration number	24260C

SIGNATURES

Owner(s)	
Date	
Builder	
Date	

1	GENERAL REQUIREMENTS	1
2	SITE PREPARATION	5
3	CONCRETE CONSTRUCTION	8
4	TIMBER AND STEEL CONSTRUCTION	10
5	BRICK AND BLOCK CONSTRUCTION	14
6	INSULATION AND SARKING	17
7	ROOFING	18
8	CLADDING	20
9	DOORS AND WINDOWS	22
10	LINING	25
11	BLOCK AND TILE FINISHES	27
12	FLOOR COATINGS AND COVERINGS	30
13	PAINTING	31
14	TIMBER FIXTURES	33
15	PLUMBING INSTALLATIONS	36
16	ELECTRICAL INSTALLATIONS	40
17	LANDSCAPING	44
18	PAVING	47

1 GENERAL REQUIREMENTS**1.1 GENERAL****Interpretation**

Owner: Means the same as "principal" or "proprietor".

Builder: Means the same as "contractor".

Metallic-coated: Includes zinc-coated steel, zinc/iron alloy-coated steel, and aluminium/zinc-coated steel.

Supply: Means "supply only" - do not install.

Provide: Means "supply and install".

Required: Means required by the contract documents or by the local council or statutory authorities.

Proprietary: Means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

Standards

Use referenced Australian or other standards (including amendments) which are current one month before the date of the contract except where other editions or amendments are required.

Manufacturers' or suppliers' recommendations

Select, store, handle and install proprietary products or systems in accordance with the current published recommendations of the manufacturer or supplier.

1.2 AUTHORITIES AND ESTABLISHMENT**Existing services**

Attend to existing services as follows:

- If the service is to be continued, repair, divert or relocate as required. If such a service crosses the line of a required trench, or will lose support when the trench is excavated, provide permanent support for the existing service.
- If the service is to be abandoned, cut and seal or disconnect, and make safe.

Temporary services and works

Provide temporary toilet accommodation. Connect to the sewer main if required by the Local Authority.

Use of existing services

Existing services may be used as temporary services for the performance of the contract.

Signs

Provide a signboard displaying the owners name, the lot number and the builder's name, address and licence number.

1.3 EXECUTION AND COMPLETION**Survey marks**

Preserve and maintain the owners survey marks in their true positions.

Rectification: If the proprietor's survey marks are disturbed or obliterated, immediately give notice and rectify the disturbance or obliteration.

Removal of temporary work, services and plant

Remove temporary work services and construction plant within 10 working days after practical completion.

Rectification: Clean and repair damage caused by the installation or use of temporary work and services and restore existing facilities used during construction to original condition.

Final cleaning

Remove rubbish and surplus material from the site and clean the work throughout.

Warranties

Name the owner as warrantee and give the owner copies of manufacturers' warranties.

Instruction manuals

Give the owner manufacturers' instruction manuals.

Operation

Ensure moving parts operate safely and smoothly.

Surveyor's certificate

Give the owner a certificate which confirms that the work, including boundary fences, has been correctly located.

Services layout

Give the owner a plan which shows the location of underground services.

Authorities' approvals

Give the owner evidence of approval of the local council and statutory authorities whose requirements apply to the work.

Keys

Give the owner two keys for each set of locks keyed alike and two keys for each lock keyed to differ.

1.4 TERMITE PROTECTION**General**

Standard: To AS 3660.1-2000 (*Termite management - New buildings*).

Chemical soil barriers - reticulation systems: Submit evidence that the system has been type tested to AS 3660.1-2000 (*Termite management - New buildings*) Appendix E.

Termite barrier notice: Provide a durable notice permanently fixed in a prominent location to BCA Volume 2 clause 3.1.3.2 (b) (*Installation of termite barriers*).

Termite protection schedule

Location	Method
Slab	Termimesh
Slab penetrations	Termimesh
Slab control joint and footing/slab joints	Termimesh
Under slabs	Termimesh
Building perimeters	Termimesh
Under suspended floors	N/A
Timber poles and posts	N/A

1.5 TIMBER GENERALLY**Unseasoned timber**

If unseasoned timber is provided, or variations in moisture content is likely, make allowance for shrinkage, swelling and differential movement.

Durability

General: Provide timbers with natural durability appropriate to the conditions of use or preservative treated timbers of equivalent durability.

Minimum requirement: To the **Natural and treated timber durability table**.

- Natural durability class of heartwood: To AS 5604-2003 (*Timber - Natural durability ratings*).
- Preservative treatment: To the AS 1604 series (*Specification for preservative treatment*).

Natural and treated timber durability table

Exposure	Untreated timber	Treated timber	Remarks
	Required durability class to AS 5604	Required hazard class to AS 1604 series	

Inside, above ground. Completely protected from the weather. Well ventilated	Class 4	H1	Treated timber resistant to lyctids. Untreated timber must be protected from termites
Inside, above ground. Protected from wetting with nil leaching. Well ventilated	Class 3	H2	Treated timber resistant to borers and termites. Untreated timber must be protected with a finish
Above ground, exposed to weather. Periodic moderate wetting and leaching	Class 2	H3	Treated timber resistant to borers termites and moderate decay. Applicable to weatherboards, fascias, pergolas (above ground), window joinery, framing and decking
In-ground	Class 1	H4 (Severe wetting and leaching)	Treated timber resistant to borers termites and severe decay. Applicable to fence posts, greenhouses, pergolas (in-ground) and landscaping timbers
		H5 (Extreme wetting and leaching and/or critical applications)	Applicable to retaining walls, piling, house stumps, building poles, cooling tower fill

1.6 STEEL GENERALLY

Durability

General: Provide metals with inherent durability appropriate to the conditions of use or proprietary metallic and/or organic coatings of equivalent durability.

Minimum external requirements: To the **Stainless and coated steel table**.

Stainless and coated steel table

External environment	Heavy steel	Light steel	Steel
Includes cavity wall and roof spaces not protected from moisture penetration by sheathing or sarking	members including lintels more than 3.2 mm thick	framing, wall ties, connectors and accessories less than 3.2 mm thick	cladding, lining, trims and flashings
Low corrosivity	Galvanize after fabrication	Galvanize after fabrication	Metallic-coated sheet
- More than 10 km from salt water with breaking surf	300 g/m ²	300 g/m ²	AZ150
- More than 1 km from salt water without breaking surf		Metallic-coated sheet Z600/AZ200	
Medium corrosivity	Galvanize after fabrication	Galvanize after fabrication	Metallic-coated sheet
- 1 - 10 km from salt water with breaking surf	600 g/m ²	470 g/m ²	AZ200
- 100 - 1000 m from salt water without breaking surf		Galvanised wire	
- Non-heavy industrial areas		470 g/m ²	

External environment Includes cavity wall and roof spaces not protected from moisture penetration by sheathing or sarking	Heavy steel members including lintels more than 3.2 mm thick	Light steel framing, wall ties, connectors and accessories less than 3.2 mm thick	Steel cladding, lining, trims and flashings
Severe marine - 200-1000 m from salt water with breaking surf - 0 - 100 m from salt water without breaking surf - Heavy industrial areas	Stainless steel 316 or 316L	Stainless steel 316 Engineered polymer	Metallic- coated sheet AZ200 plus organic coating

2 SITE PREPARATION**2.1 GENERAL****Standard**

Groundworks for slabs and footings: To AS 2870-1996 (Residential slabs and footings – Construction).

Interpretation

Rock: Monolithic material with volume greater than 0.5 m³ which cannot be removed until broken up by mechanical means such as rippers or percussion tools.

Bad ground: Ground unsuitable for the work, including fill liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances and ground which is, or becomes, soft, wet or unstable.

Line of influence: A line extending downward and outward from the bottom edge of a footing, slab or pavement and defining the extent of foundation material having influence on the stability or support of the footings, slab or pavement.

Subgrade: The trimmed or prepared portion of the formation on which the pavement or slab is constructed.

Immediate notice

If rock or bad ground is encountered, advise the owner immediately.

2.2 ENVIRONMENTAL PROTECTION**Erosion control**

Avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems.

Dewatering

Keep the site free of water and prevent water flow over new work.

2.3 SITE CLEARING**Extent**

Limit clearing to areas to be occupied by construction, paving or landscaping.

Clearing operations

Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble. Remove grass to a depth just sufficient to include the root zone.

Grubbing

Grub out or grind stumps and roots over 75 mm diameter to a minimum depth of 500 mm below subgrade under construction, and 300 mm below the finished surface in unpaved areas.

Removal of topsoil

General: Remove the topsoil layer of the natural ground which contains substantial organic matter over the areas to be occupied by construction and paving.

Maximum depth: 100 mm.

Topsoil stockpiles

Stockpile site topsoil required for re-use. Protect stockpiles from contamination by other excavated material, weeds and building debris.

Surplus material

Take possession of surplus material and remove it from the site.

2.4 EXCAVATION**Extent**

Excavate to give the levels and profiles required for construction, site services, paving, and landscaping. Allow for compaction or settlement.

Foundations

After excavation, confirm that the bearing capacity is adequate.

Bearing surfaces

Provide even plane bearing surfaces for load-bearing elements including footings. Step for level changes. Make the steps to the appropriate courses if supporting masonry.

Reinstatement

If excavation exceeds the required depth, or deteriorates, reinstate with fill to the correct depth, level and bearing value.

Existing footings

If excavation is required below the line of influence of an existing footing, use methods which maintain the support of the footing and ensure that the structure and finishes supported by the footing are not damaged.

Grading

Grade the ground surface externally and under suspended floors to drain ground or surface water away from buildings without ponding.

2.5 SURFACE PREPARATION**General**

Before placing fill, ground slabs or load-bearing elements, remove loose material, debris and organic matter and compact the ground to achieve the required density.

Placing fill

Place fill in layers and compact each layer to achieve the required density.

Moisture content

If necessary to achieve the required density or moisture content, adjust the moisture content of the fill before compaction.

2.6 PILING**Bored piers**

After excavating bored piers, remove loose material and water from the base and confirm the bearing capacity. Do not allow loose material to fall down the hole before or during concreting; provide a liner if necessary.

2.7 SERVICE TRENCHES**Excavation**

Generally, make trenches straight between manholes, inspection points and junctions, with vertical sides and uniform grades.

Trench widths

Keep trench widths to the minimum consistent with the laying and bedding of the relevant service and construction of manholes and pits.

Backfilling

General: Backfill service trenches as soon as possible after laying the service. Place backfill in layers. Compact each layer to a density sufficient to minimise settlement.

Backfill material: Excavated spoil or well graded inorganic material with maximum particle size of 75 mm.

- Next to services: Do not place any particles greater in size than 25 mm within 150 mm of services.
- Under paved areas: Coarse sand, controlled low strength material or fine crushed rock.
- In reactive clay sites classified M, M-D, H, H-D or E to AS 2870-1996 (*Residential slabs and footings – Construction*): Impervious material.

3 CONCRETE CONSTRUCTION

**3.1 GENERAL****Cross reference**

Conform to the *General requirements* worksection for termite protection.

Standards

Concrete structures generally: To AS 3600-2000 (*Concrete structures*).

Ground slabs and footings: To AS 2870-1996 (*Residential slabs and footings - Construction*).

3.2 GROUND SLAB VAPOUR BARRIER**Material**

General: Provide a proprietary vapour barrier which consists of high impact resistant polyethylene film minimum 0.2 mm thick which has been pigmented and branded by the manufacturer.

Base preparation

Blind the surface with sufficient sand to cover any hard projections. Wet the sand just before placing the vapour barrier.

3.3 FOOTINGS AND SLABS

All concrete footings and slabs are to be constructed in accordance with Engineer's plans and specification.

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

3.4 REINFORCEMENT

Reinforcement shall conform and be placed in accordance with AS 3600-2000, AS 2870-1996 and the engineer's plans and specifications.

3.5 CONCRETE**Ready mixed supply**

Standard: To AS 1379-1997 (*Specification and supply of concrete*).

Maximum slump: 100 mm.

Concrete placing

Depth: If concrete is deeper than 350 mm, place it in layers so that each succeeding layer is blended into the preceding one by the compaction process.

Slabs and pavements: Place concrete uniformly over the width of the slab so that the face is generally vertical and normal to the direction of placing.

Compaction

Vibrate concrete to remove entrapped air, but avoid over-vibration that may cause segregation.

Curing

Protection: Protect concrete from premature drying and from excessive hot, cold and/or windy conditions.

Method: Cure concrete by

- using a proprietary curing compound; or
- keeping it covered and moist for the following periods:
 - . In-ground footings: 2 days.
 - . Exposed footings, beams and slabs: 7 days.

Formwork removal

Remove timber formwork.

Stripping times

Leave formwork for suspended structures in place after pouring concrete for the following periods:

- Vertical surfaces: 2 days.

- Bottom surfaces: 7 days with shoring and backprops left in position for 21 days.

3.6 JOINTS**Construction joints**

Joint preparation: Roughen and clean the hardened concrete joint surface, remove loose or soft material, free water and foreign matter. Dampen the surface before placing the concrete.

Slip joints

If concrete slabs are supported on masonry, provide proprietary pre-lubricated slip joints.

3.7 GARAGE FLOOR

Floor is to be bare concrete with a steel trowel finish with falls graded to floor wastes.

4 TIMBER AND STEEL CONSTRUCTION



4.1 GENERAL

Cross references

Refer to the following worksections:

- *General requirements*, for termite protection and timber durability.
- *Concrete construction*, for concrete bearer supports.
- *Brick and block construction*, for clearance for timber frame shrinkage and masonry bearer supports.
- *Block and tile finishes*, for waterproofing of wet areas.
- *Painting*, for priming of steel and timber before fixing, and repair of zinc-coated steel after cutting and welding.

Standards

Timber framing and flooring: To AS 1684.4-1999 (*Residential timber-framed construction - Simplified - Non-cyclonic*) or AS 1720.1-1997 (*Timber structures - Design methods*).

Structural steelwork: To AS 4100-1998 (*Steel structures*).

Cold-formed steel framing: Provide a proprietary system designed to AS 3623-1993 (*Domestic metal framing*).

Preparation of metal surfaces: To AS 1627-Various (*Metal finishing - Preparation and pretreatment of surfaces*).

4.2 MATERIALS AND COMPONENTS

Cold-formed steel framing

Cold-form sections from metallic-coated steel to AS 1397-2001 (*Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated*).

Corrosion protection: To BCA Volume 2 clause 3.4.2.2 (*Acceptable construction - Framing - Steel framing - General*).

Self-drilling screws

Standard: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries - General requirements and mechanical properties*).

Corrosion resistance: Class 2 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries - Corrosion resistance requirements*), Table 1.

Flashings and damp-proof courses

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Timber fasteners

Metal washers: Provide washers to the heads and nuts of all bolts and coach screws.

Steel straps: Metallic-coated steel to AS 1397-2001 (*Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated*), minimum size 25 x 1 mm or 30 x 0.8 mm.

Galvanizing

Galvanize mild steel components (including fasteners) to AS 1214-1983 (*Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)*) or AS/NZS 4680-1999 (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*), as appropriate, if

- exposed to weather;
- embedded in masonry; or
- in contact with chemically treated timber.

Timber Framing

Timber wall, floor and roof framing shall be LOSP treated for termite resistance.

4.3 CONSTRUCTION GENERALLY

Welding

Standard: To AS/NZS 1554.1-1995 (*Structural steel welding - Welding of steel structures*).

Grommets

Provide grommets to isolate piping and wiring from cold-formed steel framing.

Swarf

Remove swarf and other debris from cold-formed steel framing immediately after it is deposited.

Priming steel

Before fixing, prime steel which is not galvanized or metallic-coated.

4.4 FLOORS**General**

Standard: To AS 1684.4-1999 (*Residential timber-framed construction – Simplified – Non-cyclonic*).

Strip flooring

Weather: Do not fix strip flooring until the work is weathertight.

19mm T&G floor boards as selected on 35 x 70 timber battens fixed to concrete slab with 75mm gun nails at 600 centres maximum.

Ensure top of slab is flat and even. Where undulations exceed 3mm in 1500mm apply concrete topping or filler.

Timber floors should not be installed until concrete slab has a moisture content of 5.5% (generally achieved after curing for approximately 4 – 6 months)

Particleboard flooring

Standards: To AS/NZS 1860.1-2002 (*Particleboard - Specifications*) and install to AS 1860-1998 (*Installation of particleboard flooring*).

Junctions: Sand junctions lightly to a smooth, level surface.

Fibre cement flooring

Compressed sheets: To AS/NZS 2908.2-2000 (*Cellulose-cement products - Flat sheets*), Type A, Category 5.

Plywood flooring

Standard: To AS/NZS 2269-1994 (*Plywood – Structural*), bond type A, tongue and grooved.

4.5 WALL FRAMING**Timber wall framing**

Provide gauged timbers for studs, noggings and plates in double-faced walls.

Additional support

General: Provide additional support in the form of noggings, trimmers and studs for fixing lining, cladding, hardware, accessories, fixtures and fittings as necessary.

Provide additional nogging to stair well to support Easycraft “Easy VJ” wall lining to manufacturers specifications.

Maximum spacing of noggings generally: 1350 mm centres.

Damp-proof courses

Clad-frame walls: Provide damp-proof courses under the bottom plate of external clad-frame walls built off slab.

Flashings

Provide flashings to external openings sufficient to prevent the entry of moisture.

4.6 ROOF AND CEILING FRAMING AND TRUSSES**Nailing strips**

Where timber joists, rafters or purlins bear on steel members, provide 50 mm thick nailing strips bolted to the flange of the steel member.

Strutted framing

General: Construct traditional timber pitched roof framing consisting of rafters and ceiling joists supported at intermediated points by a system of underpurlins strutted off walls or strutting beams and braced by collar ties, and ceiling hanging beams.

Beam framing

General: Construct framing for flat or pitched roofs where the ceiling follows the roof line, consisting of rafters or purlins acting as beams to support both ceiling and roof covering.

Roof trusses

General: Factory-assemble trusses.

Camber: 10 mm upward in bottom chord.

Connections: Connector plates pressed to contact with the truss members. No knots in plate area.

Joints: No gaps greater than 2 mm.

Overhangs: Free from spring or splits.

Installation: To AS 4440-1997 (Installation of nailplated timber trusses).

Support: Support trusses on bottom chord at two points only, unless designed for additional support.

Vertical movement: Over internal walls provide at least 10 mm vertical clearance and use bracing methods which allow for vertical movements.

Additional support

Provide a frame member behind every joint in fibre cement sheeting or lining.

4.7 TIMBER ROOF TRIM**Priming timber**

Prime exposed timber all round before fixing and re-prime cut edges if trimmed in-situ.

Fascia, valley gutter and barge boards

Minimum thickness:

- Fixed at up to 600 mm centres: 19 mm.
- Fixed at 600 - 900 mm centres: 32 mm.

4.8 EXTERNAL BALUSTRADE

Provide stainless steel 32mm CHS balusters at 1200 max centres with 3mm diameter 3.16 grade S.S. wire horizontally at 125 centres complete with bridge closed barrel 3.16 S.S. turnbuckles and 75x50 blackbutt top rail with paint finish.



5 BRICK AND BLOCK CONSTRUCTION

5.1 GENERAL

Cross references

Refer to the following worksections:

- *General requirements*, for termite protection.
- *Timber and steel construction*, for structural steelwork.

Standard

Masonry generally: To AS 3700-2001 (*Masonry structures*).

Masonry units: To AS/NZS 4455-1997 (*Masonry units and segmental pavers*).

5.2 MATERIALS AND COMPONENTS

Steel components

Galvanizing: Galvanize mild steel components (including fasteners) to AS 1214-1983 (*Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)*), or AS/NZS 4680- (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*), as appropriate.

Durability requirements: To AS/NZS 2699.2-2000 (*Built-in components for masonry construction – Connectors and accessories*)

Masonry durability

Requirement: Conform to AS 3700, Table 5.1.

Flashings and damp-proof courses

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Mortar materials

Sand: Fine aggregate with a low clay content and free from efflorescing salts, selected for grading and colour for facework.

Mortar colour: > off white

Mortar mix table (cement, lime, sand ratios)

Provide mortar mixes as follows:

Mortar class to Bricks or blocks AS 3700				Water thickener
	Clay	Concrete	Calcium silicate	
Masonry cement				
M3	1:0:4	1:0:4	n/a	No
Portland cement				
M3	1:1:6	1:1:6	n/a	Optional
	1:0:5	1:0:5	1:0:5	Yes

5.3 CONSTRUCTION GENERALLY

Joints and cutting

Set out masonry with joints of uniform width and the minimum cutting of masonry units.

Joints

Joint tolerances in accordance with AS 3700-2001 (*Masonry Structures*)

Rod

190 mm high blocks: 3 courses to 600 mm.

Bond

Single leaf construction: Stretcher bond.

Perpend

Keep perpend in alternate courses vertically aligned and fill them completely with mortar.

Appearance

Leave facework clear of mortar smears, stains and discolouration. Do not clean using an acid solution and do not erode joints if using pressure spraying.

5.3 CONTROL OF MOVEMENT

Control joints for concrete masonry

Maximum length of continuous wall: 8 m.

Minimum width of control joint: 10 mm.

Flexible ties and anchors

If ties or anchors extend across control joints, provide ties or anchors which maintain the stability of the masonry without impairing the effectiveness of the joint.

Joint material

Installation: Clean the joints thoroughly and insert an easily compressible backing material before sealing.

Sealant depth: Fill the joints with a gun-applied flexible sealant for a depth of at least two-thirds the joint width.

5.4 STEEL LINTELS**Cold-formed lintels**

General: Proprietary cold-formed flat-based type designed to AS/NZS 4600-1996 (*Cold-formed steel structures*).

Material: Mild steel galvanized to AS/NZS 4680-1989 (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*). Do not cut after galvanizing.

Corrosion protection: To AS/NZS 2699.3-2002 (*Built-in components for masonry construction – Connectors and accessories*).

Steel flats and angles

Sizes: To BCA Volume 2, Figure 3.3.3.5 (*Lintels supporting roofs and masonry walls*).

Material: Mild steel galvanized to AS/NZS 4680. Do not cut after galvanizing.

Corrosion protection: To AS/NZS 2699.3 (*Built-in components for masonry construction – Lintels and shelf angles (durability requirements)*).

Installation

General: Install with the longest leg vertical. Keep lintels 5 mm clear of heads and frames. Pack mortar between the angle upstand and supported masonry units.

Propping: To prevent deflection or excessive rotation, temporarily prop proprietary cold-formed lintels until the masonry reaches its required strength.

Minimum propping period: 3 days.

5.5 RETAINING WALLS

Retaining walls shall be constructed in accordance with Engineer's plans and specification.

5.6 SANDSTONE CLADDING

Install 50mm sandstone cladding from Gosford Quarries as selected and install in accordance with supplier's specification to external garageconcreteblock wall, terrace balustrade and retaining walls as indicated on working drawings.

6 INSULATION AND SARKING**6.1 GENERAL****Interpretation**

Sarking-type material: Flexible membrane material normally used for waterproofing, vapour retarding or thermal reflective insulation.

6.2 MATERIALS AND COMPONENTS**Bulk insulation**

Cellulosic fibre (loose fill): To AS/NZS 4859.1-2002 (*Materials for the thermal insulation of buildings - General criteria and technical provisions*), Section 5.

Mineral wool blankets and cut pieces: To AS/NZS 4859.1, Section 8.

Polystyrene (extruded rigid cellular sheets): To AS 1366.4-1992 (*Rigid cellular plastics sheets for thermal insulation - Rigid cellular polystyrene - Extruded (RC/PS-E)*).

Polystyrene (moulded rigid cellular sheets): To AS 1366.3-1992 (*Rigid cellular plastics sheets for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS-M)*).

Reflective insulation: To AS/NZS 4859.1, Section 9.

Wool: To AS/NZS 4859.1, Section 6.

Sarking material

Standard: To AS/NZS 4200.1-1994 (*Pliable building materials and underlays - Materials*).

Insulation types and ratings

Wall: > R-Value 1.3 (or 1.7 including construction)

Roof: > Foil lined blanket insulation (75mm)

Ceiling: > R-Value 3.0

6.3 INSTALLATION**Bulk Insulation**

Standard: To AS 3999-1992 (*Thermal insulation of dwellings - Bulk insulation - Installation requirements*).

Batts: Fit tightly between framing members. If support is not otherwise provided, secure nylon twine to the framing and stretch tight.

Sarking material

Standard: To AS/NZS 4200.2-1994 (*Pliable building materials and underlays - Installation requirements*).

Wall sarking

General: Provide vapour-permeable sarking under cladding.

Installation: Apply to the outer face of external stud walls from the top plate down over the bottom plate and flashing. Run across the studs and lap at least 150 mm at joints.

7 ROOFING



7.1 GENERAL

Cross reference

Refer to the *Insulation and sarking* worksection for roof sarking requirements.

7.2 MATERIALS AND COMPONENTS

Flashing material

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Fasteners

Self-drilling screws: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries – General requirements and mechanical properties*).

Corrosion resistance: Class 3 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries – Corrosion resistance requirements*), Table 1.

Exposed fasteners: Provide fasteners which are prefinished with a coating to match the roofing material, or provide matching purpose-made plastic caps.

7.3 METAL ROOFING

Design and installation

Standard: To AS 1562.1-1992 (*Design and installation of sheet roof and wall cladding – Metal*).

Colorbond “customorb” metal deck roof to be installed together with accessories all in accordance with manufacturers instructions.

Sheets shall be in single lengths from fascia to ridge. Fixings of sheets shall be strictly in accordance with the manufacturer’s recommendations. Incompatible materials shall not be used for flashings, fasteners or downpipes.

Visible accessories

Provide material with the same finish as roofing sheets.

Eaves

Treat ends of sheets as follows:

- Generally: Close off ribs at tops and bottoms of sheets by mechanical means or with purpose-made fillers or end caps.
- At gutters: Project sheets 50 mm into gutters.

Swarf

Remove swarf and other debris as soon as it is deposited.

7.4 ROOF PLUMBING

Selection and installation of rainwater goods

Standard: To AS/NZS 3500.3.2 (*National Plumbing and Drainage – Stormwater drainage – Acceptable solutions*).

PVC rainwater goods and accessories: To AS/NZS 2179.2 (Int) -1998 (*Specifications for rainwater goods, accessories and fasteners – PVC rainwater goods and accessories*)

Sealing: Seal fasteners and mechanically fastened joints with silicone sealant.

Flashings and cappings

General: Flash projections above or through the roof with two part flashings consisting of an apron flashing and an over flashing, with at least 100mm vertical overlap. Provide for independent movement between the roof and the projection

Wall abutments: Where a roof abuts a wall, provide overflashings.

Gutters

Minimum slope of eaves gutters: 1:200.

Minimum width overall of valley gutters: 400 mm.

Downpipes

Downpipes are to connect into “Action Underground Tank” system in accordance with Hydraulic Engineer’s plans and specifications.



8 CLADDING

8.1 GENERAL

Cross references

Refer to the following worksections:

- *General requirements*, for timber durability.
- *Insulation and sarking*, for wall sarking requirements.

8.2 MATERIALS AND COMPONENTS

Flashing material

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Fasteners

Steel nails: Hot-dip galvanized to AS 4680- (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*).

Self-drilling screws: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries – General requirements and mechanical properties*).

Corrosion resistance: Class 3 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries – Corrosion resistance requirements*), Table 1.

8.3 HARDBOARD CLADDING

General

Standard: To AS/NZS 1859.4 (Int)-2001 (*Reconstituted wood-based panels – Specifications – Wet-processed fibreboard*).

Exterior wall cladding

Weatherex “Exterior Board” smooth

Cladding to be installed in accordance with manufacturers recommendations in location indicated on working drawings.

Finish with 32x19mm timber cover battens to joints at approximately 600 centres as indicated on working drawings and with timber cover battens at external corners.

Junction between Weatherex “Exterior Board” cladding and weatherboards to be covered with 50x50 with bevelled top timber batten. Weatherboards to butt into batten. Batten is to be located as indicated in working drawings.

8.4 TIMBER BOARD CLADDING

Boards

Timber boards to be treated pine H3 “rusticated” 175 x 25 with pre primed finish

Preparation

Timber boards should be primed all around, plus one coat of undercoat colour matched to the final finishing coat. Knots to be sealed with a 2 pack polyurethane or other sealer recommended by paint manufacturer.

Installation

General: Whenever possible provide single lengths of boards when installed horizontally.

Fixing: Two nails per board at each stud.

Drill nail holes prior to fixing to prevent splitting of the boards.

Nailheads: Treat visible nailheads by punching below the surface and fill flush with putty after the surface has been primed.

Joints

For end grain joints, boards are to be installed so that butt joints are in compression.

All freshly cut joints are to be primed with colour matched primer.

All joints are to be sealed, including stopped ends, with a compatible mastic or silicone sealant (eg Thioseal). The sealant is to be placed onto the boards prior to fixing them into position.

For internal and external corners butt up against timber stop 30x30 and 57x30 to manufacturers recommendations.

8.5 FIBRE CEMENT CLADDING

Standard

General: To AS/NZS 2908.2-2000 (*Cellulose-cement products – Flat sheets*) Type A Category 3.

Eaves lining

7.5mm HardiGroove lining fixed on battens in accordance with manufacturers recommendations to underside of rafters.

HardiGroove lining to be rebated into rear of timber fascia and to be finished with timber moulding at wall junction.

Sealant to be placed on butt joints prior to fixing into position.

**9 DOORS AND WINDOWS****9.1 GENERAL****Cross references**

Refer to the following worksections

- *Lining*, for architraves.
- *Painting*, for priming of frames and doors before installation.

Window and doors shall be as specified in the window and door schedule and shown on working drawings.

9.2 MATERIALS AND COMPONENTS**Flashings**

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Metal finishes

Zinc plating: To AS 1789-2003 (*Electroplated zinc (electrogalvanized) coatings on ferrous articles (batch process)*), at least service condition number 2.

Anodising: To AS 1231-2000 (*Aluminium and aluminium alloys – Anodic oxidation coatings*), at least class AA10.

Thermoset powder coating: To AS 3715-2002 (*Metal finishing – Thermoset powder coatings for architectural applications of aluminium and aluminium alloys*).

Glass

Selection and installation: To AS 1288-1994 (*Glass in buildings – Selection and installation*).

Doors

Doorset: An assembly comprising a door or doors and supporting frame, guides and tracks including the hardware and accessories necessary for satisfactory operation..

Windows

Selection: To AS 2047-1999 (*Windows in buildings – Selection and installation*).

Preglazing

If possible, preglaze doors and windows.

9.3 CONSTRUCTION GENERALLY**Standards**

Window installation: To AS 2047-1999 (*Windows in buildings – Selection and installation*).

Security screen doors and window grilles installation: To AS 5040-2003 (*Installation of security screen doors and window grilles*).

Flashings and weatherings

Install flashings, weather bars, drips, storm moulds, caulking and pointing so that water is prevented from penetrating the building between frames and the building structure.

Windows and Doors

Window and doors shall be as specified in the window and door schedule and shown on the working drawings.

9.4 TIMBER DOORS**Door thickness**

Generally: 35 mm.

External doors and doors over 900 mm wide: 40 mm.

Timber internal doors

As indicated on door schedule and working drawings.

Jambs

Internal hinged doors to have double rebated door jambs.

Priming

Prime timber doors on top and bottom edges before installation.

Door stops

Install door stops to prevent door furniture striking the wall or other surface.

Hinge table

Provide 3 hinges for external doors and door leafs over 2040 mm in height or 820 mm in width and as follows:

Thickness of door (maximum)	Weight of door (maximum)	Number of hinges (per door leaf)	Size of hinges (steel)
35 mm	35 kg	2	85 x 60 x 1.6 mm
40 mm	68 kg	3	100 x 75 x 1.6 mm

9.5 SLIDING INTERNAL DOORS**Accessories**

Provide CS Cavity Sliders "Single Timberform" overhead track supports and jamb lings in accordance with manufacturers recommendations.

9.6 GARAGE DOOR**General**

Standard: To AS/NZS 4505:1998 (*Domestic garage doors*).

Garage doors

Renlita "Springaway" tilt-up door with remote opening or equal, installed in accordance with manufacturers recommendations.

To be clad in weatherboards as previous with paint finish.

All hardware to be galvanised.

9.7 LOCKSETS**External doors**

To be selected

Internal doors

Generally: Passage sets to Laundry to be selected.

Bathrooms, showers and toilets: Privacy sets to be selected

Door lockset mounting heights

To centreline of spindle: 1 m above finished floor.

Windows

Standard window hardware such as hinges, locks, catches, strikers and handles shall be included as necessary to operate, close and lock windows.

Keying

Key doors (excluding garage doors) alike and key windows alike.

10 LINING



10.1 GENERAL

Cross reference

Refer to the *Block and tile finishes* worksection for waterproofing of wet areas.

10.2 MATERIALS AND COMPONENTS

Plasterboard

Standard: To AS/NZS 2588-1998 (*Gypsum plasterboard*).

Sheet thickness: > 10mm

Fibre cement

Standard: To AS/NZS 2908.2-2000 (*Cellulose-cement products – Flat sheets*), Type B Category 2.

10.3 SHEET LINING

Supports

Install timber battens or proprietary cold-formed galvanized steel furring channels

- if framing member spacing exceeds the recommended spacing;
- if direct fixing of the sheeting is not possible due to the arrangement or alignment of the framing or substrate; and
- to support fixtures.

Installation

Plasterboard: To AS/NZS 2589.1-1997 (*Gypsum linings in residential and light commercial construction – Application and finishing – Gypsum plasterboard*) Level 4 finish.

Wet areas: Do not use adhesive.

Joints

General: Provide recessed edge sheets and finish flush with perforated reinforcing tape.

External corner joints: Make over metallic-coated steel corner beads.

Wet areas: Provide the flashings, trim and sealants necessary to ensure wet areas are waterproofed.

Joints in tiled areas: Do not apply a topping coat after bedding perforated paper tape in bedding compound.

Control joints: Install purpose-made metallic-coated control joint beads to coincide with structural movement joints.

10.4 V-GROOVE LINING

9mm Easycraft (Laminex Group) "Easy VJ" supplied by The Laminex Group complying with AS/NZS 1859.2 – 1997.

Refer to working drawings for ceiling and wall areas requiring "Easy VJ".

Sheets are factory primed and incorporates plastic tongue and groove system for joining off stud.

Installation to be in strict accordance with manufacturers specifications available from The Laminex Group (phone 132 136). Provide extra noggings or battens if framing member exceeds the recommended spacing.

Sheets sizes to be selected to minimise joints. 42x18 timber cover batten at skirting level to stair well at ground and first floor.

10.5 TRIM

General

Provide timber or medium density fibreboard trim, such as beads, skirtings, architraves, mouldings and stops, where necessary to make neat junctions between components and finishes.

Cornice

Types: > Timber batten as selected.

Skirtings

Types: > MDF primed square dressed size to be selected.

Architraves

Types: > MDF primed square dressed size to be selected.



11 BLOCK AND TILE FINISHES

11.1 GENERAL

Standards

Follow the guidance given in AS 3958.1-1991 (*Ceramic tiles - Guide to the installation of ceramic tiles*) and AS 3958.2-1992 (*Ceramic tiles - Guide to the selection of a ceramic tiling system*).

11.2 MATERIALS AND COMPONENTS

Exposed edges

If available, provide purpose-made border tiles with the exposed edge (whether round, square or cushion) glazed to match the tile face.

Accessories

If available, provide tile accessories such as round edge tiles, cove tiles, step treads and nosings to stairs, landings, and thresholds, skirtings, sills, copings and bath vents, which match the surrounding tiles, composition, colour and finish.

Adhesives

Standard: To AS 2358-1990 (*Adhesives - For fixing ceramic tiles*).

PVA (polyvinyl acetate)-based adhesives: Do not use in wet areas or externally.

Mortar materials

Cement: To AS 3972-1997 (*Portland and blended cements*), type GP.

Sand: Fine aggregate with a low clay content selected for grading.

Bedding mortar

Proportioning: Select proportions from the range 1:3 to 1:4 cement:sand to obtain satisfactory adhesion. Provide minimum water.

Grout

Cement-based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

Preparation

Prepare the substrates, including the following:

- Remove deleterious and loose material and leave the surface dust-free and clean.
- For mortar bedding, wet the substrate as necessary to achieve suitable suction. Alternatively, apply a proprietary bonding agent to the substrate to improve adhesion.

11.3 WATERPROOFING WET AREAS

Standard

General: To AS 3740-2004 (*Waterproofing of wet areas within residential buildings*).

Membrane

Provide a proprietary liquid applied or sheet membrane system which

- has a current Australian Building Products and Systems Certification Scheme certificate; or
- has a current appraisal report issued by the CSIRO Building Products and Systems Appraisals stating that the system is suitable for use as a waterproofing system for use in wet areas, shower recess bases and associated floors and wall/floor junctions which are to be tiled.

Installation

Floor wastes: Turn membrane down onto the floor waste puddle flanges, and adhere.

Hobs: For hobless showers extend 1800 mm into the room.

External tiling: Provide a waterproof membrane under external floor tiling, to balconies and over habitable rooms, which forms a drained tank suitable for continuous immersion. Do not run under bounding walls.

Curing: Allow membrane to cure fully before tiling.

11.4 TILING**Cutting and laying**

Cut tiles neatly to fit around fixtures and fittings, and at margins where necessary. Drill holes without damaging tile faces. Rub edges smooth without chipping. Butt up to returns, frames, fittings, and other finishes.

Variations

Distribute variations in hue, colour, or pattern uniformly, by mixing tiles or tile batches before laying.

Protection

Keep traffic off floors until the bedding has set and attained its working strength.

Setting out

General: Set out tiles to give uniform joint widths within the following limits:

- Internal ceramic tiling: 1.5 - 3 mm.
- Mosaic tiling: As dictated by pattern.
- Vitrified floor tiles: 3 - 5 mm.

Joint alignment: Set out tiling with joints accurately aligned in both directions and wall tiling joints level and plumb.

Joint position: Set out tiles from the centre of the floor or wall to be tiled and, if possible, ensure cut tiles are a half tile or larger.

Fixtures: If possible, position tiles so that holes for fixtures and other penetrations occur at the intersection of horizontal and vertical joints or in the centre of tiles.

Falls and levels

General: Grade floor tiling to even and correct falls generally, and to floor wastes and elsewhere as required. Make level junctions with walls. If falls are not required, lay level.

Minimum fall generally: 1:100.

Minimum fall in shower areas: 1:60.

Change of finish: Maintain finished floor level across changes of floor finish including carpet.

Preparation of tiles

Adhesive bedding: Fix tiles dry.

Mortar bedding: Soak porous tiles in water for half an hour and then drain until the surface water has disappeared.

Floor finish dividers

Finish tiled floors at junctions with differing floor finishes with a corrosion-resistant metal dividing strip fixed to the substrate. If changes of floor finish occur at doorways, make the junction directly below the closed door.

Bath ventilation

Ventilate the space below fully enclosed baths with at least 2 ventilating tiles.

Sealed joints

Fill joints with silicone sealant and finish flush with the tile surface where tiling joins sanitary fixtures and at corners of walls in showers.

12 FLOOR COATINGS AND COVERINGS**12.1 GENERAL****Cross reference**

Refer to the *Painting* worksection for finishing of sanded timber floors.

12.2 SUBSTRATE**Substrate preparation**

Prepare the substrate including the following:

- Stripping and cleaning: Remove deleterious and loose material, including any surface treatment which could adversely affect adhesion.
- Basic sanding: Produce an even plane sanded surface on strip flooring to be covered with carpet or resilient sheet. Lightly sand the junctions of sheet flooring.
- Fine sanding: If flooring is to be clear finished, stop with matching filler and produce a smooth sanded surface free from irregularities and suitable to receive the finish.

12.3 LAYING CARPET**Standard**

General: To AS/NZS 2455.1-1995 (*Textile floor coverings - Installation practice - General*).

Setting out

General: Lay the carpet in continuous lengths without cross joins in the body of the area. Make unavoidable cross joins at doorways under the closed door.

Joints in underlay: Ensure joints in underlay do not coincide with carpet joints. Do not carry underlay over carpet grippers or edge strips.

Seaming methods

Woven carpet: Machine or hand sew.

Tufted carpet: Provide hot-melt adhesive tapes.

Fixing

Gripper strip: Provide preformed gripper strip and tackless edge strip. Space fixings at 150 mm maximum centres.

Edge strip

Provide a proprietary aluminium edge strip at exposed edges of the carpet. If edge strips occur at doorways, make the junction underneath the closed door.

13 PAINTING**13.1 GENERAL****Standards**

Follow the guidance given in AS/NZS 2311-2000 (*Guide to the painting of buildings*) and AS/NZS 2312-2002 (*Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings*).

13.2 MATERIALS AND COMPONENTS**Combinations**

Do not combine paints from different manufacturers in a paint system.

Delivery

Deliver paints to the site in the manufacturers' labelled containers. Ensure containers are marked with the APAS (Australian Paint Approvals Scheme) specification number.

Order of work

Complete clear timber finishes before commencing opaque paint finishes in the same area.

Protection

Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position on completion of painting.

Substrate preparation

All surfaces to be painted shall be properly sanded and prepared.

Paint application

Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Ensure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture, and free of runs, sags, blisters, or other discontinuities.

Priming before fixing

Timber: Apply a first coat (two coats to end grain) to exposed roof trim, timber doors and window frames, tops and bottoms of doors, associated trims and glazing beads before fixing in position.

Steel: Apply a priming coat of zinc-rich organic binder to APAS 2916-2001 (*Organic zinc rich coating for protection of steel*).

Repair of galvanizing

If galvanized or zinc-coated surfaces have been cut or welded after galvanizing, prime the affected area with a zinc-rich organic binder to APAS 2916-2001 (*Organic zinc rich coating for protection of steel*).

Finishing timber floors

After sanding, finish with 3 coats of clear floor sealer to APAS-0205-2003 (*One pack clear moisture cured finish for timber*).

Paint system description

If a system is referred to only by its final coat (for example by the manufacturer's brand name, the APAS specification code or the generic name) provide stains, primers, sealers and undercoats which are suitable for the substrate and are compatible with the finish coat and each other.

Paint final coat table

Provide paints as follows:

Final coat	Use paint to APAS specification
Interior	
Flat latex	APAS-0260/4-2003 (<i>Washable flat finish for interior use (buildings)</i>)
Low gloss latex	APAS-0260/3-2003 (<i>Low gloss interior latex paint in MCR (buildings)</i>)
Semi-gloss latex	APAS-0260/2-2003 (<i>Semi gloss interior latex paint in MCR (buildings)</i>)
Gloss latex	APAS-0260/1-2003 (<i>Interior gloss latex paint (buildings)</i>)
Exterior	
Full gloss solvent-borne	APAS-0015/1-2003 (<i>Full gloss alkyd enamel for exterior and interior use (buildings)</i>)
Flat latex	APAS-0280/3-2003 (<i>Flat or low gloss exterior latex finish in MCR (buildings)</i>)
Low gloss latex	APAS-0280/3-2003 (<i>Flat or low gloss exterior latex finish in MCR (buildings)</i>)
Gloss latex	APAS-0280/1-2003 (<i>Gloss exterior latex paint in MCR (buildings)</i>)
Stain, lightly pigmented	APAS-0115-2003 (<i>Lightly pigmented solvent borne ranch finish for exterior timber</i>)
Latex stain, opaque	APAS-0280/5-2003 (<i>Heavily pigmented low gloss latex ranch finish for exterior timber</i>)
Semi-gloss latex	APAS-0280/2-2003 (<i>Semi gloss latex paint, exterior (buildings)</i>)



14 TIMBER FIXTURES

14.1 GENERAL

Cross references

Refer to the following worksections:

- *General requirements*, for timber durability.
- *Doors and windows*, for timber doors and reveal and jamb linings.

14.2 MATERIALS AND COMPONENTS

Moisture content

Make milled products from timbers seasoned

- to within 3% of the equilibrium moisture content appropriate to the timber and its intended conditions of use; and
- with no more than 3% difference between any 2 pieces in any one group.

Finished sizes

Provide milled timbers with actual dimensions which are at least the required dimensions, except for dimensions qualified by a term such as "nominal" or "out of" to which industry standards for finished sizes apply.

Hardboard

Standard: To AS/NZS 1859.4 (Int)-2001 (*Reconstituted wood-based panels – Specifications – Wet-processed fibreboard*).

Particleboard

Standard: To AS/NZS 1859.1 (Int)-2001 (*Reconstituted wood-based panels – Specifications – Particleboard*).

Medium density fibreboard

Standard: To AS/NZS 1859.2 (Int)-2001 (*Reconstituted wood-based panels – Specifications – Dry-processed fibreboard*).

Decorative overlaid wood panels

Standard: To AS/NZS 1859.3-1996 (*Reconstituted wood-based panels – Decorative overlaid wood panels*).

High pressure decorative laminate sheets

Standard: To AS/NZS 2924.1-1987 (*High pressure decorative laminates – Sheets made from thermosetting resins – Classification and specifications*).

High pressure decorative laminate sheet application table

Provide classes as follows:

Class to AS/NZS 2924-1987 (High pressure decorative laminates - Sheets made from thermosetting resins)	Application
HGS or HGP	Kitchen work-tops
VGS or VGP	Kitchen front panels
VLS	Other locations

14.3 CONSTRUCTION GENERALLY

General

Construction: Build components square and install plumb.

Joints: Provide materials in single lengths whenever possible. If joints are necessary, make them over supports.

Fasteners and adhesives

General: Provide fasteners, adhesives or both to transmit the loads imposed and ensure the rigidity of the assembly. Do not split, discolour or otherwise damage timber or sheets.

Visibility: Do not provide visible fixings except in the following locations:

- Inside cupboards and drawer units.
- Inside open units, in which case provide proprietary caps to conceal fixings.

Finishing

Junctions with structure: Scribe plinths, benchtops, splashbacks, ends of cupboards, kickboards and returns to follow the line of floors or walls.

14.4 TIMBER STAIRS AND BALUSTRADES**Cut strings**

Profile for treads and risers. Mitre riser ends.

Treads

Dress nosings to a pencil-round. Return nosings at cut strings. Groove for riser tongue in closed riser stair. Set riser 19 mm back from nosing.

Top tread

Flush with finished floor, otherwise to match stair treads. Provide similar tread section as nosing to floor edges around stair well.

Risers

Tongue to tread. Mitre to string in cut-string stairs.

Joints

Glue joints in internal work. In closed riser stairs, wedge treads and risers to strings. Plant 2 glue-blocks behind each tread to riser junction. Trim floors to carry ends of stairs and around stairwell.

Fascia

Of depth sufficient to overlap 19 mm below ceiling, and fixed to floor joists hard up under nosing.

Soffit lining

Fix to 38 x 38 mm nailing battens notched and nailed to the underside of treads and risers of closed rise stairs at the centre of flights and at each side.

Balustrade

To be timber frame lined with Easycraft "Easy VJ" to butt dressed timber top plate 120x32mm with paint finish.

14.5 DOMESTIC KITCHEN ASSEMBLIES**Standard**

General: To AS/NZS 4386.1-1996 (*Domestic kitchen assemblies – Kitchen units*).

14.6 CUPBOARD AND DRAWER UNITS**Plinths, carcasses, drawer fronts, shelves and doors**

Material: Provide melamine overlaid high moisture-resistant particleboard or melamine overlaid high moisture-resistant medium density fibreboard.

Minimum thickness: 16 mm.

Finish: as selected

Installation: Secure plinths and carcasses to floors, walls, or both at not more than 600 mm centres.

Drawer fronts: Rout for drawer bottoms.

Adjustable shelves: Support on proprietary pins in holes bored at 32 mm centres vertically.

Drawer and door hardware

Hinges: Provide concealed all-metal hinges with the following features:

- Adjustable for height, side and depth location of door.
- Self-closing action.
- Hold-open function.
- Nickel plated.

Slides: Provide metal runners and plastic rollers with the following features:

- 30 kg loading capacity.
- Closure retention.
- White thermoset powder coating or nickel plated.

14.7 CEILING ACCESS**Ceiling**

Trim an opening and provide a loose access panel of minimum size 600 x 400 mm.

**15 PLUMBING INSTALLATIONS****15.1 GENERAL****Cross references**

Refer to the following worksections:

- *Site preparation*, for service trenches.
- *Roofing*, for roof plumbing and rainwater tanks.
- *Block and tile finishes*, for waterproofing of wet areas.
- *Painting*, for priming steel or iron before installation and exposed piping required to be painted.

Standard

Plumbing and drainage products: To SAA MP52-2001 (*Manual of authorization procedures for plumbing and drainage products*) and AS/NZS 3718:2003 (*Water supply - Tap ware*).

Connections

Excavate to locate and expose the connection points and connect to the authorities' mains. On completion, backfill and compact the excavation and reinstate surfaces and elements which have been disturbed such as roads, pavements, kerbs, footpaths and nature strips.

15.2 MATERIALS AND COMPONENTS**Water heater**

- Type: > Gas instantaneous, external – Energy rating 5 Star
Manufacturer: > Rheem
Model/capacity: > Integrity 26

Valves

Finish valves to match connected piping.

Sanitaryware and tapware schedule

Refer to PC Item Schedule for selected sanitary and tapware.

Selected items to comply with BASIX include

- Showerheads min 3A rating
Taps to Kitchen min 2A rating
Taps to Bathroom basins min 2A rating
Toilet flushing system min 3A rating

15.3 CONSTRUCTION GENERALLY**General**

Install piping in straight lines and to uniform grades. Arrange and support the piping so that it remains free from vibration and water hammer, while permitting thermal movement. Keep the number of joints to a minimum. Prevent direct contact between incompatible metals.

Concealment: If practicable, conceal piping and fittings requiring maintenance or servicing so that they are accessible within non-habitable enclosed spaces such as roof spaces, subfloor spaces and ducts. Keep pipelines in subfloor spaces at least 150 mm above ground and ensure access can be provided throughout for inspection. Provide at least 25 mm clearance between adjacent pipelines (measured from the piping insulation where applicable).

Pipes under pressure embedded in concrete: Use only copper pipe with the minimum number of joints. Pressure test and rectify leaks before concrete is poured.

Building penetrations: If piping passes through building elements provide purpose-made metal or plastic sleeves formed from pipe sections. Prime steel or iron before installation.

Pipe support materials: The same as the piping, or galvanized or non-ferrous metals, with bonded PVC or glass fibre woven tape sleeves where needed to separate dissimilar metals.

Cover plates: Where exposed piping emerges from wall, floor or ceiling finishes, provide cover plates of non-ferrous metal, finished to match the piping, or of stainless steel.

15.4 STORMWATER

Standard

General: To AS/NZS 3500.3-2003 (*Plumbing and Drainage - Stormwater drainage*) or AS/NZS 3500.5: 2000 (*National Plumbing and Drainage - Domestic installations*).

Cleaning

During construction, use temporary covers to openings and keep the system free of debris. On completion, flush the system using water and leave it clean.

Pipelaying

Lay pipelines with the spigot ends in the direction of flow.

Downpipe connections

Turn up drain branch pipelines to finish 50 mm above finished ground or pavement level.

Subsoil drains

Connection: Connect subsoil drains to the stormwater drainage system.

Trench width: Minimum 450 mm.

Subsoil drains: Provide proprietary perforated plastic pipe.

Filter fabric: Provide a polymeric fabric formed from a plastic yarn containing stabilisers or inhibitors to make the filaments resistant to deterioration due to ultraviolet light.

Filter sock: Provide a polyester permeable sock capable of retaining particles of 0.25 mm size. Securely fit or join the sock at each joint.

Backfilling: Backfill with 20 mm nominal size washed screenings, to the following depths:

- To the underside of the bases of overlying structures such as pavements, slabs and channels.
- To within 75 mm of the finished surface of unpaved or landscaped areas.

Pits

Cover levels: Locate the top of covers or gratings, including frames as follows:

- In paved areas: Flush with the paving surface.
- In landscaped areas: 25 mm above finished surface.
- Gratings taking surface water runoff: Set to receive the runoff without ponding.

15.5 WASTEWATER

Standards

General: To AS/NZS 3500.2-2003 (*Plumbing and Drainage - Sanitary plumbing and drainage*) or AS/NZS 3500.5.

Cleaning

During construction, use temporary covers to openings and keep the system free of debris. On completion, flush the system using water and leave it clean.

Vent pipes

Staying to roof: If fixings for stays penetrate the roof covering, seal the penetrations and make watertight.

Terminations: Provide bird-proof vent cowls made of the same material and colour as the vent pipe.

Standards

General: To AS/NZS 3500.1-2003 (*Plumbing and Drainage - Water services*) and AS/NZS 3500.4-2003 (*Plumbing and Drainage - Heated water supply services*) or AS/NZS 3500.5.

Copper pipe: To AS 4809-2003 (*Copper pipe and fittings - Installation and commissioning*).

Tap positions

Locate hot tap to the left of, or above, the cold water tap.

Accessories

Provide the accessories and fittings necessary for the proper functioning of the plumbing systems, including taps, valves, outlets, pressure and temperature control devices, strainers, gauges and pumps.

Heater installation

Location: Locate water heaters where they can be maintained or replaced without damaging adjacent structures, fixtures or finishes as indicated on working drawings.

Temperature

Maximum temperature at ablution outlets: 50°C.

Piping insulation

Hot water supply: >

Cold water supply: >

Isolating valves

Provide isolation valves to water heaters.

Cleaning

On completion, flush the pipelines using water and leave them clean.

15.6 RAINWATER TANKS**General**

Type: Provide "Action Underground Tanks" to Hydraulic Engineer's plans and specifications and to comply with BASIX and regulatory authorities.

Installation: To AS/NZS 3500.1.

Installation to be in accordance with manufacturer's specification.

Rainwater tank to connect to all toilets and cold water tap in Laundry.

15.7 GAS**Standard**

General: To AS 5601-2000 (*Gas Installation Code*).

Buried pipes

Warning tape: During backfilling, lay plastic warning tape above and for the full length of buried gas pipes.

- Type: Minimum 100 mm wide, with "GAS PIPE UNDER" marked continuously.

Commissioning

On completion of installation and testing, turn on isolating and control valves and purge and charge the installation.

Gas Fireplace

Install a Jetmaster Heat-N-Glo SL-550 gas fireplace to living area indicated in working drawings in accordance with manufacturer's plan and specifications with flue to external wall.

**16 ELECTRICAL INSTALLATIONS****16.1 GENERAL****Cross references**

Refer to the *Site preparation* worksection for service trenches.

Standard

Electrical installation: To AS/NZS 3018-2001 (*Electrical installations – Domestic installations*).

Interpretation

ED S&IR: The Electricity Distributor's Service and Installation Rules.

RCD: Residual Current Device.

16.2 COMPONENTS**Standards**

Circuit breakers: To AS/NZS 3947.2-2002 (*Low-voltage switchgear and controlgear – Circuit-breakers*).

Electrical accessories: To AS/NZS 3100-2002 (*Approval and test specification General requirements for electrical equipment*).

Luminaires: To AS 3137-1992 (*Approval and test specification - Luminaires (lighting fittings)*).

Smoke detectors: To AS 3786-1993 (*Smoke alarms*).

Switchboards: To AS/NZS 3439.1-2002 (*Low-voltage switchgear and controlgear assemblies - Type-tested and partially type-tested assemblies*) or AS/NZS 3439.3-2002 (*Low-voltage switchgear and controlgear – Particular requirements for low-voltage switchgear and controlgear assemblies...*).

Telecommunications accessories: To AS/ACIF S008: 2001 (*Requirements for authorised cabling products*).

Television antenna: To AS 1417.1-1987 (*Receiving antennas for radio and television in the frequency range 30 MHz to 1 GHz - Construction and installation*) and AS 1417.2-1991 (*Receiving antennas for radio and television in the frequency range 30 MHz to 1 GHz – Performance*).

Telecommunications system

Telephony cable only - Speech and low band frequencies (≤ 100 kHz).

Small office/home office cable class

Class A Speech and low band frequencies (≤ 100 kHz).

Class B Medium bit rate data (≤ 1 MHz).

Class C High bit rate data (≤ 16 MHz).

Class D Very high bit rate data (≤ 100 MHz).

Accessory schedule

Type	Manufacturer	Catalogue or model no.
Audio system		
Blank plates		
Data/fax/modem outlet		
Door chimes		
Exhaust fan		
Intercom		
Pay television		
Socket outlet		
Switch		
Television outlet		
Telephone outlet		

Spare conduits

For future audio and television cable installation.

16.3 INSTALLATION**General**

Submit all necessary applications for electricity supply. Liaise with the electricity distributor and comply with the ED S&IR.

Telecommunications installation

Standard: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*) and the recommendations of SAA HB29-2000 (*Communications Cabling Manual, Module 2: Communications Cabling Handbook*).

Submissions: Submit required applications for telecommunications services to the telecommunications services carrier. Liaise with the carrier and submit the Telecommunications Cabling Advice (TCA1) to the Australian Communications Cabling Authority (ACA).

Consumers mains and metering

Provide consumers mains and connect them to the electricity distributor mains.

Consumer mains phases: >

Electricity distributor's requirements: Provide metering, protection, and control equipment as required by the ED S&IR.

Metering switchboard location: >

Switchboards

Distribution switchboard location(s): >

Prohibited locations: Do not locate a switchboard in a position prohibited by AS/NZS 3018-2001 (*Electrical installations – Domestic installations*) or the ED S&IR. Verify that any proposed location complies, and if the location is not compliant, recommend a suitable location to the owner.

Construction: Enclosed type with a hinged lid. Provide circuit breakers and RCDs.

Maximum demand and spare capacity

Calculate the maximum demand of the installation in accordance with AS/NZS 3018-2001 (*Electrical installations – Domestic installations*) and give the owner a copy of the calculations.

Spare capacity: Provide

- > 10% spare capacity in mains and submains; and
- > 25% spare capacity in final subcircuits.

Load balancing: Spread electrical load equally across circuits to prevent overloading and inadvertent circuit breaker operation.

Fixed and stationary appliances: Treat socket outlets supplying fixed or stationary appliances likely to cause an RCD to trip due to earth leakage currents in accordance with AS/NZS 3018-2001 (*Electrical installations – Domestic installations*). Do not connect to circuits that supply socket outlets intended for hand held or portable appliances.

Spare spaces: Provide switchboards with ≥ 2 spare positions for future single phase circuit breakers.

Electrical and telecommunications accessories

Provide electrical accessories necessary for a complete installation including but not limited to switches, dimmers, socket outlets, and telecommunications outlets.

Mounting: Flush mount accessories to the wall (or ceiling) unless noted otherwise. Provide proprietary wall boxes in masonry and wall brackets in stud walls.

Wet areas: Position accessories in locations containing baths showers or other fixed water containers to comply with the requirements of AS/NZS 3018-2001 (*Electrical installations – Domestic installations*).

Wiring

Conceal cables and conduits: Provide conduits as necessary to allow wiring replacement without structural work or the removal of cladding, lining, plaster or cement rendering.

Sequence of work: Install conduits and cables before the installation of wall and ceiling linings, and before any external landscaping works.

Installation: Do not penetrate damp-proof courses. Arrange wiring such that it does not bridge the cavity in external masonry.

Conduit sizes: Provide conduits of sufficient internal diameter and arranged so that cables are not subject to undue mechanical stress during installation.

Minimum conduit diameter: 20 mm.

Conduits for future use: Provide a non-metallic drawstring having a breaking strain > 100 kg.

Lighting

Provide lighting as indicated on electrical layout working drawings.

Provide for fluorescent lighting in all bathrooms and laundry to comply with BASIX requirements.

Dimmers and control devices

Locate dimmers and control devices for future access. Provide ventilation and acoustic treatment to suit the device characteristics.

Ceiling Fans

Install ceiling fans to each Bedroom, Living, Family and Rumpus as indicated on electrical layout working drawings.

Exhaust fans

Install exhaust fans to each bathroom ducted to roof as indicated on electrical layout working drawings as selected.

Install Kitchen exhaust fan, not ducted as selected

Power Points

Provide for power points in positions indicated on electrical layout working drawings.

Telecommunications

Installations requiring telephony only: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*).

Small office/home office installations: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*) and AS/NZS 3086-1996 (*Telecommunications installations - Integrated communications cabling systems for small office/home office premises*) and in accordance with the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*).

Television and audio systems

Provide a complete operational analogue and digital television distribution system to AS/NZS 1367-2000 (*Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations*) and conforming to the recommendations of Digital Broadcasting Australia.

Antennas: Provide and locate antennas to receive all locally available free-to-air television stations. Provide a coaxial cabling system.

Conduits for future cabling: ≥ 25 mm diameter with drawstrings.

Smoke detection

Installation and testing: To AS 1670.1-2004 (*Fire detection, warning, control and intercom systems - System design, installation and commissioning - Fire*).

Provision: Provide smoke detectors to the requirements of the Building Code of Australia. Connect smoke detectors to mains power.

Testing and certification

Electrical installations: Test to AS/NZS 3017-2001 (*Electrical installations - Testing and inspection guidelines*). Give the owner a certificate showing test results and certifying compliance with AS/NZS 3018-2001 (*Electrical installations - Domestic installations*).

Telecommunications cabling: To AS/NZS 3086-1996 (*Telecommunications installations - Integrated communications cabling systems for small office/home office premises*) and the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*). Test the cable link performance in accordance with the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*) at the maximum frequency and data rate for the cable class, and the cable category. Give the owner a certificate showing test results and certifying compliance with

AS/NZS 3086-1996 (Telecommunications installations - Integrated communications cabling systems for small office/home office premises).

Television and audio systems: To AS/NZS 1367-2000 (*Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations*). Test the complete television and audio system. Give the owner a certificate showing test results and certifying compliance.

**17 LANDSCAPING****17.1 GENERAL****Cross reference**

Refer to the *General requirements* worksection for timber durability.

17.2 MATERIALS AND COMPONENTS**Concrete**

Standard: To AS 1379-1997 (*Specification and supply of concrete*) or proprietary packaged mix.

17.3 PREPARATION**Weed eradication**

Eradicate weeds using a non-residual glyphosate herbicide in any registered formulae, at the recommended maximum rate.

Surplus spoil

Remove surplus spoil from site. Do not burn vegetative material.

17.4 SUBSOIL**Ripping**

General: If practicable, rip parallel to the final contours. Do not rip when the subsoil is wet or plastic. Do not rip within the dripline of trees and shrubs to be retained.

Ripping depths: Rip the subsoil to the following typical depths:

- Compacted subsoil: 300 mm.
- Heavily compacted clay subsoil: 450 mm.

Cultivation

Cultivate to a minimum depth of 100 mm. Do not disturb services or tree roots; if necessary, cultivate these areas by hand. During cultivation, thoroughly mix in materials required to be incorporated into the subsoil. Remove stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Trim the surface to the required design levels after cultivation.

Additives

General: Apply additives after ripping or cultivation and incorporate into the upper 100 mm layer of the subsoil.

Gypsum: Incorporate at the rate of 0.25 kg/m².

17.5 TOPSOIL**General**

Provide topsoil which is free from unwanted matter and is suitable for reuse on site as topsoil.

Source

If it is available, provide site topsoil.

Placing topsoil

Spread the topsoil on the prepared subsoil and grade evenly, making the necessary allowances so that:

- required finished levels and contours are achieved after light compaction; and
- grassed areas may be finished flush with adjacent hard surfaces such as kerbs, paths and mowing strips.

Consolidation

Compact lightly and uniformly in 150 mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which is:

- finished to design levels;
- smooth and free from stones or lumps of soil;
- graded to drain freely, without ponding, to catchment points;
- graded evenly into adjoining ground surfaces; and

- ready for planting.

Topsoil depths

Spread topsoil to the following typical depths:

- Planting areas: 225 mm.
- Irrigated grassed areas generally: 150 mm.
- Grass areas: 100 mm.

17.6 TURFING**Turf**

Obtain turf from a specialist grower of cultivated turf. Provide turf of even thickness, free from weeds and other foreign matter.

Supply

Deliver the turf within 24 hours of cutting, and lay it within 36 hours of cutting. Prevent it from drying out between cutting and laying.

Fertilising

Mix fertiliser thoroughly into the topsoil before placing the turf.

Laying

Lay turf

- in "stretcher" pattern with the joints staggered and close butted;
- parallel with the long sides of level areas, and with contours on slopes; and
- to finish flush, after tamping, with adjacent finished surfaces of ground, paving edging, or grass seeded areas.

Tamping

Lightly tamp to an even surface immediately after laying. Do not use a roller.

Watering

Water immediately after laying until the topsoil is moistened to its full depth.

17.7 PLANTING**Excavation**

Excavate a plant hole for each plant large enough to accept the root ball plus 0.1 m³ of backfilling with topsoil.

Plants

General: Provide plants which

- have large healthy root systems, with no evidence of root curl, restriction or damage;
- are vigorous, well established, free from disease and pests, of good form consistent with the species or variety; and
- are hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.

Trees: Provide trees which, unless required to be multi-stemmed, have a single leading shoot.

Labelling

Label at least one plant of each species or variety in a batch using a durable, readable tag.

Planting conditions

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Watering

Thoroughly water plants before planting and immediately after planting.

Fertilising

In planting beds and individual plantings, place fertiliser pellets around plants at the time of planting.

17.8 MULCHING**Mulch**

General: Provide mulch which is free of deleterious and extraneous matter such as stones, soil, weeds and sticks.

Application: Place mulch clear of plant stems, and rake to an even surface flush with the surrounding finished levels.

Depth: 75 mm.

17.9 STAKES AND TIES**Stakes**

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Stake sizes:

- For plants 1 to 2.5 m high: Two 50 x 50 x 1800 mm stakes per plant.
- For plants smaller than 1 m high: One 38 x 38 x 1200 mm stake per plant.

Ties

General: Provide ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant.

Webbing: Provide 50 mm hessian webbing stapled to the stake.

**18 TERRACE PAVING AND DRIVEWAY****18.1 GENERAL****Cross reference**

Refer to the *General requirements* worksection for timber durability.

Kerb crossing

Provide a kerb crossing to local council requirements.

18.2 MATERIALS AND COMPONENTS**Mortar materials**

Sand: Use a fine aggregate with a low clay content selected for grading.

Cement: To AS 3972-1997 (*Portland and blended cements*), type GP.

Mortar

Mix proportions: 1:3 cement:sand.

18.3 CONSTRUCTION GENERALLY**Grading**

General: Grade paving to even falls to drain away from buildings to drainage outlets without ponding. Minimum fall for drainage: 1:100.

18.4 UNIT PAVING**Masonry and segmental pavers**

General: Provide paving units of clay, natural stone or concrete masonry, purpose-made for use as paving, or units made for bonded masonry construction but suitable for paving.

Standard: To AS/NZS 4455-1997 (*Masonry units and segmental pavers*).

Minimum thickness:

- Foot and bicycle traffic: 40 mm.
- Light domestic traffic occasionally up to 3 tonne gross: 50 mm.

Cutting units: Cut paving units to maintain sharp edges and accurate joints and margins.

Manufacturer: > UrbanStone Ultra Premium

Size: > To be selected

Colour: > "Saltbush" terrace and "Ironbark" driveway

Driveway Paving**Terrace Paving**

Install UrbanStoneUltra Premium paving to manufacturer's specifications for "Rigid Pavement System".

Allow for graded falls to pits indicated on Hydraulic Engineer's working drawings

PROPOSED NEW RESIDENCE AND POOL

162 NARRABEEN PARK PARADE, MONA VALE



SCHEDULE OF DRAWINGS

- A01 SITE PLAN 1:200
- A02 BASEMENT PLAN 1:100
- A03 GROUND FLOOR PLAN 1:100
- A04 FIRST FLOOR PLAN 1:100
- A05 ELEVATIONS 1:100
- A06 ELEVATIONS 1:100
- A07 SECTIONS 1:100
- A08 SECTIONS 1:100
- A09 SECTIONS 1:100
- A10 DRIVEWAY PLAN & SECTIONS 1:100
- A11 SITE SETOUT 1:200
- A12 ROOF & DRAINAGE PLAN 1:200
- A13 WINDOW SCHEDULE 1:100

CALCULATIONS OF AREAS

TOTAL SITE AREA = 633m²

PROPOSED IMPERVIOUS AREAS = 292m² = 46%

DWELLING FOOTPRINT = 192m²

TERRACE & POOL HARD AREAS = 54m²

DRIVEWAY AND STAIRS = 36m²

OTHER SOFT AREAS (too narrow for classification as soft areas) = 10m²

PROPOSED SOFT AREAS = 341m² = 54%

POOL WET AREA = 28m²

SOFT LANDSCAPING FRONT = 96m²

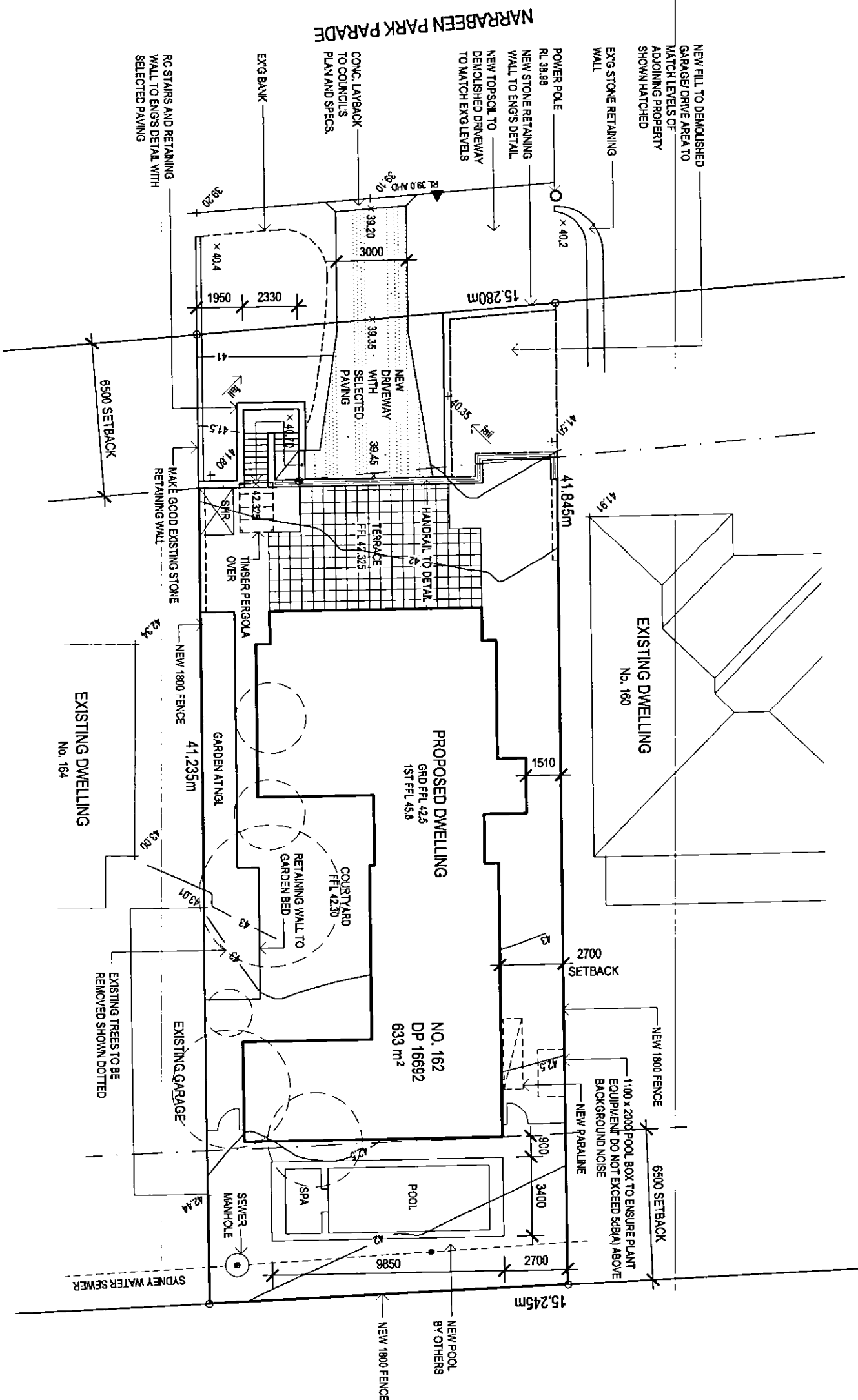
SOFT LANDSCAPING (REAR AND SIDE) = 217m²

EXISTING AREAS = 201.7m²

EXISTING DWELLING FOOTPRINT = 145.5m²

TOTAL EXISTING IMPERVIOUS AREAS = 201.7m²

TOTAL EXTRA IMPERVIOUS = 90m²

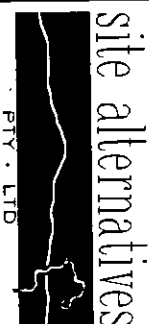


SITE PLAN 1:200

AMENDMENTS	DATE	ISSUE	DESCRIPTION	DATE
A	14/07/06	1	ISSUE FOR APPROVAL	
B	14/07/06	2	AMEND FRONT GARDEN, REAR FRONT STAIR AND PAINT RELOADED	
C		3	CONSTRUCTION CERTIFICATE	

NOTES

- All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
- Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
- All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1824 1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewage and water authorities.



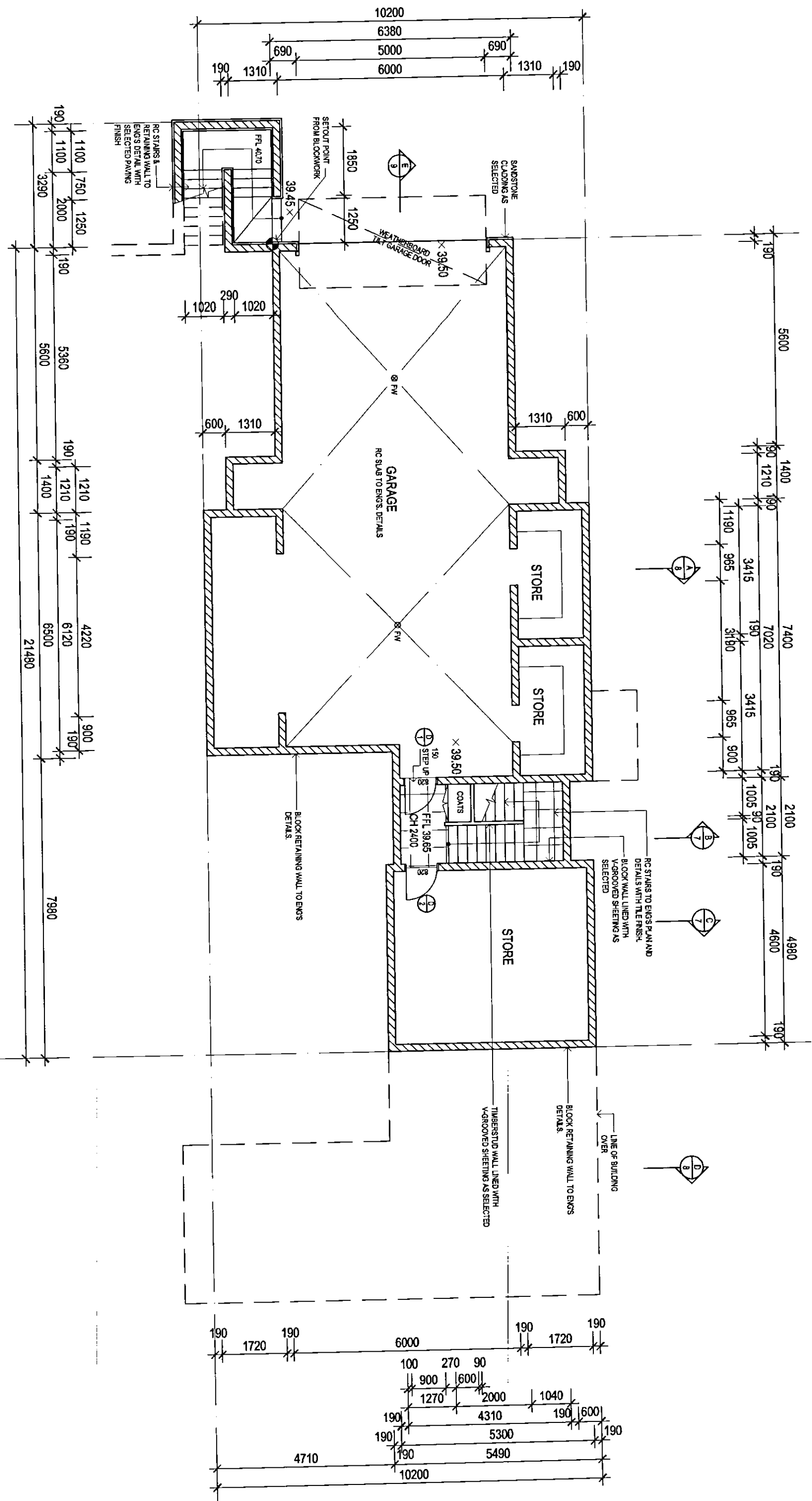
Suite 1, Level 1, 55 Grandview Street
Pymble NSW 2073
PO BOX 6215 Pymble NSW 2073
Ph 02 9488 6800 Fax 02 9144 6864

PROJECT TITLE
NEW DWELLING
162 NARRABEEN PARK PARADE, MONA VALE

DRAWING TITLE
SITE PLAN

SCALE
1:200 @ A3

DATE	NT	15	DRAWING NUMBER
06/04	GS		A01-C



AMENDMENTS	ISSUE	DESCRIPTION	DATE	STATUS	DESCRIPTION	DATE
1	REWORKED APPROXIMATE	14/07/23				
2	AMEND FRONT GARDEN VERGE FRONT STAIR AND PAINTING REQUIRED	14/07/23				
3	CONSTRUCTION CERTIFICATE	14/07/23				

NOTES

1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
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PROJECT TITLE
NEW DWELLING
162 NARRABEEN PARK PARADE, MONA VALE

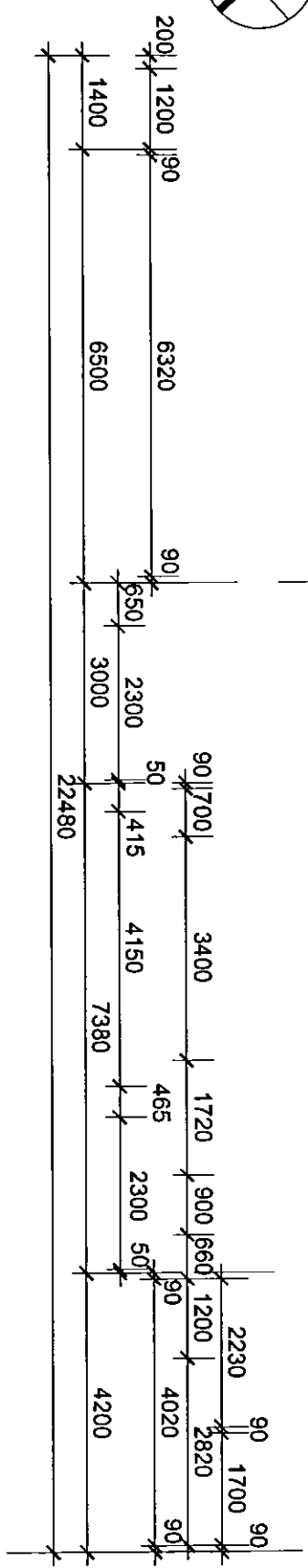
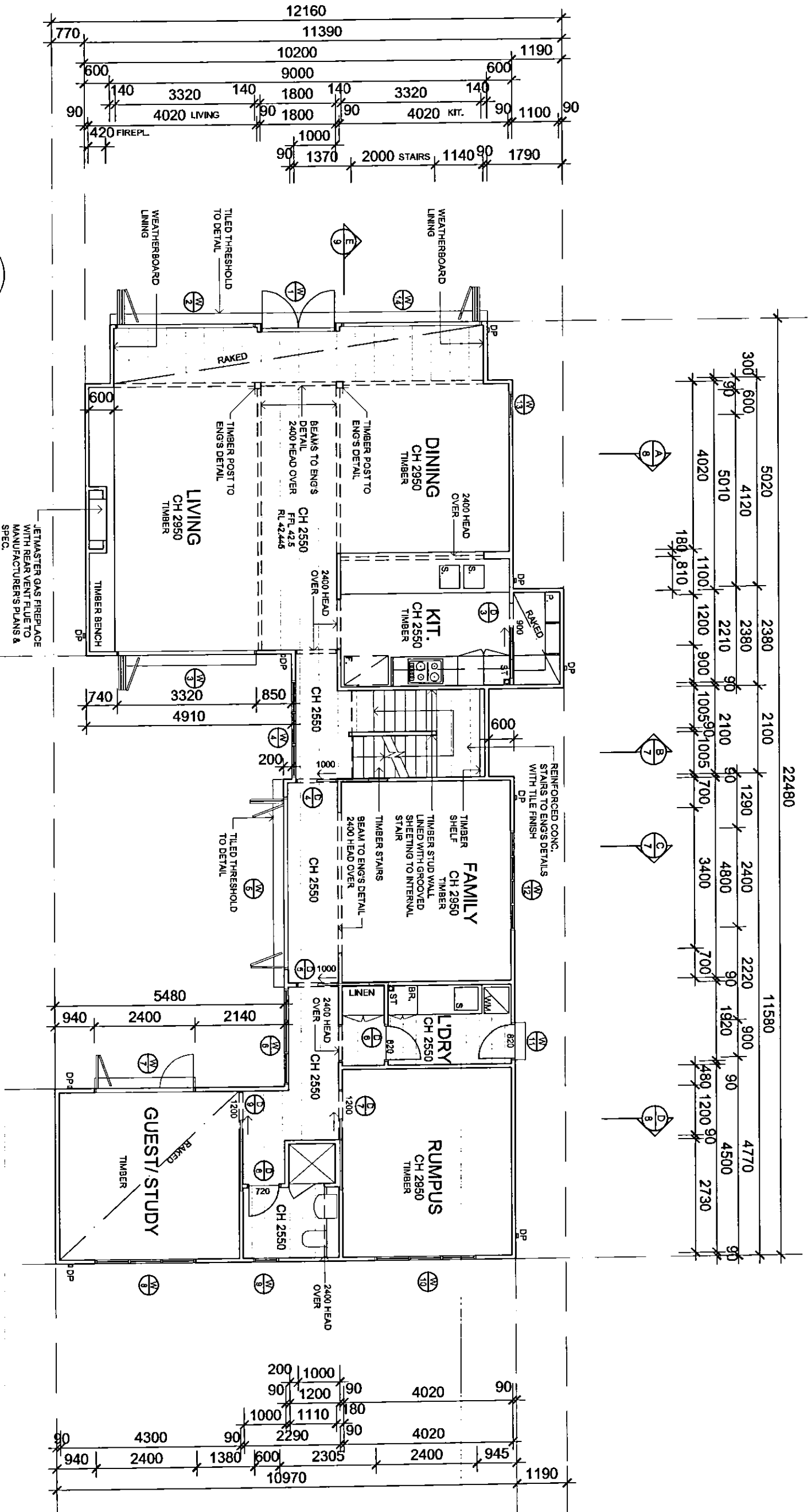
DRAWING TITLE
BASEMENT PLAN
SCALE 1:100 @ A3

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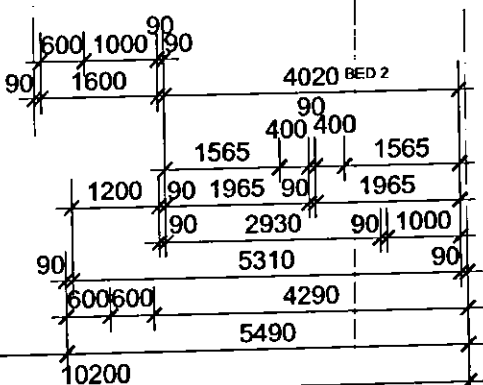
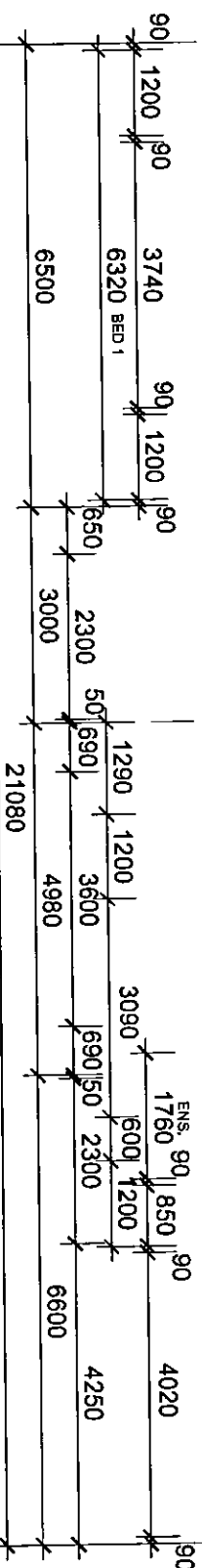
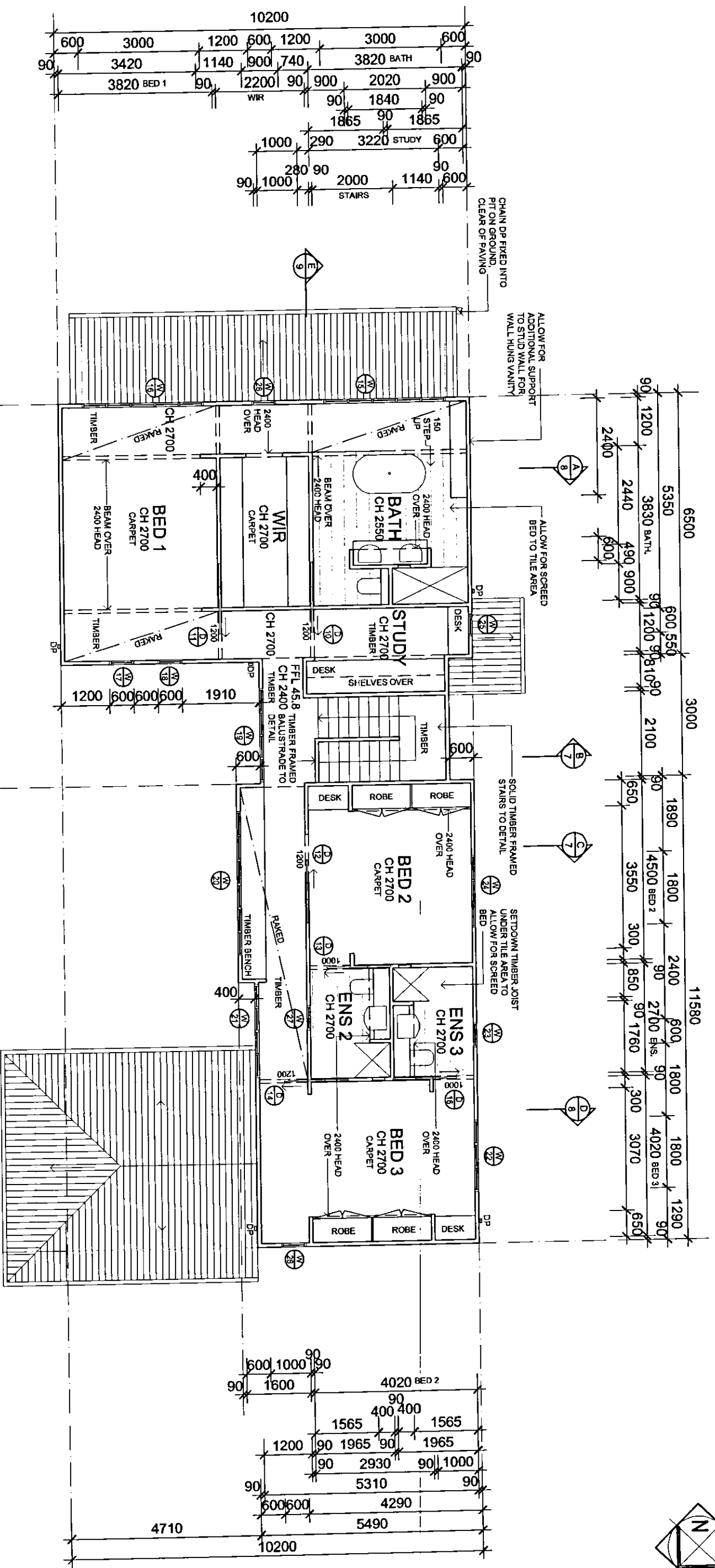
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JOB NO.
904

DRAWING NUMBER
A02-C



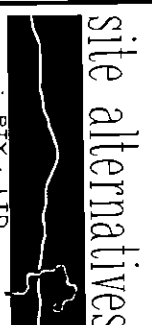
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ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	DATE	1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation. 2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered. 3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1684.1:1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewerage and water authorities.			
A	DEVELOPMENT APPLICATION	May 06							
B	AMEND FRONT GARDEN VERGE FRONT STAIR AND RAMPING REDUCED	14.07.06							
C	CONSTRUCTION CERTIFICATE	AUG 06							
					</				



AMENDMENTS	ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION		May 06
B	AMEND FRONT GARDEN VERGE FRONT STAIR AND PAINTY REDUCED		14/07/06
C	CONSTRUCTION DEFECTIVE		AUG 06

NOTES

1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1684 (1992) and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, storage and water authorities.



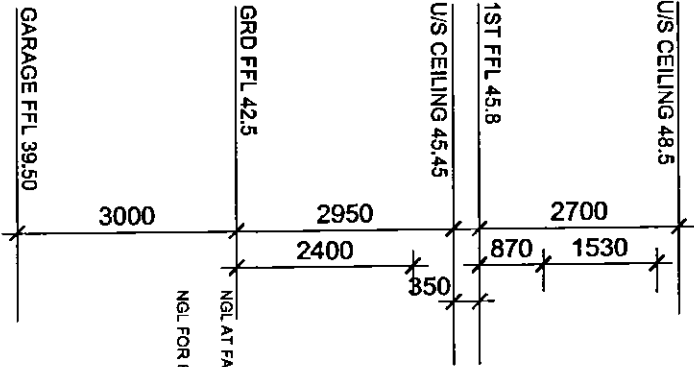
Suite 1, Level 1, 55 Grandview Street
Pymble NSW 2073
PO BOX 6215 Pymble NSW 2073
Ph 02 9488 6800 Fax 02 9144 6864

PROJECT TITLE
NEW DWELLING
162 NARRABEEN PARK PARADE,
MONA VALE
DRAWING TITLE
FIRST FLOOR PLAN
SCALE 1:100@A3

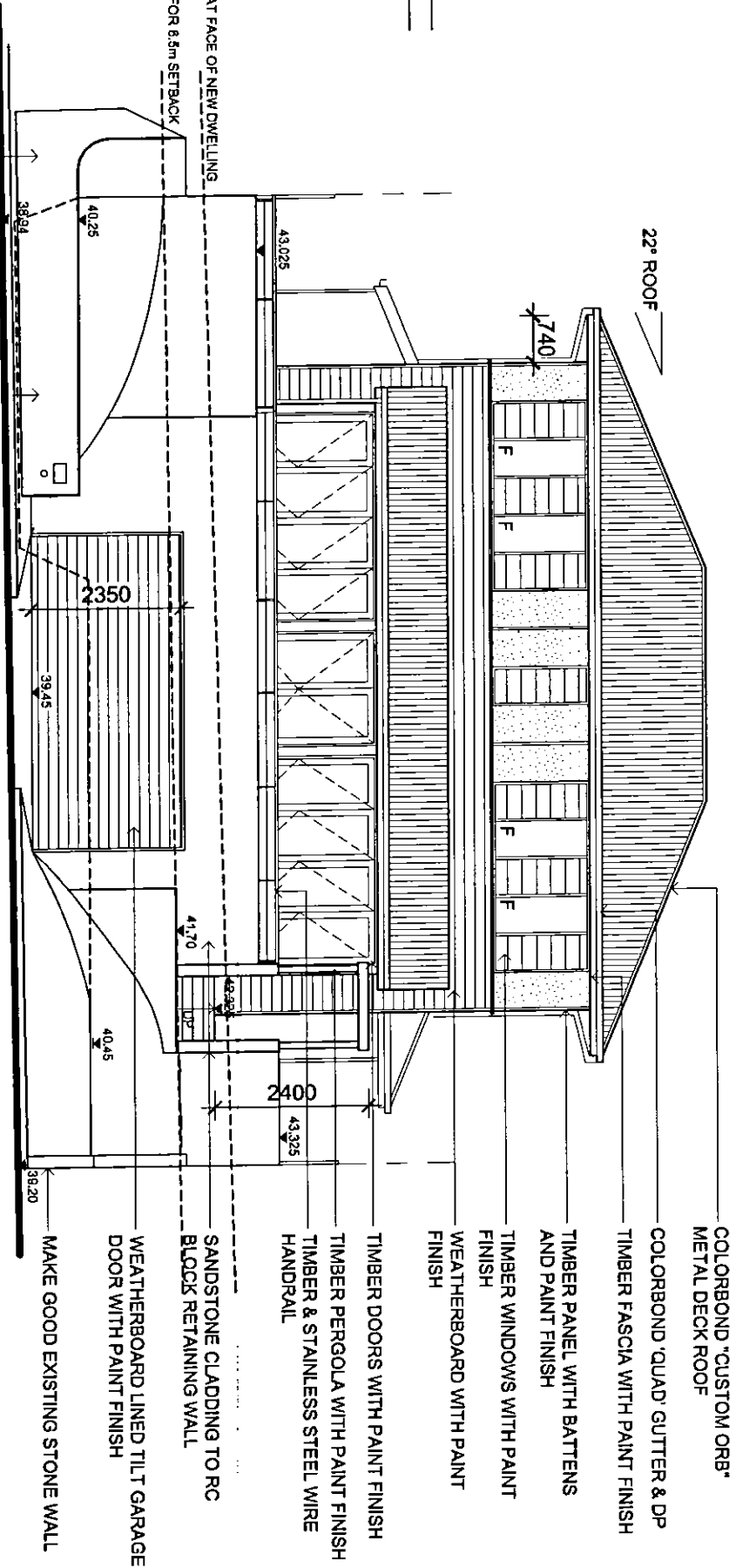
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DRAWING NUMBER
A04-C

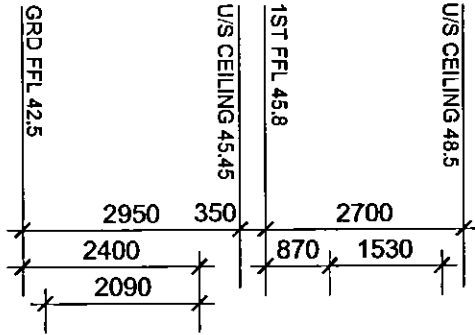
RIDGE 50.10



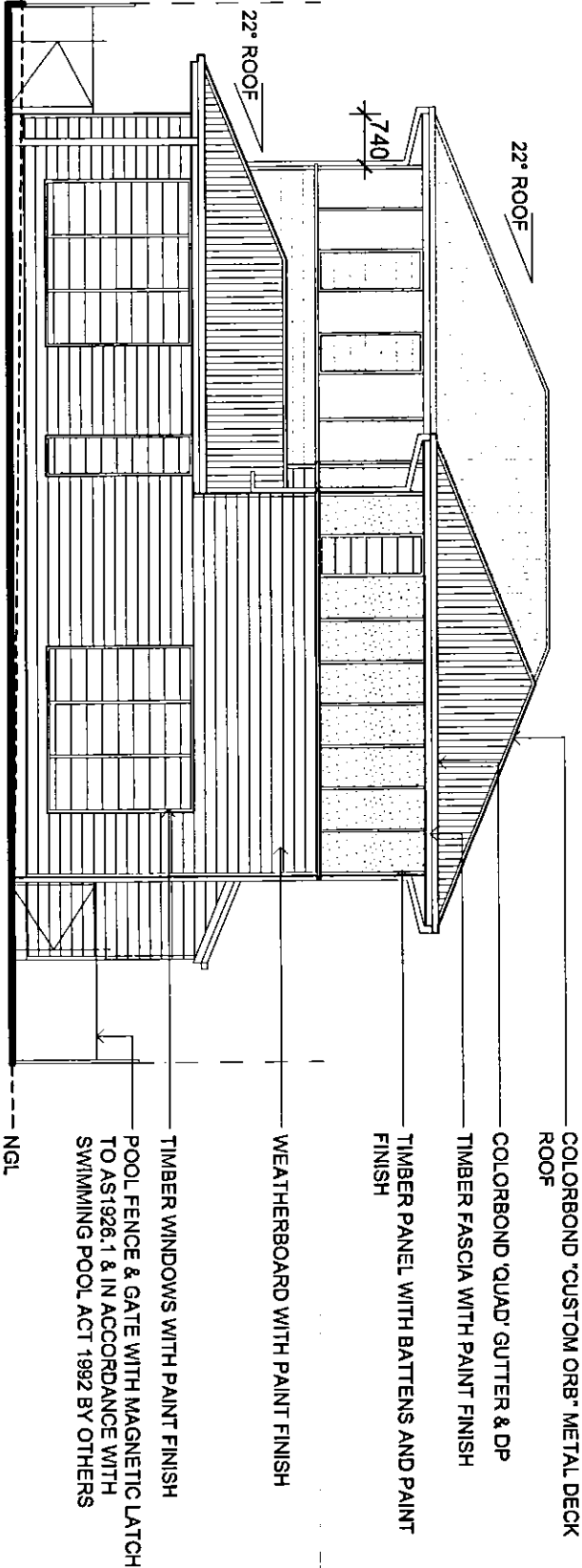
SOUTHEAST ELEVATION
(STREET FRONT)



RIDGE 50.10



NORTHWEST ELEVATION



AMENDMENTS				
ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION
A	DEVELOPMENT APPLICATION	May 26		
B	AMEND FRONT GARDEN VERGE FRONT STAIR AND MANTLE REDUCED	14.07.08		
C	CONSTRUCTION CERTIFICATE	AUG 08		

NOTES
1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1824 1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewage and water authorities.

site alternatives



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PROJECT TITLE
NEW DWELLING
162 NARRABEEN PARK PARADE,
MONA VALE
DRAWING TITLE
ELEVATIONS
SCALE 1:100@A3

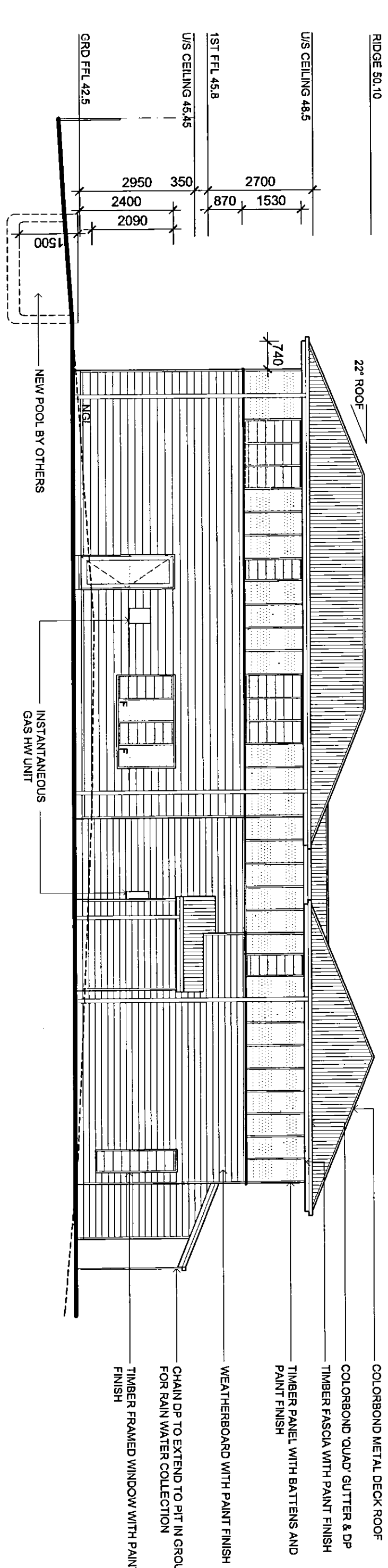
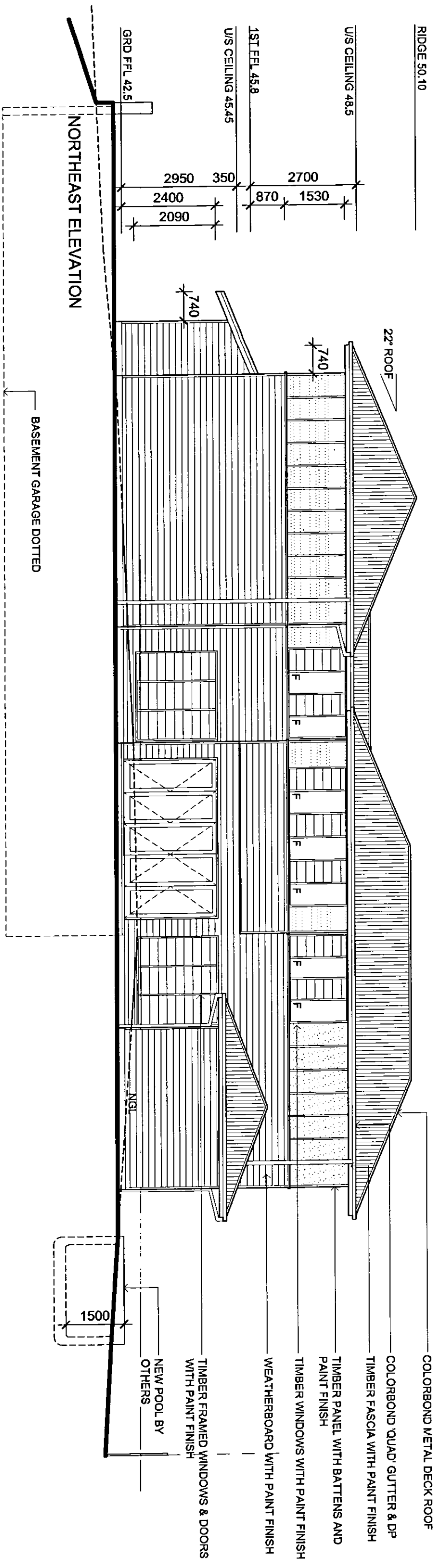
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JOB NO
904

REVISIONS IN SET
15

DRAWING NUMBER
A05-C



AMENDMENTS				NOTES	
ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION	May 98			
B	AMEND FRONT GARDEN VERGE FRONT FENCE AND DRIVEY REDUCED	14.07.98			
C	CONSTRUCTION CERTIFICATE	AUG 98			

1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1884 1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewerage and water authorities.

site alternatives PTY. LTD		Suite 1, Level 1, 55 Grandview Street Pymble NSW 2073 PO BOX 6215 Pymble NSW 2073 Ph 02 9488 6800 Fax 02 9144 6864	PROJECT TITLE NEW DWELLING 162 NARRABEEN PARK PARADE, MDNA VALE DRAWING TITLE ELEVATIONS SCALE 1:100@A3	DRAWN NT	DATE 15
				CHECKED GS	DRAWING NUMBER A06-C
				JOB NO 904	

BUILDING ENVELOPE CONTROL DOTTED

ROOF PITCH 10°

**- COLORBOND QUAD GUTTER FIXED TO
TIMBER FASCIA**

TIMBER FRAMED WINDOW

**'RUSTICATED' WEATHRBORDS
FIXED TO TIMBER STUD WALL
SARKED & LINED WITH R1.3
INSULATION**

- V-GROOVED LINING AS SELECTED FIXED TO TIMBER STUD WALL & BALUSTRADE
- V-GROOVED LINING TO CEILING

—'RUSTICATED' WEATHERBOARD WITH PAINT FINISH SARKED & LINED WITH R1.3 INSULATION

— SOLID TIMBER FRAMED STAIRS

NO STAIRS OR EMBOS DETAILS WITH SELECTED TILE FINISH

— WATERPROOF MEMBRANE, DRAINAGE CELL, AG LINE & BLUOMETAL BACKFILL TO REAR OF RC BLOCK WALL TO ENDS DETAILS

Architectural section drawing of a building, showing internal structure, roof pitches, and material specifications. The drawing includes the following labels and dimensions:

- Roof Pitches:**
 - ROOF PITCH 22° (Main roof)
 - ROOF PITCH 10° (Attic roof)
- Material and Construction Specifications:**
 - TIMBER FRAMED WINDOW
 - RUSTICATED WEATHEROARDS FIXED TO TIMBER STUD WALL SARKED & LINED WITH R1.3 INSULATION
 - TIMBER FRAMED BI-FOLD DOORS
 - RC SLAB WITH TILE FINISH
 - NGL (Natural Ground Level)
- Dimensions:**
 - 740 (Height of main floor)
 - 1000 (Height of attic floor)
 - 2500 (Width of main floor)
 - 2000 MIN. (Minimum width of stairs)
 - 1000 (Width of stairs)

— CARBON DUTY: GITTER EXEN TO

- V-GROOVED EAVES LINING TO US RAFTERS
- FIXED TO BATTENS WITH BATTEN CORNICE
- V-GROOVED LINING TO US OF RAKED
- RAFTERS FIXED TO BATTEN

OFFROAD TRAINING

**WITH PAINT FINISH SAVED &
LINED WITH R1.3 INSULATION**

— V-GROOVED LINING TO U/S CEILING
WITH BATTEN CORNICE

— LAMBER BIFOLD BOOKS

1

RC SLAB TO ENG'S DETAILS

NOTES

1. All dimensions are to be checked on site and with boundaries, existing levels and other site condition by the builder and/or each contractor before the commencement of any work including excavation.

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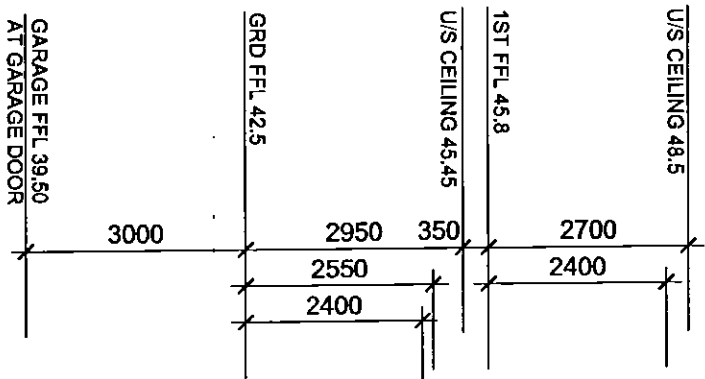
3. All work is to comply with "The Building Code of Australia," "The National Timber Framing Code", AS1684, 1982 and all the other applicable standards as the Standards Association of Australia as well as local government, electricity authorities, sewerage and water authorities.

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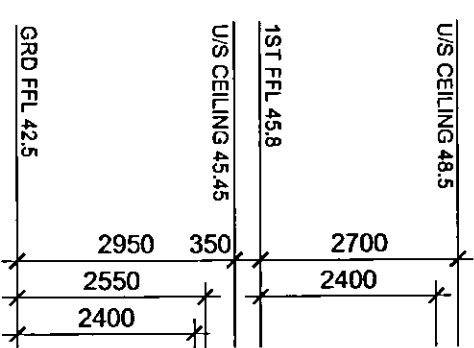
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NT	15
CHICKEN	DRAWING NUMBER
GS	A07-0
JOB NO.	
904	

A07-C

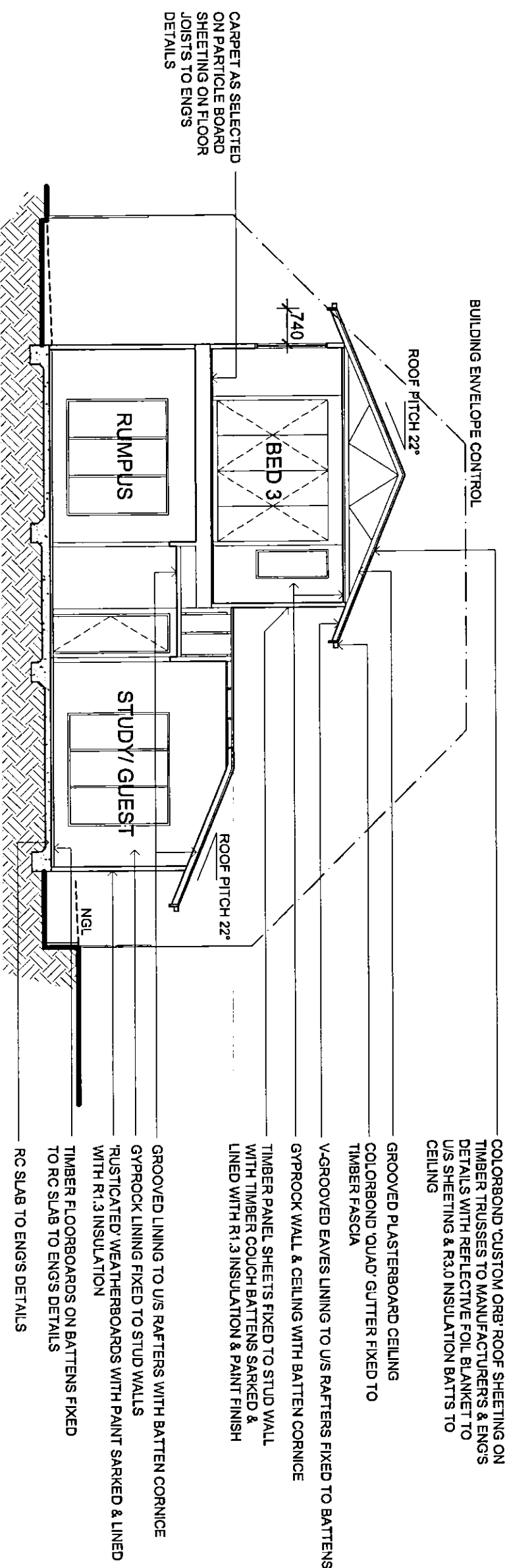
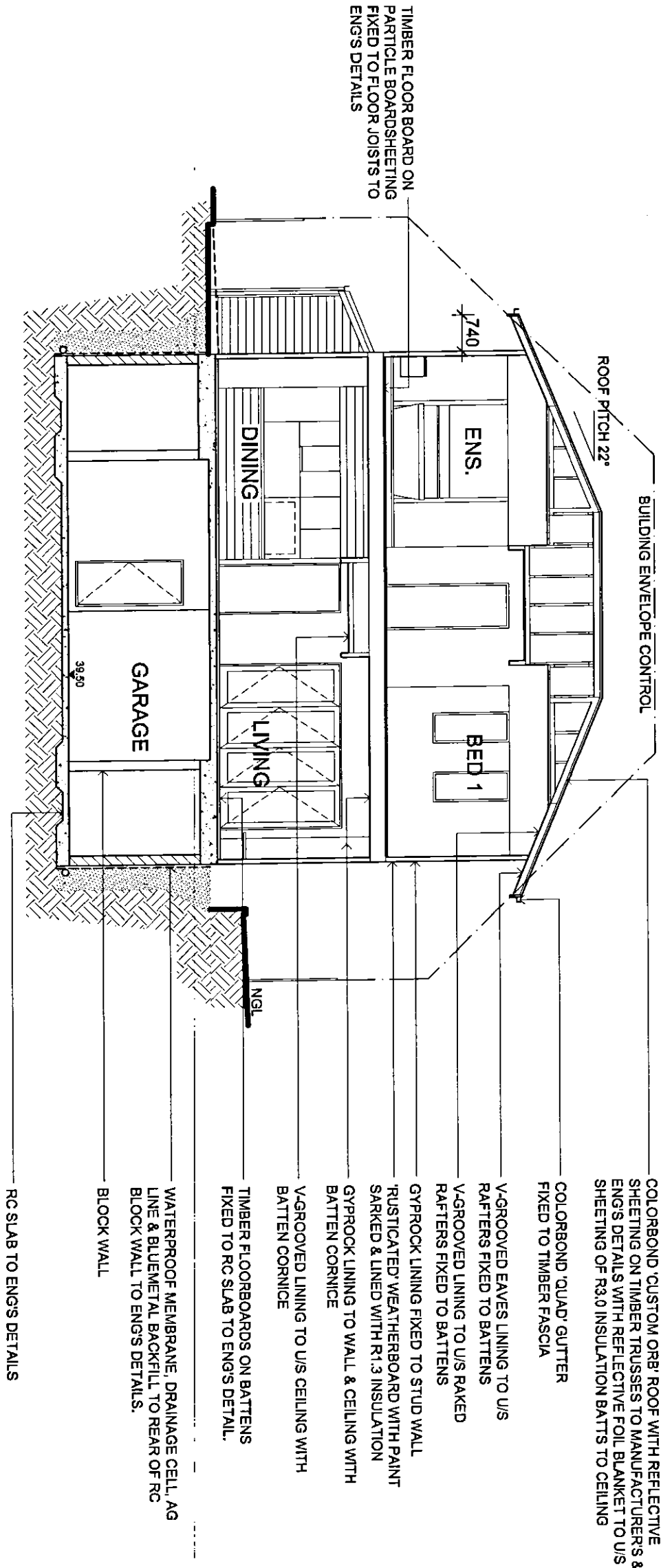
RIDGE 50.10



SECTION AA



SECTION DD



CARPET AS SELECTED ON PARTICLE BOARD SHEETING ON FLOOR JOISTS TO ENGS DETAILS

AMENDMENTS	ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	DATE
A	DESCRIPTION	DATE				
B	DESCRIPTION	DATE				
C	DESCRIPTION	DATE				

NOTES
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site alternatives

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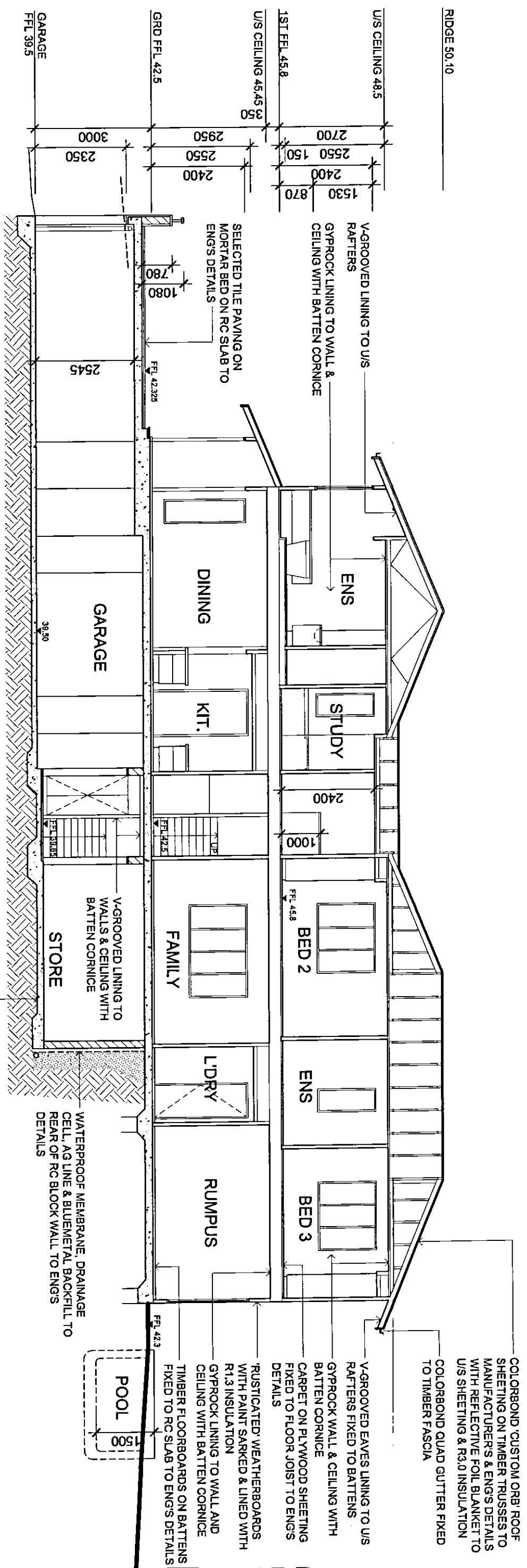
NEW DWELLING
162 NARRABEEN PARK PARADE, MONA VALE

SECTIONS
SCALE 1:100 @A3

DRAWING NO. 15

DRAWING NAME A08-C

RIDGE 50.10



SECTION EE

AMENDMENTS					
ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION	May 08			
B	AMEND FRONT GARDEN VERGE FRONT STAIR AND PLANTING BEDS	14.07.08			
C	CONSTRUCTION CERTIFICATE	AUG 08			

NOTES

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site alternatives

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PROJECT TITLE

NEW DWELLING

162 NARRABEEN PARK PARADE,

MONA VALE

DRAWING TITLE

SECTIONS

SCALE

1:100@A3

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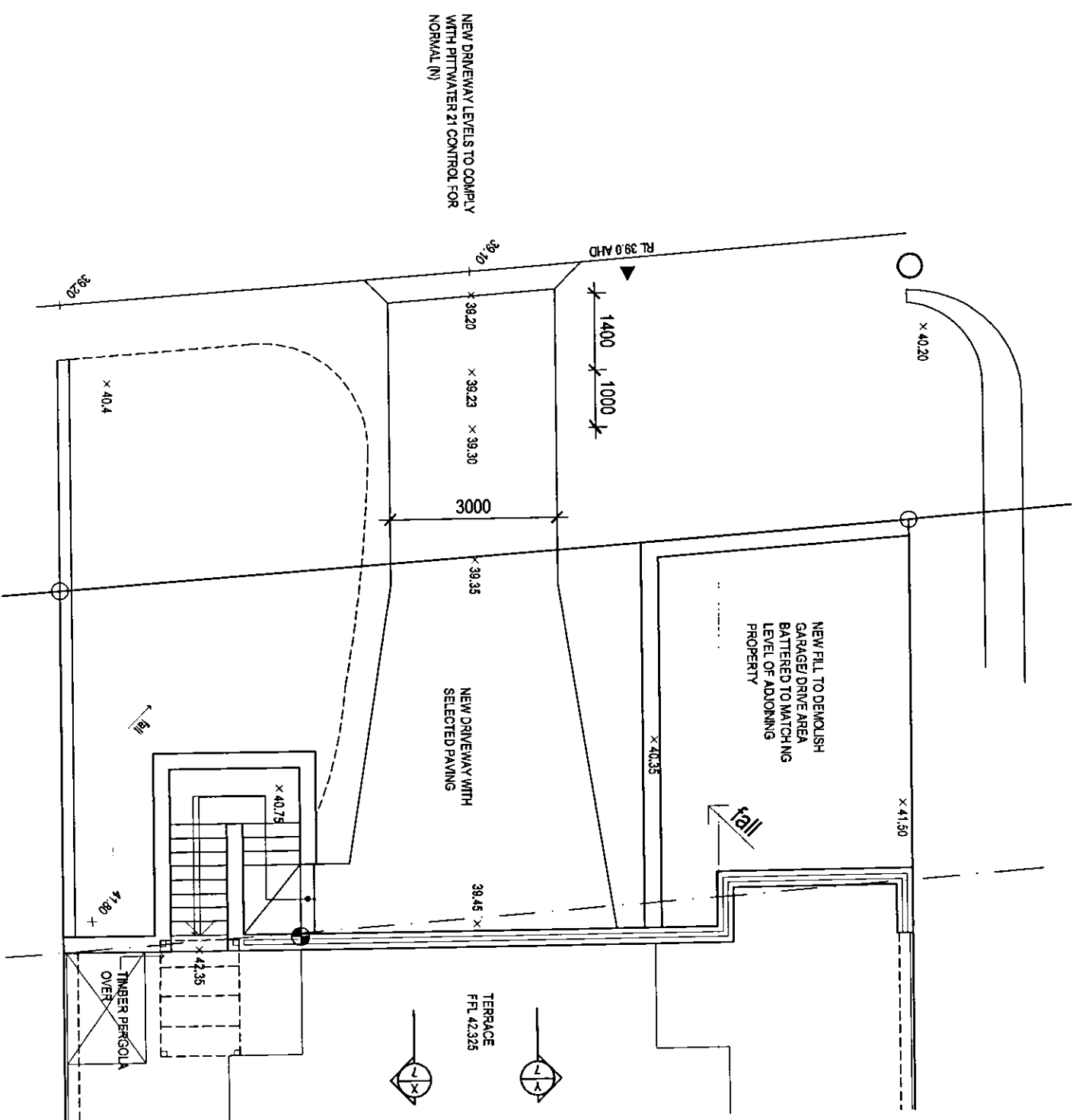
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JOB NO.

904

DRAWING NUMBER

A09-C



COUNCIL VERGE

FRONT SETBACK

1400

1000

NATURAL GROUND LEVEL

NEW STONE RETAINING WALL

EXISTING ADJOINING BANK

39.10 39.20 39.23 39.30 39.35 39.36 42.35 39.50

GARAGE

AMENDMENTS					DATE
ISSUE	DESCRIPTION	DATE	ISSUE	DESCRIPTION	
A	DEVELOPER JAP. CATION	May 04			
B	ADDED FRONT GARDEN WEDGE FRONT SHIR	14/07/04			
C	CONSTRUCTION CONTRACT	AUG 04			

NOTES
1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation. 2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty. Limited as soon as they are discovered. 3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS 1684, 1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewage and water authorities.

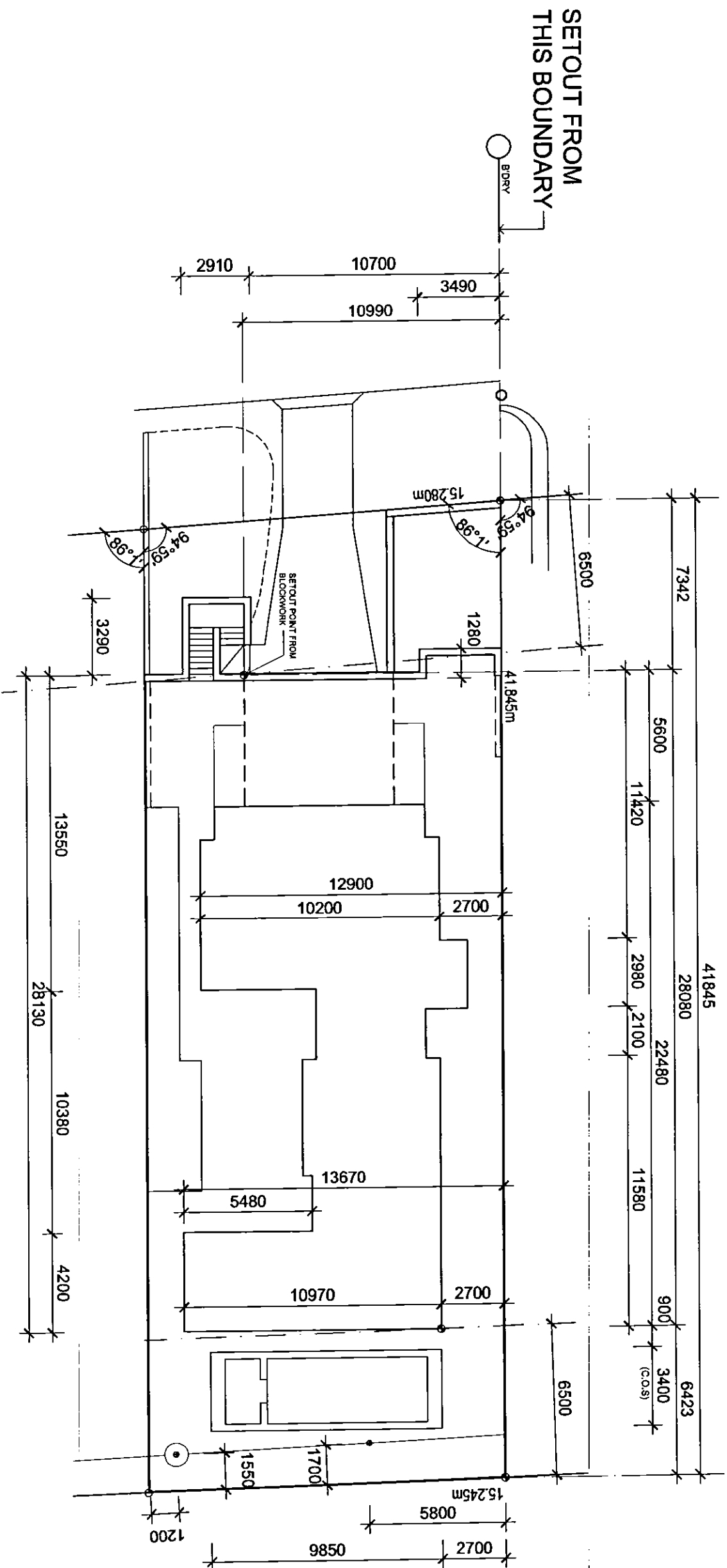
site alternatives
PTY. LTD

Suite 1, Level 1, 55 Grandview Street
Pyrmble NSW 2073

PO BOX 6215 Pyrmble NSW 2073

PH 02 9488 6800 FAX 02 9144 6864

PROJECT TITLE		DRAWING NO.	DRAWING NAME
PROJECT TITLE			
NEW DWELLING 182 NARRABEEN PARK PARADE, MONA VALE		NT	15
DRAWING TITLE DRIVEWAY PLANS & ELEVATIONS		CS	
SCALE 1:100 @3		JOB NO. 904	A10-C



SETOUT FROM
THIS BOUNDARY

BDRY

SETOUT POINT FROM
BLOCKWORK

AMENDMENTS				
ISSUE	DESCRIPTION	DATE	ISSUE	DATE
A	DEVELOPMENT APPLICATION	14.07.06		
B	AS1684 1892 REDUCED			
C	CONSTRUCTION CERTIFICATE	14.07.06		

NOTES
1. All dimensions are to be checked on site and with boundaries, existing levels and other site condition by the builder and/or each contractor before the commencement of any work including excavation.
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PROJECT TITLE
NEW DWELLING
162 MARRABEEN PARK PARADE, MONA VALE

DRAWING TITLE
SITE SETOUT PLAN
SCALE 1:200@A3

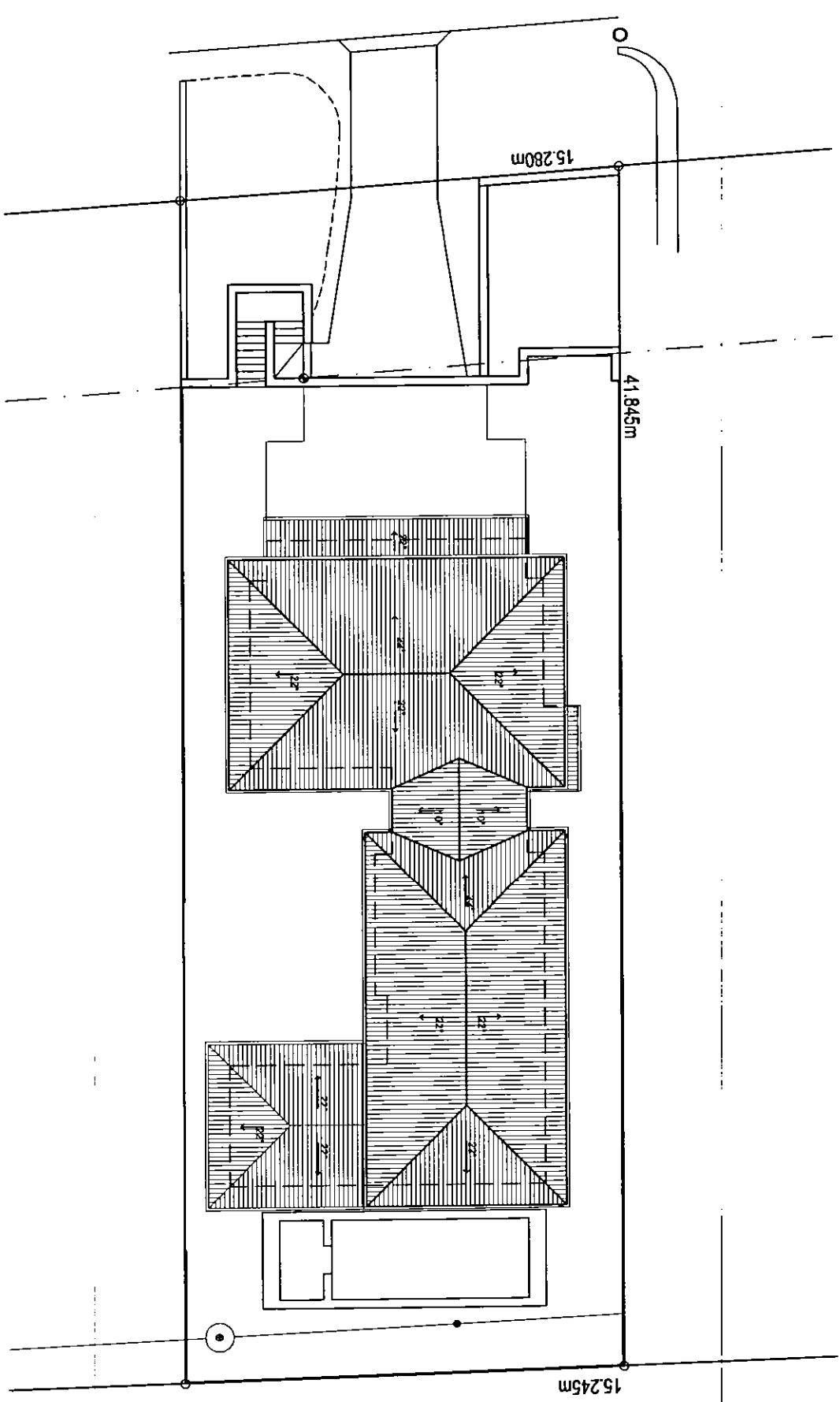
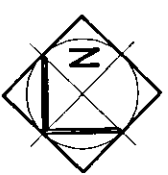
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JOB NO.
904

DRAWN BY
15

DRAWING NUMBER
A11-C



AMENDMENTS					NOTES	
ISSUE	DESCRIPTION	DATE	SS/IF	DESCRIPTION	DATE	
A	RELOCATION OF ROOF	14/07/16				1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
B	AMEND FRONT GABLES WERE FROM 3700 AND 3400 REDUCED	14/07/16				2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
C	COMMITMENT CERTIFICATE	14/07/16				3. All work is to comply with "The Building Code of Australia", "The National Timber Framing Code", AS1884:1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewage and water authorities.

site alternatives

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Ph 02 9488 6800 Fax 02 9144 6864

PROJECT TITLE

NEW DWELLING
162 MARRABEEN PARK PARADE, MONA VALE

DRAWING TITLE

ROOF PLAN

SCALE

1:200@A3

DRAWN

NT

CHECKED

GS

DATE

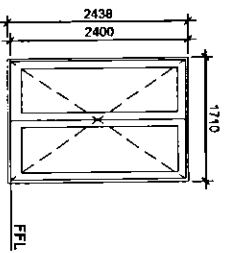
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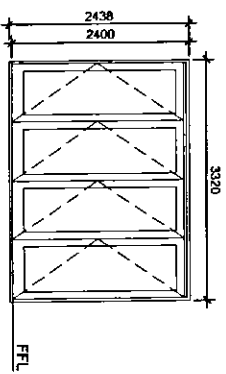
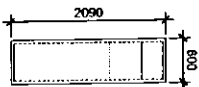
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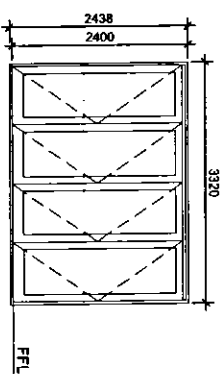
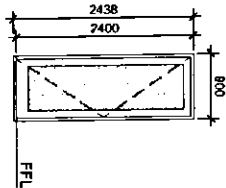
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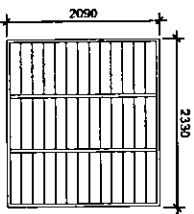
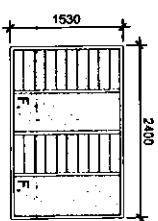
W1
ENTRY
TIMBER FRAME & GLAZED DOORS
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'



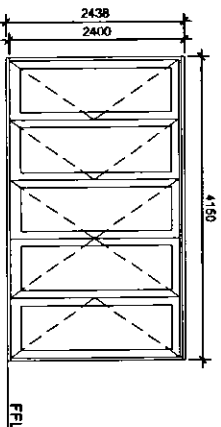
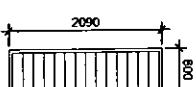
W2
LIVING
BI-FOLD DOOR
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'



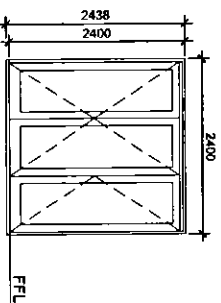
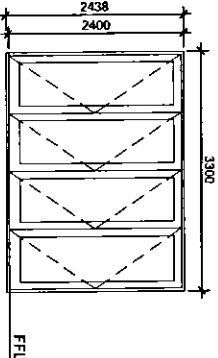
W3
LIVING
BI-FOLD DOOR
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'



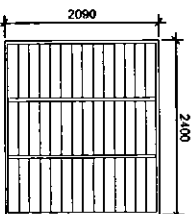
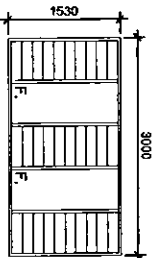
W4/ W6
STAIR/ HALL
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY WITH
MATCHING CLIPS
SINGLE PYROLYTIC LOW-E - 'CLEAR'
2 OFF



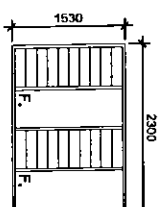
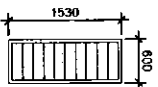
W5
FAMILY
BI-FOLD DOOR
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'



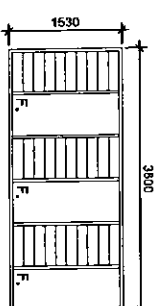
W7
GUEST/ STUDY
BI-FOLD DOOR
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'



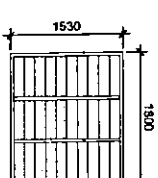
W8/ W10
GUEST/ RUMPUIS
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY AND MATCHING CLIPS
SINGLE PYROLYTIC LOW-E - 'CLEAR'



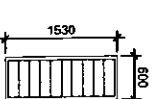
W9
POWDERROOM
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY AND MATCHING CLIPS
'SANDBLASTED'



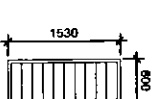
W11
LAUNDRY
TIMBER FRAME & GLAZED DOOR
WRC (38mm FRAME)
OPEN IN
'SANDBLASTED'



W12
FAMILY
152 BLADE LOUVRES
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
'SANDBLASTED'



W13
DINING
152 BLADE LOUVRES
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
'CLEAR'



W14
DINING
BI-FOLD DOORS
WRC (38mm FRAME) + SILL
OPEN OUT
SINGLE PYROLYTIC LOW-E - 'CLEAR'

W19/ W21
STAIR/ HALL
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
SINGLE PYROLYTIC LOW-E - 'CLEAR'
2 OFF

W20
HALL
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
SINGLE PYROLYTIC LOW-E - 'CLEAR'

W22/ W24
BED 3/ BED 2
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
LOWER HALF 'SANDBLASTED'
UPPER HALF 'CLEAR'

W23/ W25/ W28
ENS BED 3/ STUDY/ WIR
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY & MATCHING CLIPS
'SANDBLASTED'

W27
ENS BED 2/ STUDY/ BED 3/ WIR
152 BLADE LOUVE
WRC (38mm FRAME)
WHITE GALLERY MATCHING CLIPS
TIMBER LOUVRES PRIMED

NOTE:
1. ALL WINDOWS KEYED ALIKE.
2. ALL DIMS TO BE CHECKED & MEASURED ON SITE PRIOR TO MANUFACTURE.
3. TO COMPLY WITH BCA & RELEVANT AUSTRALIAN STANDARDS.
4. ALL TIMBER TO BE PRIMED

AMENDMENTS			
ISSUE	DESCRIPTION	DATE	ISSUE
A	DEVELOPMENT APPLICATION	May '06	
B	AMEND FRONT GARDEN VENTURE FRONT STAIR AND ENTRY REDUCED	14.07.06	
C	CONSTRUCTION CERTIFICATE	AUG 06	

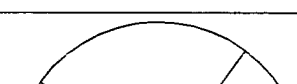
NOTES
1. All dimensions are to be checked on site and with boundaries, existing levels and other site conditions by the builder and/or each contractor before the commencement of any work including excavation.
2. Do not scale drawings. If in doubt, report any discrepancies to Site Alternatives Pty Limited as soon as they are discovered.
3. All work is to comply with 'The Building Code of Australia', 'The National Timber Framing Code', AS1684 1992 and all the other applicable standards of the Standards Association of Australia as well as local government, electricity authorities, sewage and water authorities.

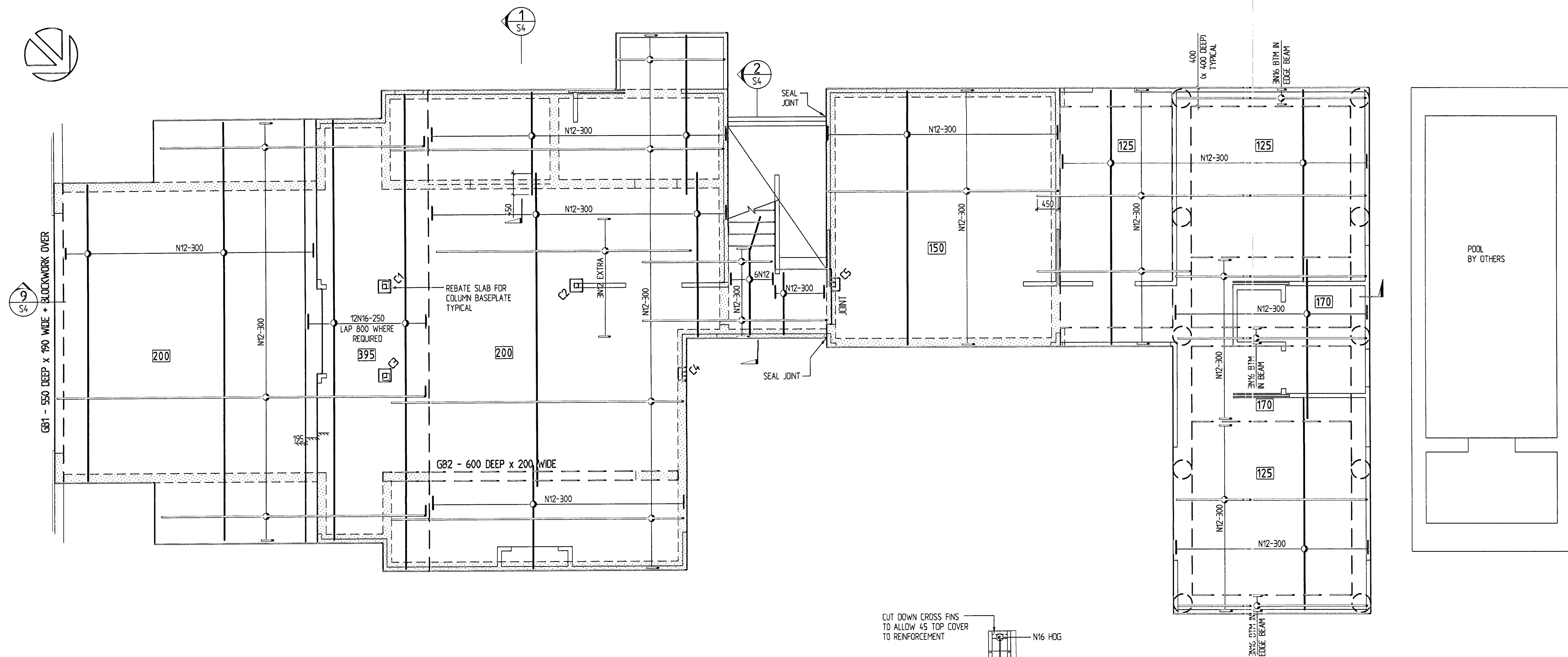
site alternatives PTY - LTD		Suite 1, Level 1, 55 Grandview Street Pymble NSW 2073 PO BOX 6215 Pymble NSW 2073 Ph 02 9488 6800 Fax 02 9144 6864	
PROJECT TITLE NEW DWELLING 162 NARRABEEN PARK PARADE, MOVA VALE		DRAWN NT	DRAWINGS & SET 15
DRAWING TITLE WINDOW SCHEDULE		CHECKED GS	DRAWING NUMBER A13-C
SCALE 1:100@A3		JOB NO. 504	

BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	SPACING	MATURE HEIGHT
CANOPY TREES				
<i>Angophora costata</i>	Sydney Red Gum	25ltr	as shown	20m
<i>Banksia integrifolia</i>	Coast Banksia	25ltr	as shown	8m
<i>Cupaniopsis anacardioides</i>	Tuckeroo	45ltr	as shown	12m
<i>Hymenosporum flavum</i>	Native Frangipani	45ltr	as shown	10m
<i>Plumeria rubra</i>	Frangipani	45ltr	as shown	8m
SCREEN PLANTING				
<i>Acacia longifolia</i>	Sydney Golden Wattle	5ltr	as shown	6m
<i>Acmena smithii</i>	Lillypilly	25ltr	as shown	5m
<i>Casuarina glauca</i>	Swamp She Oak	5ltr	as shown	20m
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	15ltr	as shown	5m
<i>Leptospermum laevigatum</i>	Coast Tea Tree	25ltr	as shown	4m
<i>Metrosideros excelsa</i>	NZ Christmas Bush	25ltr	as shown	10m
SHRUBS				
<i>Banksia spinulosa</i>	Hairpin Banksia	200mm	4 per m2	1m
<i>Bauera rubioides</i>	Dog Rose	150mm	4 per m2	1m
<i>Correa alba</i>	White Correa	200mm	4 per m2	1m
<i>Crinum pedunculatum</i>	River Lily	200mm	4 per m2	1.2m
<i>Doryanthes excelsa</i>	Gymea Lily	200mm	4 per m2	3m
<i>Grevillea lavandulacea</i>	French Lavander	100mm	4 per m2	0.2m
<i>Grevillea 'Sandra Gordon'</i>	Grevillea	200mm	4 per m2	0.5m
<i>Leptospermum polygalifolium</i>	Yellow Tea Tree	200mm	4 per m2	1.8m
<i>Myoporum acuminatum</i>	Mangrove Boobialla	200mm	4 per m2	4-6m
<i>Melaleuca thymifolia</i>	Thyme Honey Myrtle	200mm	4 per m2	1m
<i>Westringia fruticosa</i>	Coastal Rosemary	200mm	4 per m2	1.5m
PALMS & FERNS				
<i>Adiantum aethiopicum</i>	Common Maidenhair	150mm	6 per m2	0.3m
<i>Blechnum nudum</i>	Fishbone Water Fern	100mm	4 per m2	0.6m
<i>Doodia aspera</i>	Rasp Fern	100mm	6 per m2	0.3m
<i>Dendrobium speciosum</i>	Rock Orchid	200mm	4 per m2	0.5m
GROUNDCOVERS				
<i>Antigonon cultivars</i>	Kangaroo Paw	150mm	6 per m2	0.3m
<i>Alpina caerulea</i>	Native Ginger	150mm	6 per m2	0.2m
<i>Actinotus helianthi</i>	Flannel Flower	150mm	6 per m2	0.2m
<i>Brachycome multifida</i>	Swan River Daisy	100mm	6 per m2	0.2m
<i>Dianella longifolia</i>	Blue Flax Lily	150mm	6 per m2	0.4m
<i>Hibbertia linearis</i>	Showy Guinea Flower	150mm	6 per m2	0.75m
<i>Landulda dentata</i>	Toothed Lavender	150mm	6 per m2	1m
<i>Lomandra tanika</i>	Mat Rush	150mm	6 per m2	0.5m
<i>Myoporum parvifolium</i>	Creeping Boobialla	150mm	6 per m2	0.3m
<i>Patersonia glabrata</i>	Leafy Purple Flag	150mm	6 per m2	0.3m
<i>Pandorea pandorana</i>	Wonga-Wong Vine	150mm	6 per m2	-
<i>Viola hederacea</i>	Native Violet	150mm	6 per m2	0.3m
GRASSES				
<i>Carex appressa</i>	Tall Sedge	150mm	6 per m2	1m
<i>Isoplepis nodosa</i>	Knobby Clubrush	150mm	6 per m2	1m

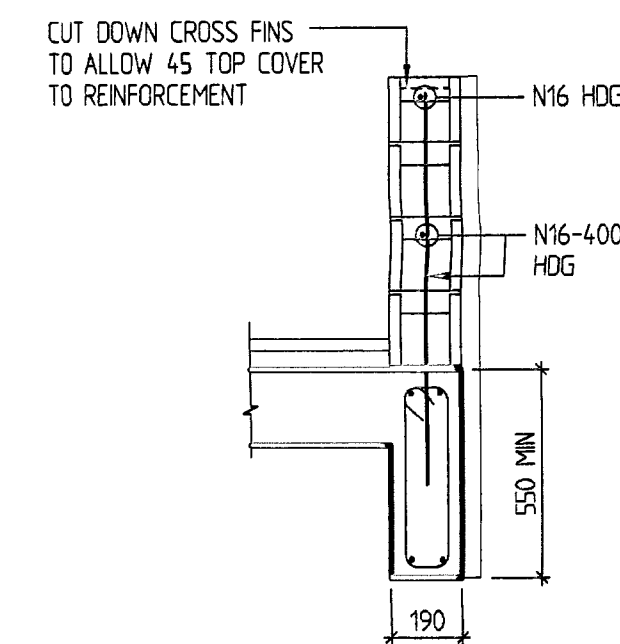


DATE	AMENDMENT	REV	DRN	APPR	
16/05/06	Issued for DA Submission	00	AN	GG	TRACT CONSULTANTS PTY LTD
17/07/06	Re-issued for DA Submission	01	AN	GG	LANDSCAPE ARCHITECTS
17/08/06	Construction Certificate	02	AN	GG	LEVEL 11 88 BLUES POINT ROAD
					MOMAHONS POINT
					SYDNEY NSW 2060
					AUSTRALIA
					TELEPHONE 612 9564 3753
					FACSIMILE 612 9564 3625
					sydney@tract.net.au
					www.tract.net.au
					MELBOURNE SYDNEY BRISBANE
					ASSOCIATED OFFICE PERTH
					QUALITY ENDORSED COMPANY
					ISO 9001 LIC NO 2395

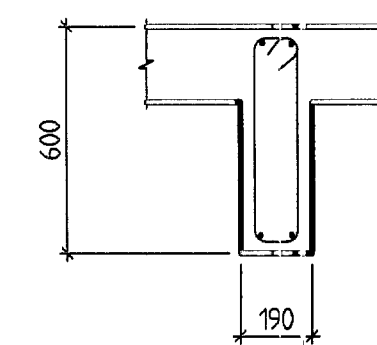
	Title Landscape Plan		Scale: 1:100 @ A1		
	Project Proposed New Residence 162 Narrabeen Park Parade Warriewood		Date 16 May 06	Drawn AN	
Drawing Number 206011 L/D-DD01			Revision 02		



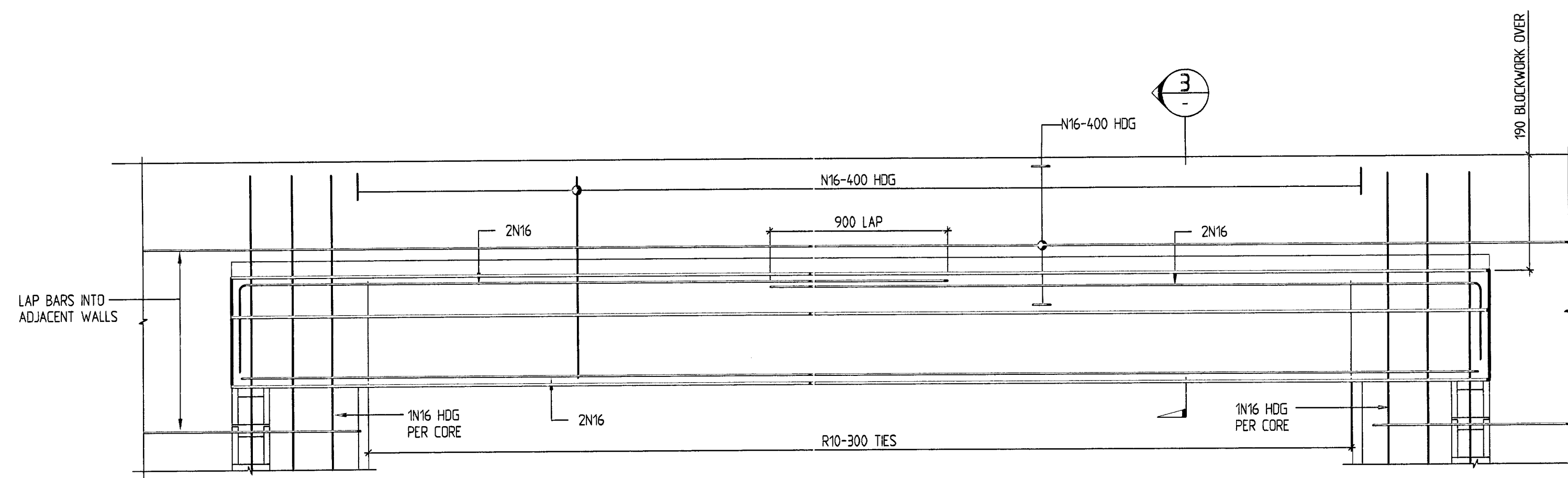
BOTTOM REINFORCEMENT
GROUND FLOOR SLAB LAYOUT
150



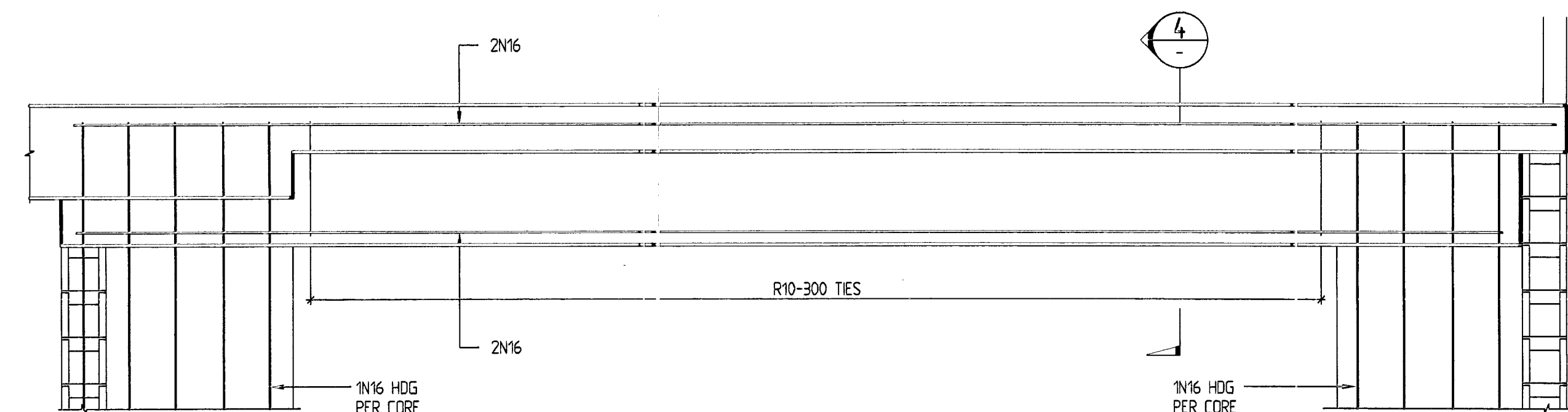
SECTION 3
120



SECTION 4
120

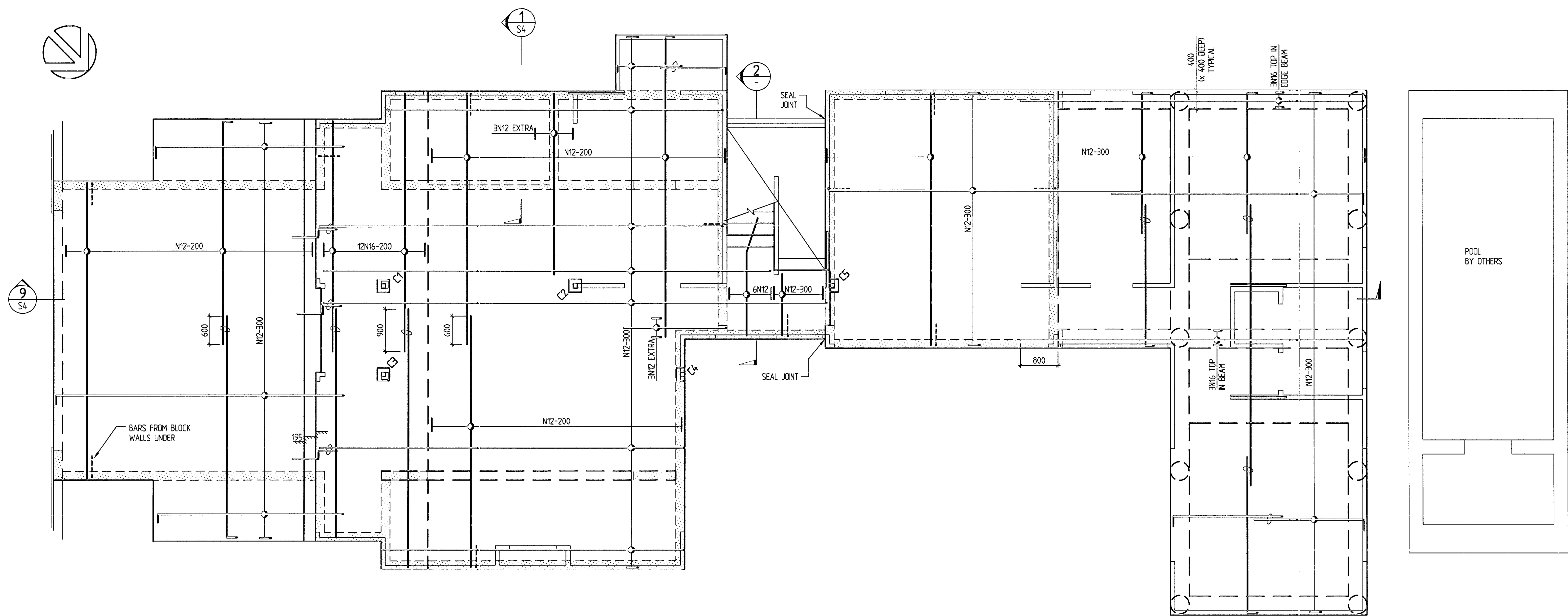


GB1 ELEVATION - 600 DEEP x 190 WIDE
120



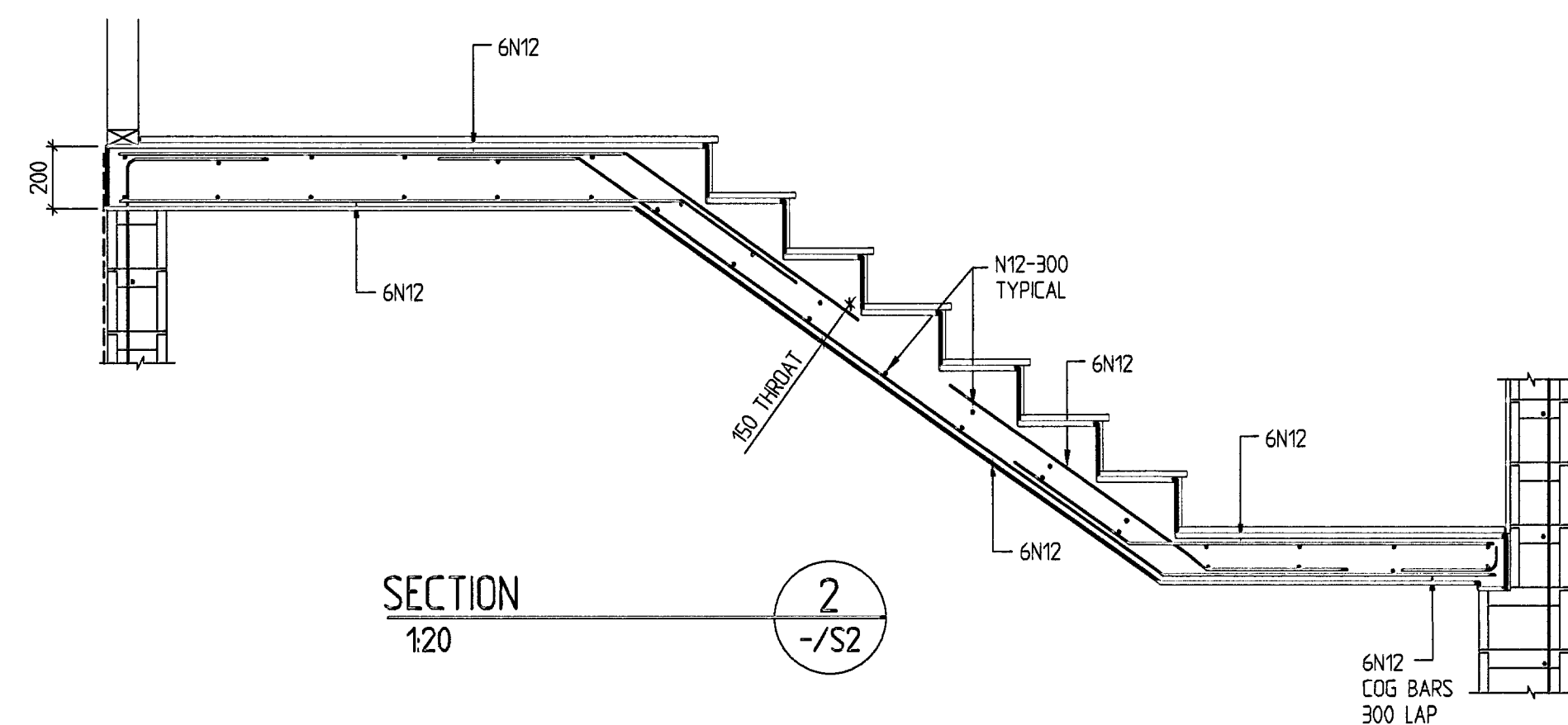
GB2 ELEVATION - 600 DEEP x 190 WIDE
120

ABBREVIATIONS AJ ARTICULATION JOINT BTM BOTTOM C/JF COMPRESSION JOINT FILLER CDS CHECK ON SITE CTS CEMENTS EF EACH FACE EW EACH WAY FFL FINISHED FLOOR LEVEL FSW FULL STRENGTH BUTT WELD	HW HARDWOOD HDG HOT DIP GALVANISED NGL NATURAL GROUND LEVEL NSOP NOT SHOWN ON PLAN % OUT OF SS STAINLESS STEEL TYP TYPICAL UNO UNLESS NOTED OTHERWISE US UNDERSIDE		Issue: A	Date: 04.09.2006	Description: FOR CONSTRUCTION CERTIFICATE	RANDALL JONES & ASSOCIATES PTY. LTD. Consulting Engineers 27 Mansfield Street Glebe NSW 2037 Tel. (02) 9660 4000 Fax. (02) 9660 4072	Scale: 150, 120 Date: 04.09.2006 Drawn: SD Checked: [Signature] BSC/ [Signature]	Project: PROPOSED NEW RESIDENCE 162 NARRABEEN PARK PARADE, WARRIEWOOD	Title: GROUND FLOOR SLAB BOTTOM REINFORCEMENT LAYOUT	Project No: G037 Drawing No: S2-A
--	--	--	--------------------	----------------------------	---	--	--	--	---	--



TOP REINFORCEMENT

GROUND FLOOR SLAB LAYOUT
150



SECTION
120

2
-1/S2

ABBREVIATIONS	
AJ	ARTICULATION JOINT
BTM	BOTTOM
C.J.	COMPRESSIBLE JOINT FILLER
COG	CHECK ON SITE
CTS	CENTRES
EF	EACH FACE
EW	EACH WAY
FFL	FINISHED FLOOR LEVEL
FSBW	FULL STRENGTH BUTT WELD
HW	HARDWOOD
HG	HOT DIP GALVANISED
NGL	NATURAL GROUND LEVEL
NSCP	NOT SHOWN ON PLAN
O/P	OUT OF
SS	STAINLESS STEEL
TYP	TYPICAL
UND	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE

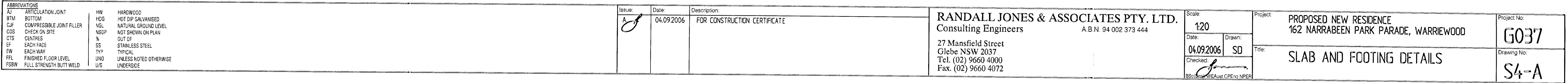
Issue: Date: 04.09.2006 Description: FOR CONSTRUCTION CERTIFICATE

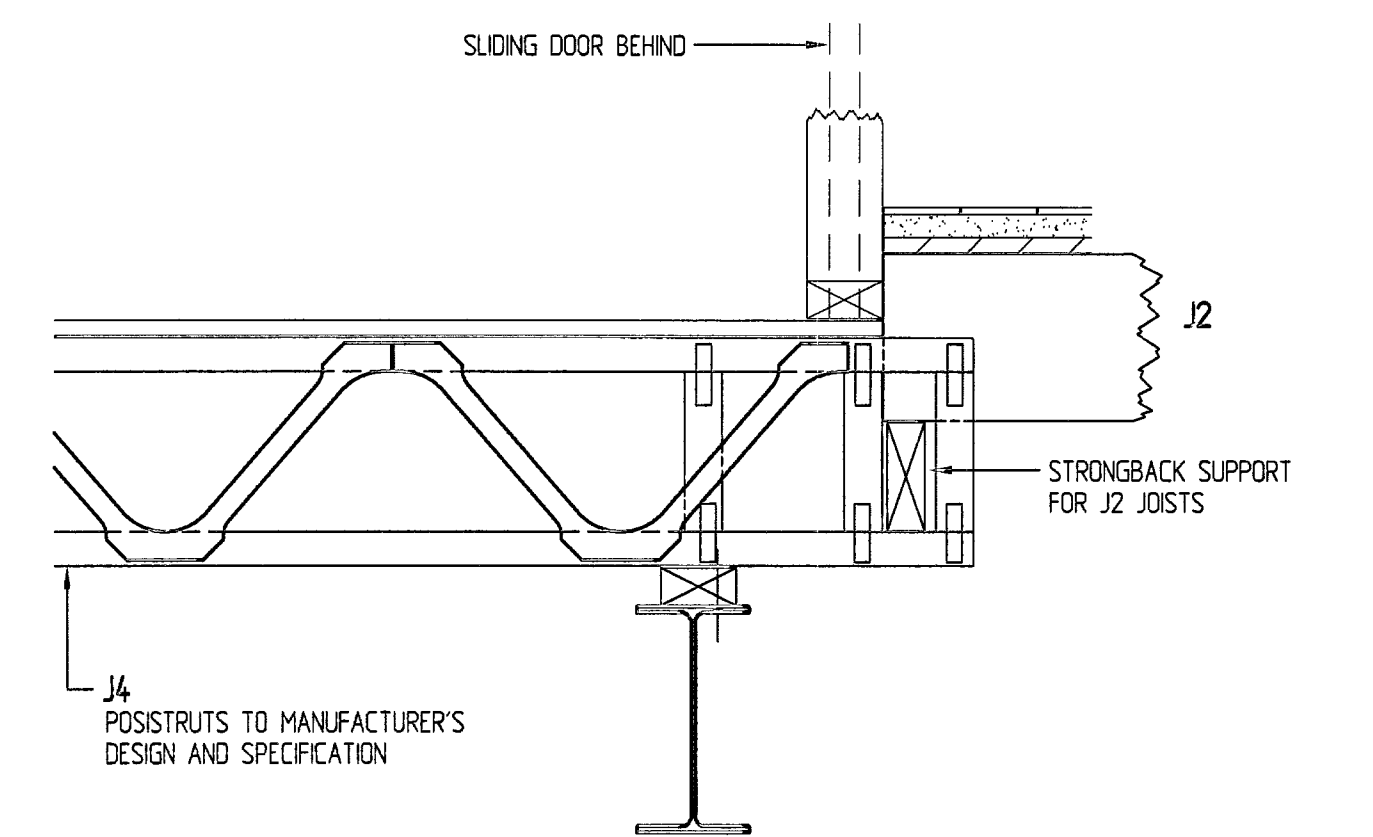
RANDALL JONES & ASSOCIATES PTY. LTD.
Consulting Engineers
27 Mansfield Street
Glebe NSW 2037
Tel. (02) 9660 4000
Fax. (02) 9660 4072
A.B.N. 94 002 373 444

Scale: 150, 120
Date: 04.09.2006 Drawn: SD
Checked: BSC: MEAust CPE no NPFR

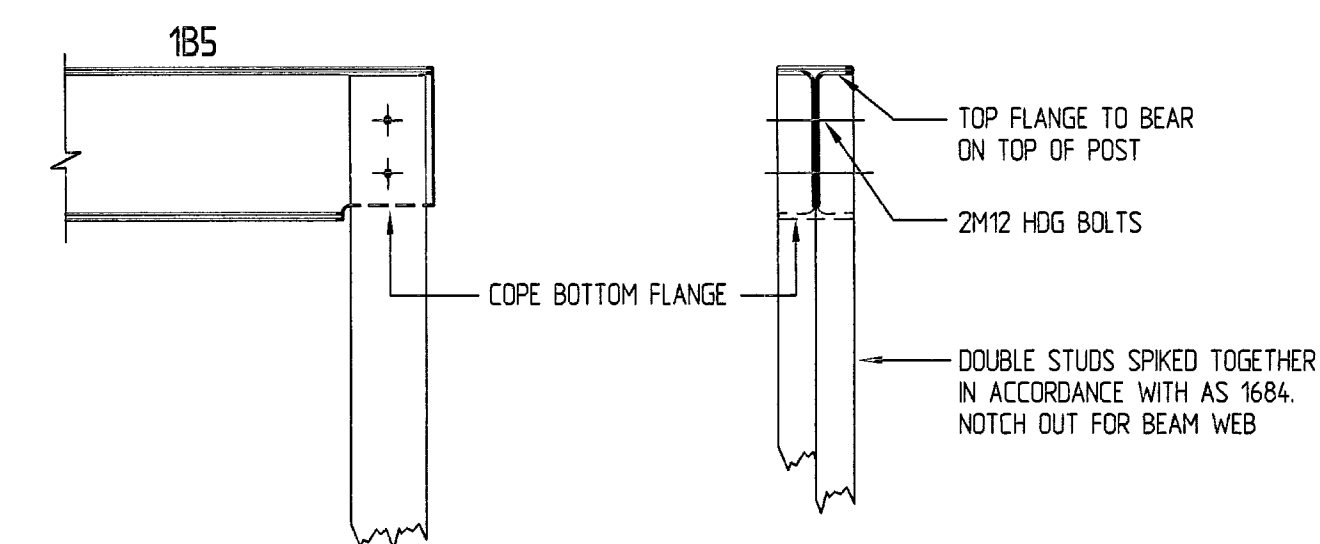
Project: PROPOSED NEW RESIDENCE
162 NARRABEEN PARK PARADE, WARRIEWOOD
Title: GROUND FLOOR SLAB
TOP REINFORCEMENT LAYOUT

Project No: G037
Drawing No: S3-A





SECTION 1
1:10 -

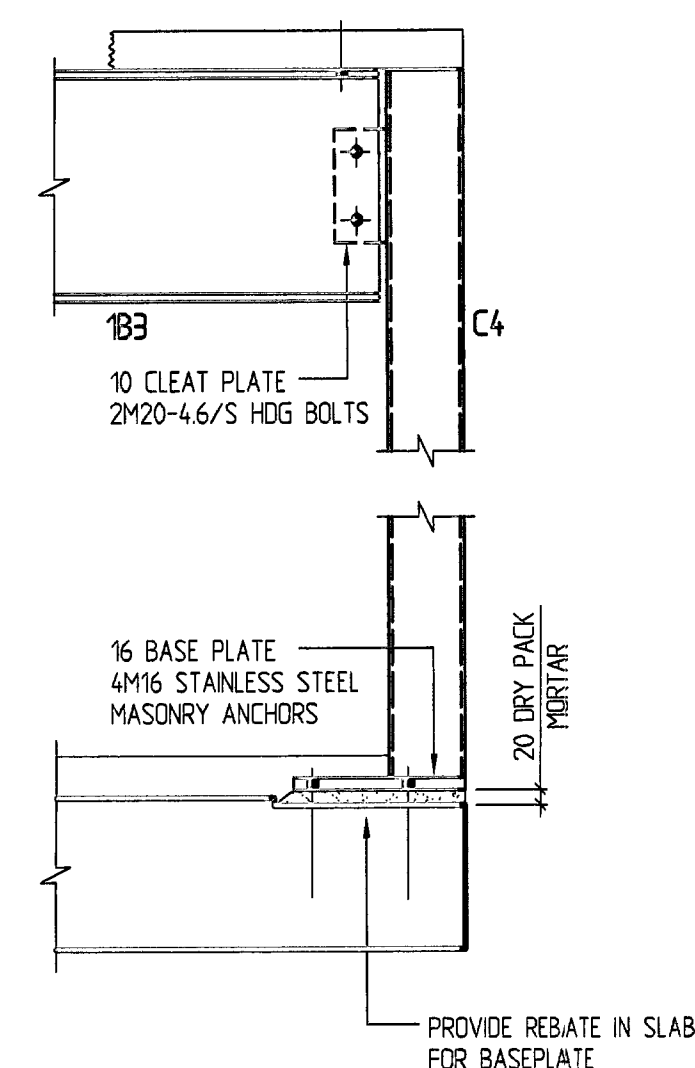


1B5 TO DS CONNECTION
1:10

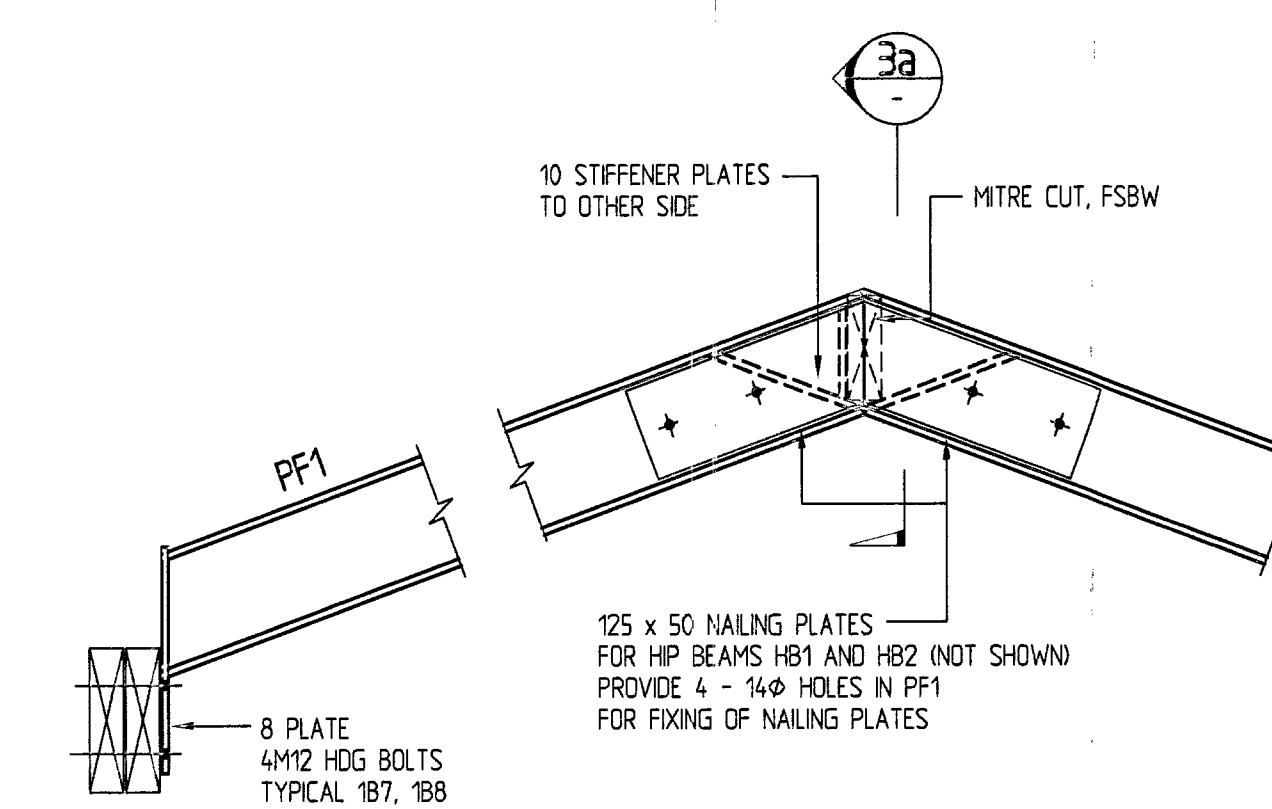
1:50

C1-C5	100 x 100 x 5.0 SHS	
1B1	310UB32	
1B2	130 x 63 (F16) HYPSPAN LVL	
1B3	310UB40	
1B4	200UB22	
1B5	200UB18	
1B6	300 x 45 (F16) HYPSPAN LVL	
1B7, 1B8	2/190 x 45 (F27) SEASONED HARDWOOD SPIKED TOGETHER IN ACCORDANCE WITH AS 1684	
1J1, 1J3	300 DEEP POSISTRUTS TO MANUFACTURER'S SPECIFICATION	
1J2	220 x 45 (F27) SEASONED HARDWOOD AT 600 CTS	
1J4-1J8	300 DEEP POSISTRUTS TO MANUFACTURER'S SPECIFICATION	
DJ, DS	DOUBLE JOISTS, DOUBLE STUDS	
PF1	PORTAL FRAME % 150UB18	
RB1	140 x 45 (F27) SEASONED HARDWOOD	
HB1, HB2	140 x 45 (F27) SEASONED HARDWOOD	
R1	90 x 45 (F27) SEASONED HARDWOOD AT 600 CTS	
VB1-VB3	220 x 45 (F27) SEASONED HARDWOOD	
P1, P2	90 x 90 DURABILITY CLASS 2 HARDWOOD POSTS ON PRYDA STANDOFF PST BASES ABU44 INSTALLED TO MANUFACTURER'S SPECIFICATION	
HBB	HARDBOARD PANEL BRACING - REFER TO DETAIL ON DWG S6	
PTB	PT BRACE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION	
CB(T)	30 x 0.8 TENSIONED GALV STRAP WALL CROSS BRACING REFER TO DETAIL ON DWG S6	
RCB	30 x 0.8 TENSIONED GALV STRAP ROOF CROSS BRACING	
T	TENSIONER	

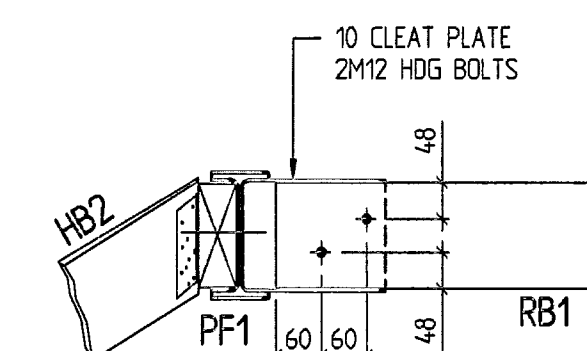
PROVIDE HOLES IN STEELWORK WEBS AND FLANGES FOR FIXING TIMBER PLATES FOR JOIST SUPPORT



SECTION _____ 2'
1:10
C1-C3, C5 SIMILAR



SECTION 1.10 3



SECTION 1.10 3a

ABBREVIATIONS			
AJ	ARTICULATION JOINT	HW	HARDWOOD
BTM	BOTTOM	HG	HOT DIP GALVANISED
CJF	COMPRESSIBLE JOINT FILLER	MSL	NATURAL GRASS
CDS	CHECK ON SITE	NSOP	NOT SHOWN ON PLAN
CTS	CENTRES	NU	OUT OF GROUND
EAF	EACH FACE	SS	STAINLESS STEEL
EW	EACH WAY	TP	TYPICAL
FFL	FILL FLOOR LEVEL	UNO	UNLESS NOTED OTHERWISE
FSBW	FIL. STRENGTH BUTT WELD	US	UPSIDE

HW	HARDWOOD
HDG	HOT DIP GALVANISED
MGL	NATURAL GROUND LEVEL
NSOP	NOT SHOWN ON PLAN
%	OUT OF
SS	STAINLESS STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
US	UNDERSIDE

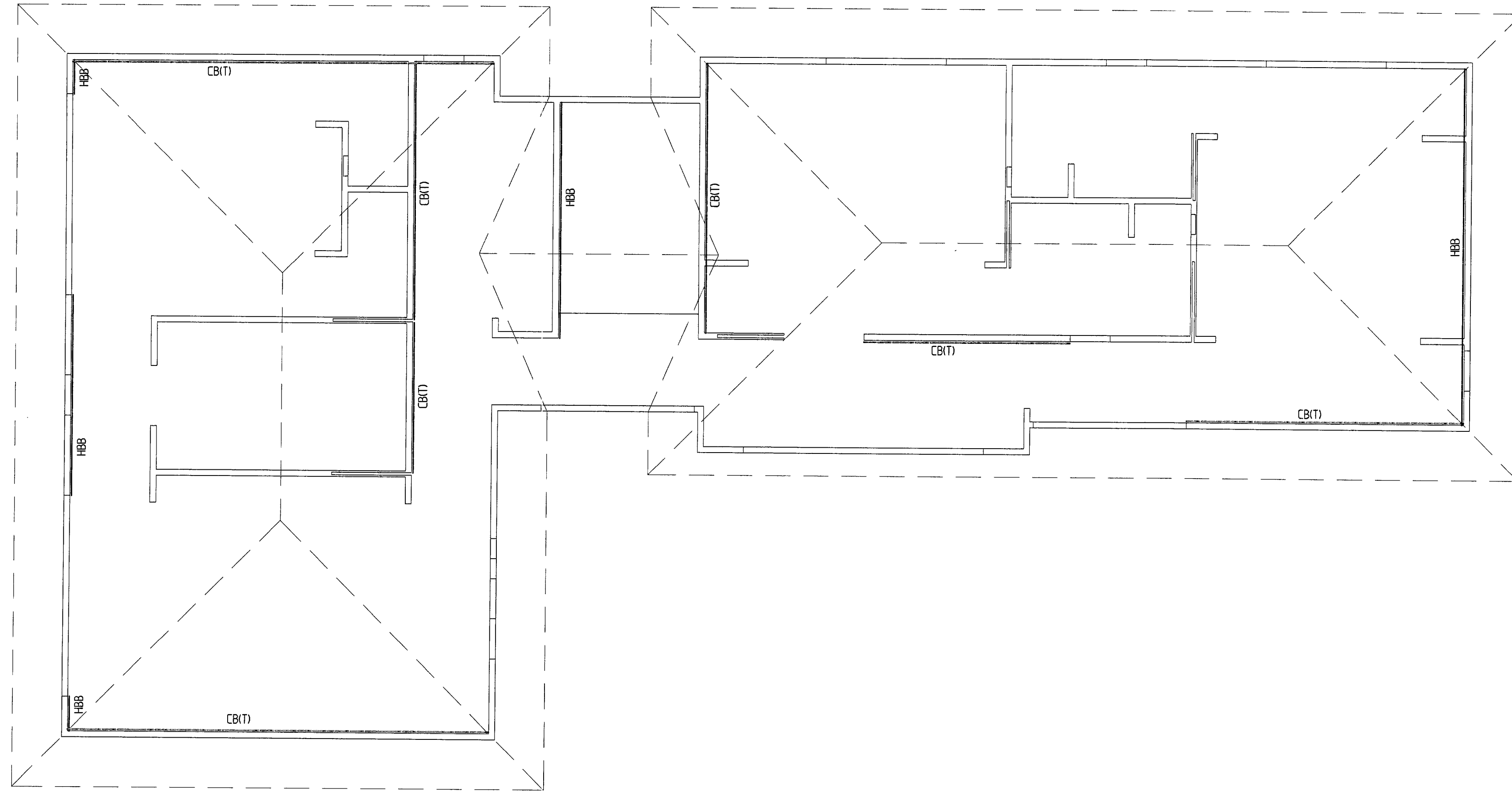
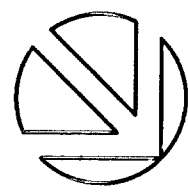
Issue:	Date:	Description:
A 	04.09.2006	FOR CONSTRUCTION CERTIFICATE

RANDALL JONES & ASSOCIATES PTY. LTD.
Consulting Engineers
A.B.N. 94 002 373 444
27 Mansfield Street
Glebe NSW 2037
Tel. (02) 9660 4000
Fax. (02) 9660 4072

Scale: 1:50, 1:10	
Date: 04.09.2006	Drawn: SD
Checked: 	

Project:	PROPOSED NEW RESIDENCE 162 NARRABEEN PARK PARADE, WARRIEWOOD
Title:	FIRST FLOOR STRUCTURAL AND GND FLOOR WALL BRACING LAYOUT

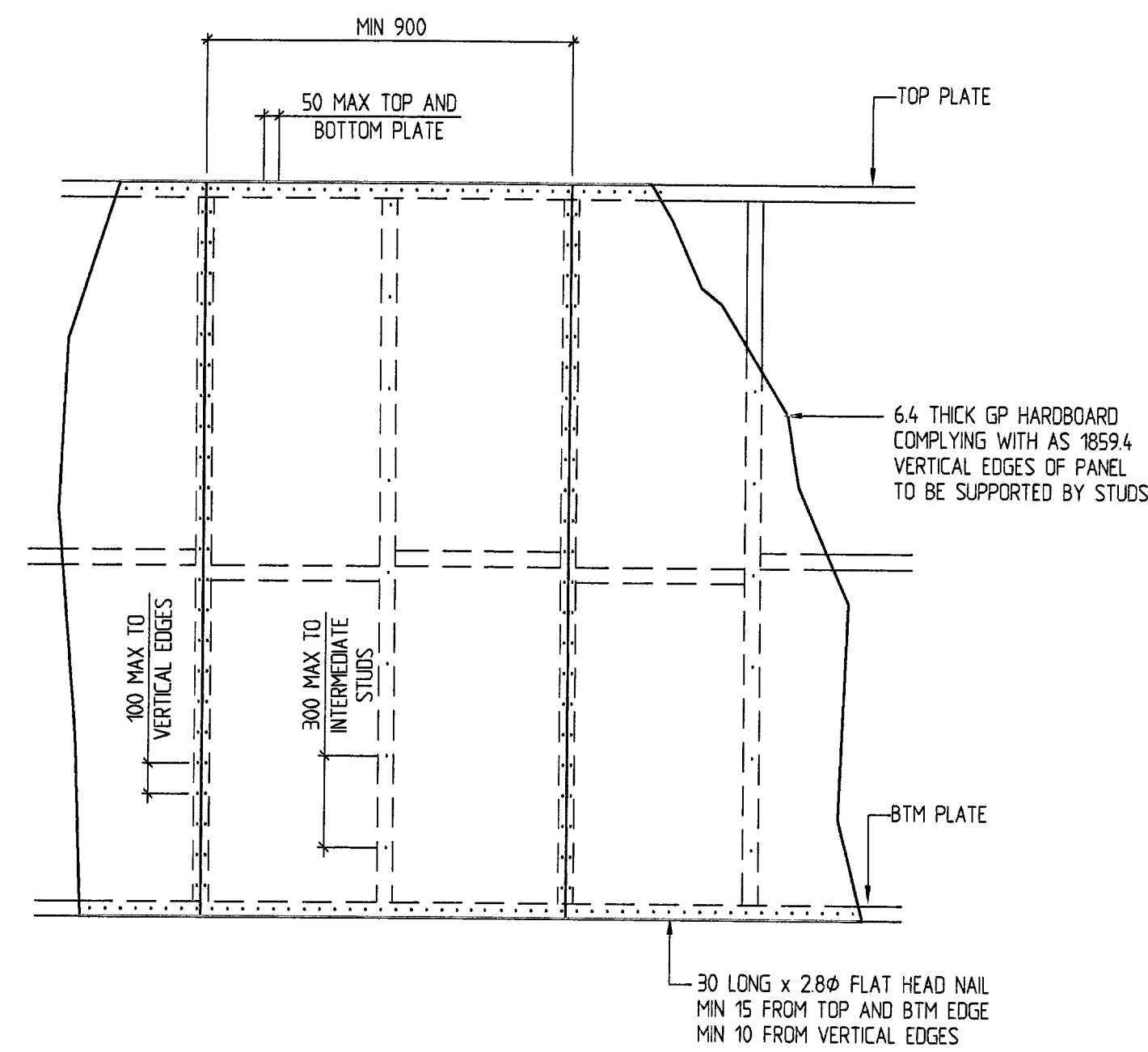
Project No:	G037
Drawing No:	S5-A



FIRST FLOOR WALL BRACING LAYOUT
150

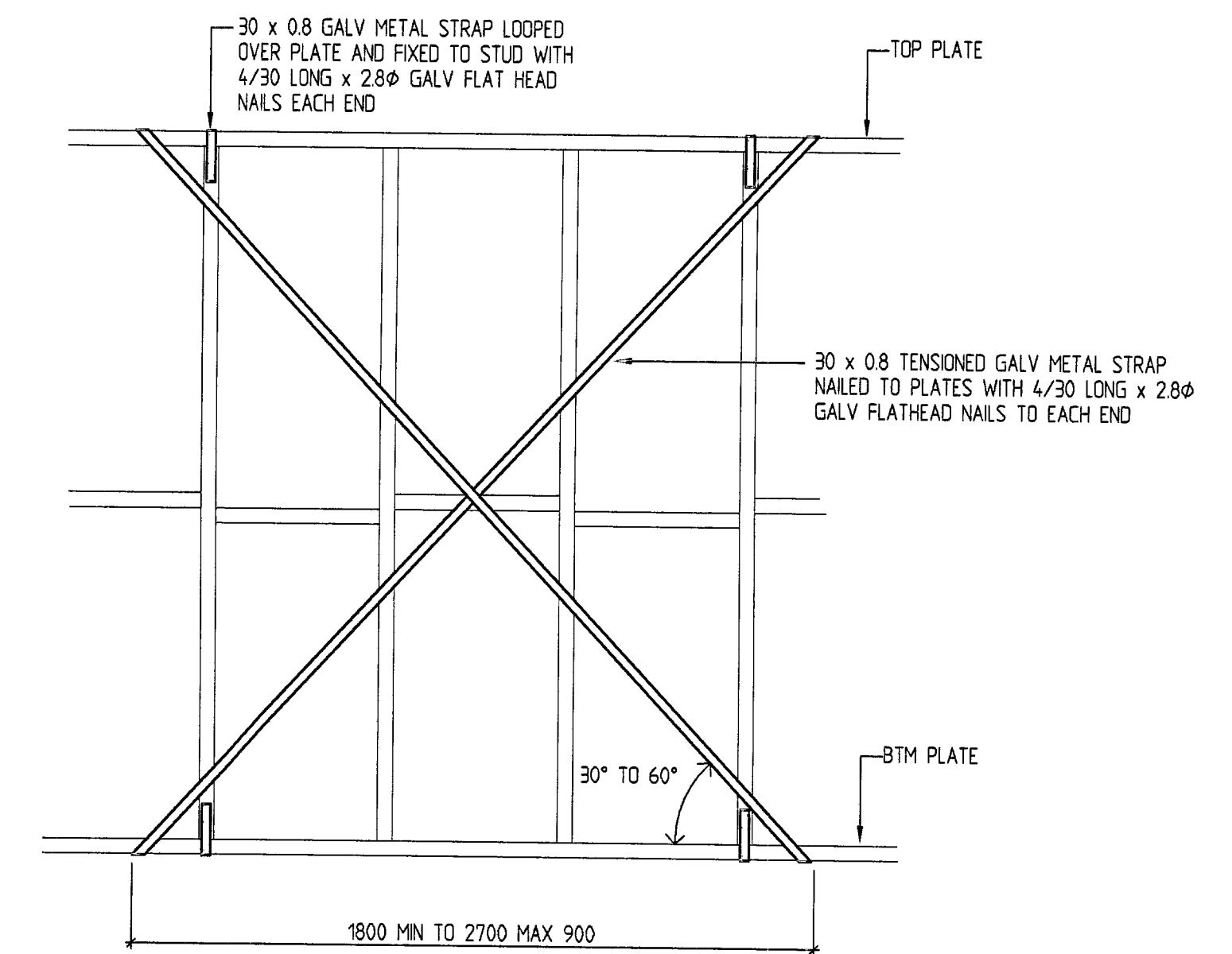
MEMBER SCHEDULE

HBB	HARDBOARD PANEL BRACING
CB(T)	30 x 0.8 GALV METAL STRAP CROSS BRACING (TENSIONED)



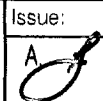
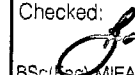
HBB - HARDBOARD PANEL BRACING
120

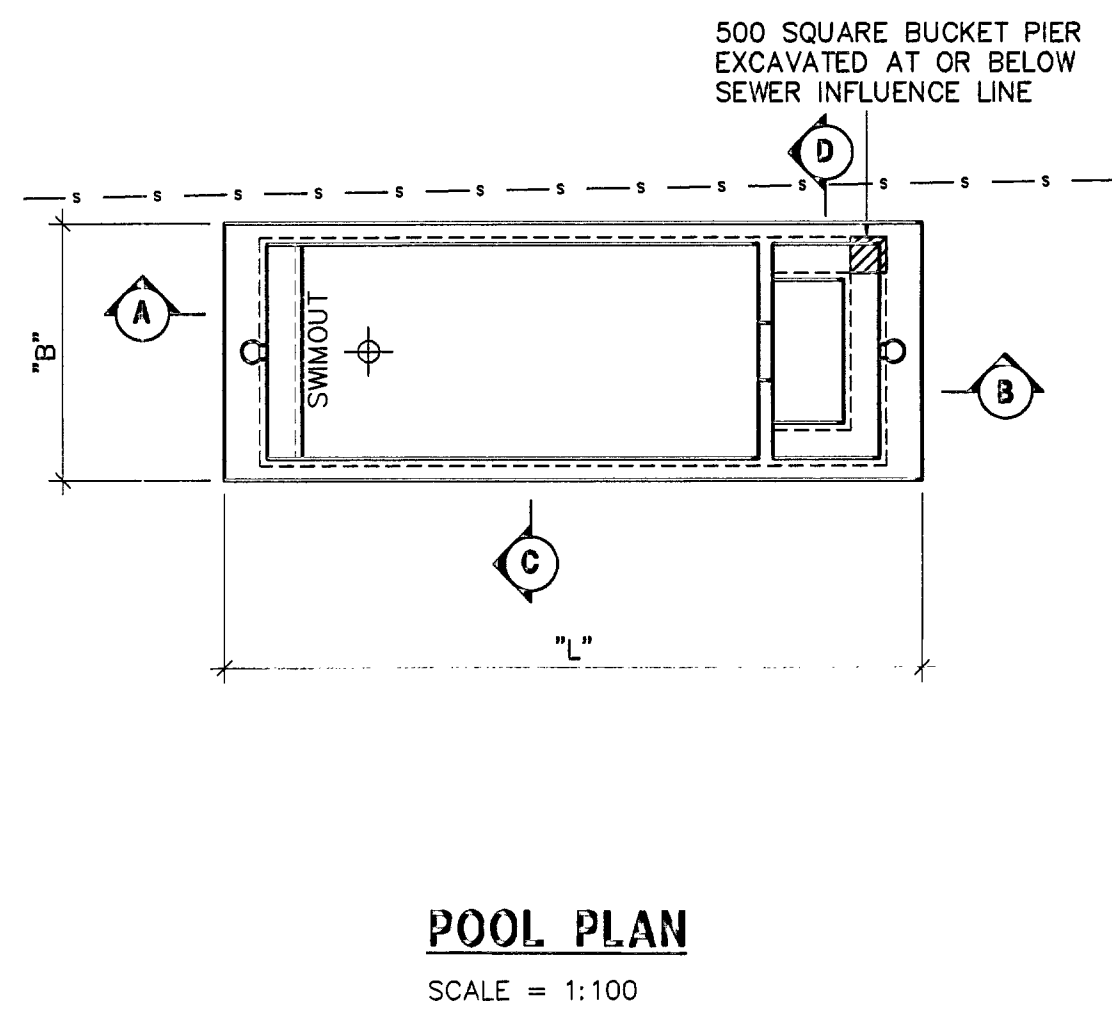
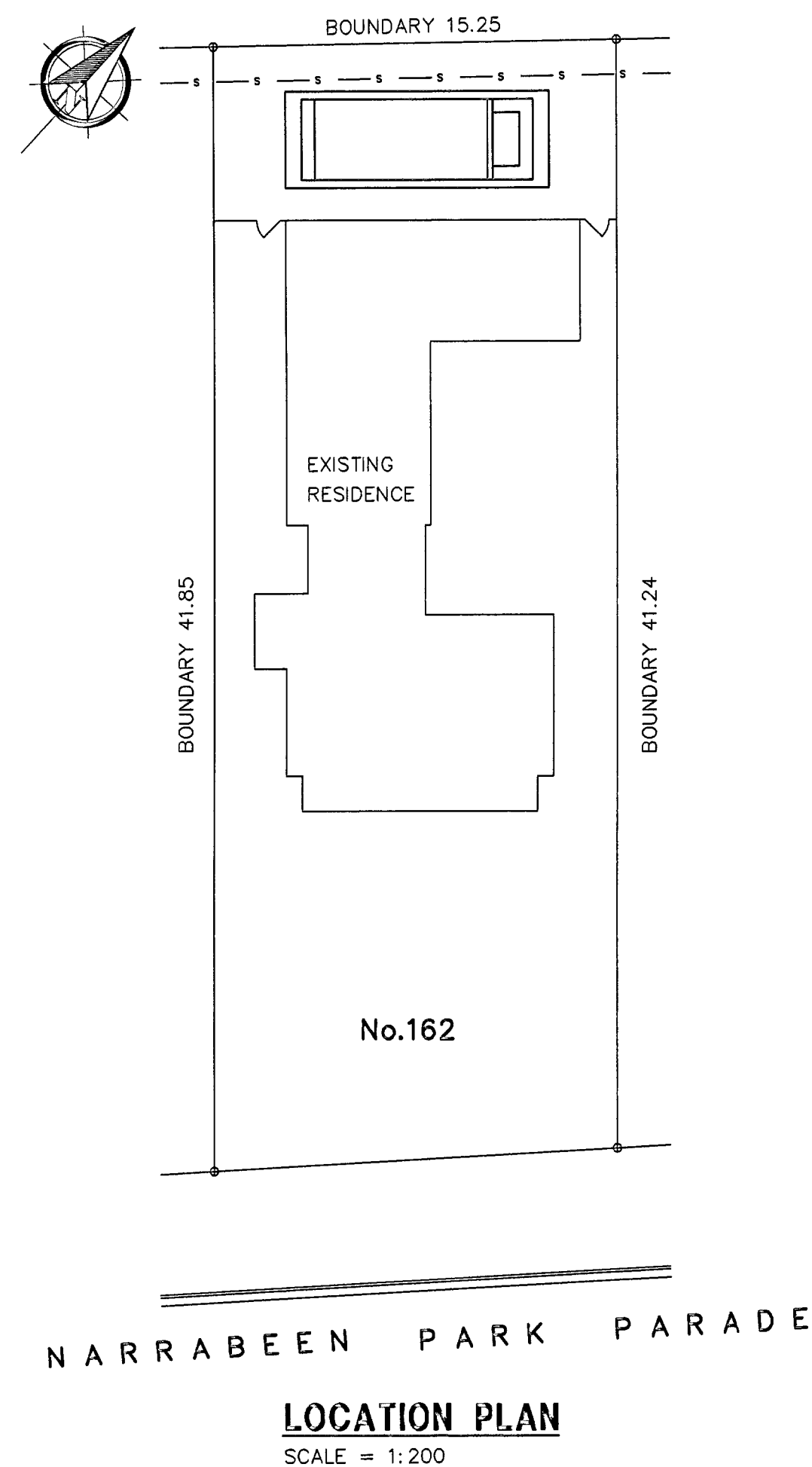
BRACED WALL PANELS TO BE SECURELY
STRAPPED OR BOLTED TO FLOORS AND ROOF
IN ACCORDANCE WITH AS 1684



CB(T) - TENSIONED GALV STRAP CROSS BRACING
120

BRACED WALL PANELS TO BE SECURELY
STRAPPED OR BOLTED TO FLOORS AND ROOF
IN ACCORDANCE WITH AS 1684

ABBREVIATIONS AJ ARTICULATION JOINT BTM BOTTOM C/JF COMPRESSIBLE JOINT FILLER COS CHECK ON SITE CTS CENTRES EF EACH FACE EW EACH WAY FF FINISHED FLOOR LEVEL FSBW FULL STRENGTH BUTT WELD HW HARDWOOD HDS HOT DIP GALVANISED NGL NATURAL GROUND LEVEL NSOP NOT SHOWN ON PLAN OUT/OP OUT/UP SS STAINLESS STEEL TYP TYPICAL UNO UNLESS NOTED OTHERWISE US UNDERSIDE			Issue: 	Date: 04.09.2006	Description: FOR CONSTRUCTION CERTIFICATE	RANDALL JONES & ASSOCIATES PTY. LTD. Consulting Engineers 27 Mansfield Street Glebe NSW 2037 Tel. (02) 9660 4000 Fax. (02) 9660 4072 A.B.N. 94 002 373 444	Scale: 150, 120 Date: 04.09.2006 Checked:  SD BSC: S. JONES, M. JONES, M. JONES, M. JONES	Project: PROPOSED NEW RESIDENCE 162 NARRABEEN PARK PARADE, WARRIEWOOD Title: FIRST FLOOR WALL BRACING LAYOUT	Project No: G037 Drawing No: S6-A
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NOTE : THIS POOL IS NOT DESIGNED FOR DIVING

CONCRETE NOTES:

1. CONCRETE TO HAVE A CHARACTERISTIC COMPRESSIVE STRENGTH OF 25MPa AT 28 DAYS AND TO BE PNEUMATICALLY APPLIED BY A SKILLED OPERATOR. WHERE POOL IS LOCATED <1km FROM COASTLINE OR IS SUBJECT TO SALT ATTACK, CONCRETE DESIGN STRENGTH F_c SHALL BE 40MPa AT 28 DAYS. EXCLUDE CALCIUM CHLORIDE. MAX. AGGREGATE SIZE 10MM. MAX. SLUMP 80MM. CEMENT TYPE A.
2. SUPPORTING SOIL UNDER POOL TO BE FIRM, UNIFORM, STABLE, NATURAL GROUND WITH A SAFE BEARING CAPACITY OF AT LEAST 150kPa.
3. CONCRETE IN WALLS BELOW GROUND TO BE APPLIED DIRECTLY AGAINST FIRM NATURAL GROUND CAPABLE OF BEING EXCAVATED TO A VERTICAL FACE.
4. MINIMUM CONCRETE COVER TO REINFORCEMENT FROM CLOSEST CONCRETE SURFACE TO BE AS FOLLOWS:
WATER FACE SALT CHLORINATION: 70MM
WATER FACE STANDARD CHLORINATION: 50MM
COPING/WALKWAY: 50MM
REAR FACE FORMED: 40MM
ROUGH GROUND: 70MM

STEEL FIXER NOTES

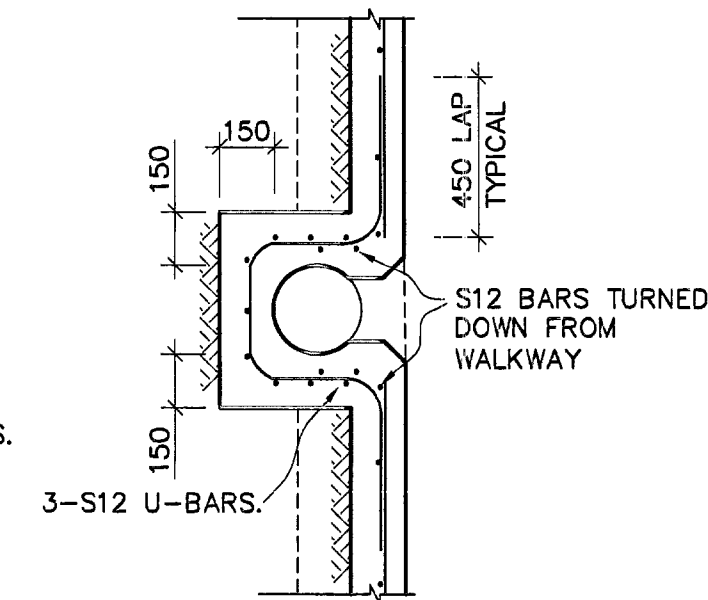
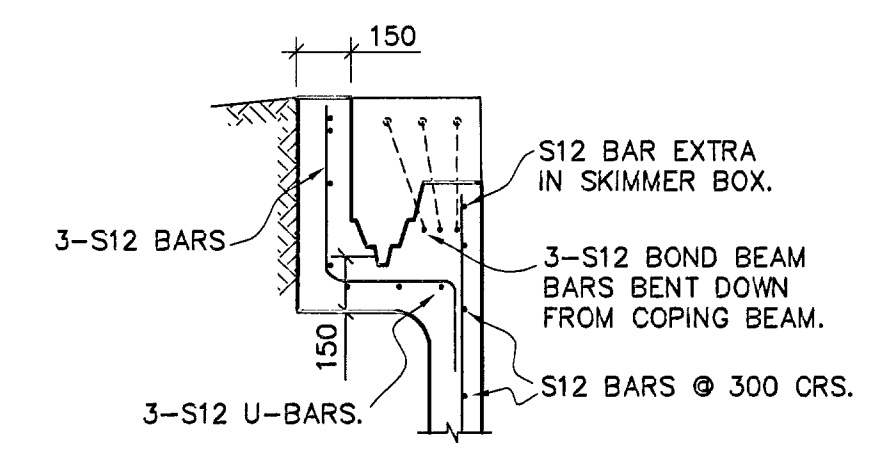
1. REINFORCEMENT S12 TO BE 12MM DIAMETER GRADE 230 DEFORMED BAR IN ACCORDANCE WITH A.S.1302. Y12 DEFORMED BAR MAY BE SUBSTITUTED FOR S12 BARS SPECIFIED.
2. REINFORCEMENT TO BE ACCURATELY MAINTAINED IN POSITION BY MEANS OF PLASTIC TIPPED BAR CHAIRS PLACED AT 300MM CENTERS IN BOTH DIRECTIONS. PLASTIC CHAIRS RESTRICT ENTRY OF CONCRETE INTO AND AROUND THEM AND SHALL NOT BE USED. REINFORCEMENT TO BE ADEQUATELY WIRE TIED WITH WIRE ENDS FLATTENED INTO PLANE OF BARS. S12 BARS TO BE LAPPED 450MM AT SPLICES, SPLICES TO BE STAGGERED.
4. REINFORCEMENT NOT SPECIFICALLY NOTED TO BE S12 @ 300MM CENTERS.
5. ADVISE ENGINEER IF EXCAVATION IN FILL OR GROUND WATER IS ENCOUNTERED.

POOL BUILDER GENERAL NOTES:

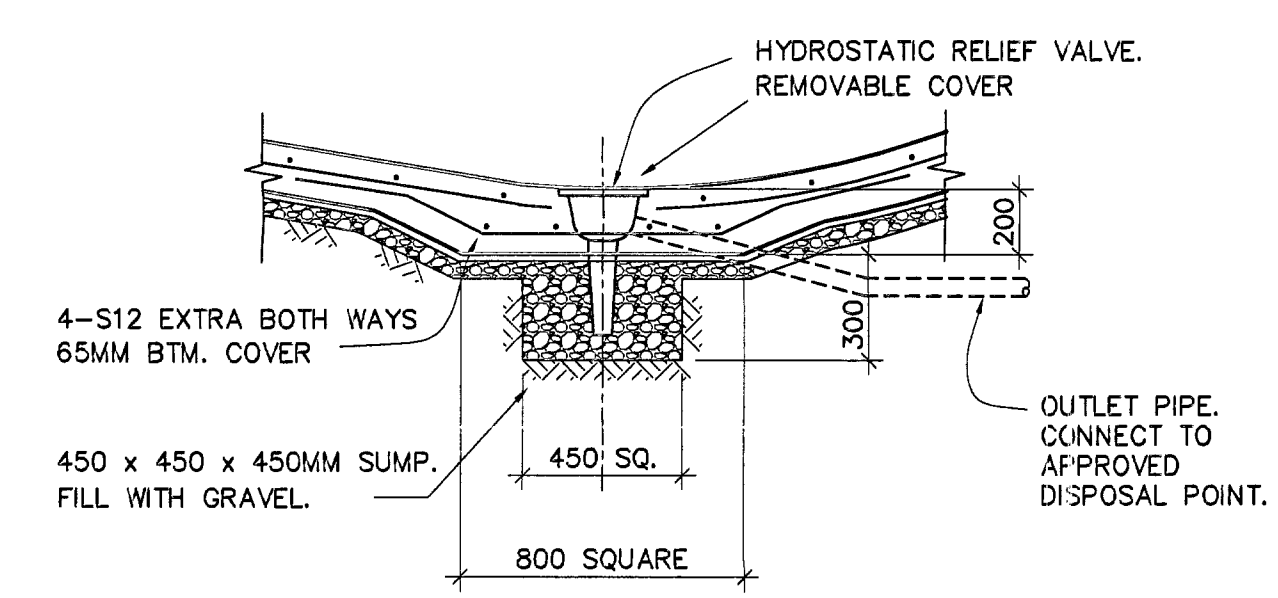
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL/LANDSCAPE DRAWING AND SPECIFICATION
2. POOL SET OUT DIMENSIONS BY OTHERS
3. THIS DESIGN APPLIES ONLY FOR GROUND LEVELS AS SHOWN.
4. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH RELEVANT CURRENT SAA CODES, BY-LAWS AND ORDINANCES OF THE LOCAL BUILDING AUTHORITY.
5. THE OVERALL DIMENSIONS SHALL BE CHECKED ON SITE. DIMENSIONS SHOWN ON SECTIONS ARE CONCRETE SIZES AND DO NOT INCLUDE FINISHES.
6. THE FOUNDATION MATERIAL MUST BE STABLE, IN UNIFORM NATURAL GROUND HAVING A MINIMUM SAFE BEARING CAPACITY OF AT LEAST 150 kPa.
7. PROVIDE TEMPORARY DRAIN HOLES IN BOTH SHALLOW AND DEEP ENDS OF POOL SHELL. HYDROSTATIC RELIEF VALVE TO BE CLEANED OF DEBRIS ON COMPLETION OF CONCRETING
8. UNDERSIDE OF POOL SHELL TO BE SEPERATED FROM UNDERLYING MATERIAL BY 75MM LAYER OF CRUSHED STONE /GRAVEL. PROVIDE MEMBRANE BETWEEN SHELL AND CRUSHED STONE/GRAVEL. CORUGATED IRON ALTERNATIVE ON ROCK ONLY. FILL MAIN DRAIN SUMP WITH CRUSHED ROCK/GRAVEL.
9. WALKWAYS HAVE BEEN DESIGNED FOR A DISTRIBUTED LOAD OF 4kPa AND A LIVE LOAD OF 30KG/M. ENGINEERS APPROVAL REQUIRED FOR ADDITIONAL LOADS.
10. ADVISE ENGINEER IF EXCAVATION IS IN FILL OR GROUND WATER IS ENCOUNTERED.
11. UNDERGROUND SERVICES NOT KNOWN. DIAL 1100 BEFORE YOU DIG

POOL OWNER NOTES:

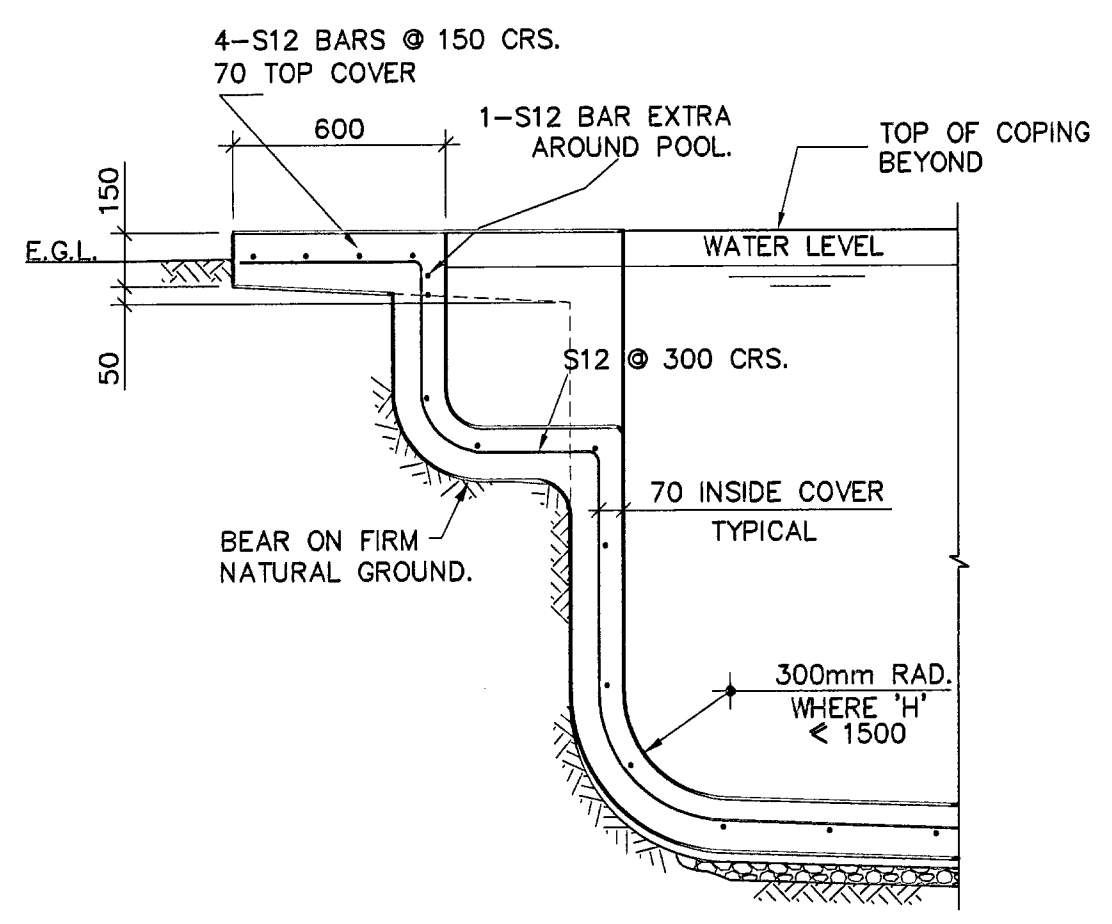
1. POOL SET OUT SIZE, LOCATION AND HEIGHT LEVEL IS DEEMED TO BE ACCEPTABLE TO THE OWNER UNLESS THE BUILDER IS ADVISED OTHERWISE. SUCH ADVICE MUST BE PRIOR TO PLACEMENT OF REINFORCEMENT.
2. THE POSITION OF SKIMMERS, LIGHTS, RETURN LINES ETC. ON THIS DRAWING IS INDICATIVE ONLY AND FINAL POSITION TO BE DETERMINED ON SITE.
3. SAFETY FENCING SHOULD BE IN ACCORDANCE WITH LOCAL COUNCILS REQUIREMENTS AND CONFORM TO AUSTRALIAN STANDARDS.
4. UNDERWATER LIGHTS MUST BE FULLY SUBMERGED DURING USE.
5. POOL IS NOT DESIGNED FOR DIVING
6. CONCRETE SHOULD BE MOIST CURED BY HOSEING 4 TIMES PER DAY FOR 7 DAYS AFTER CONCRETE PLACEMENT - 10 DAYS IN SUMMER.
7. FOR LEVELS RELATIVE TO CONCRETE COPING LEVEL, REFER TO ARCHITECTURAL LANDSCAPE DRAWING FIXED DATUM REPRESENTS THE FIXED COPING HEIGHT/LEVEL.
8. IF IN DOUBT, PLEASE ASK.



**SECTIONAL ELEVATION
DETAILS AT SKIMMER UNIT**

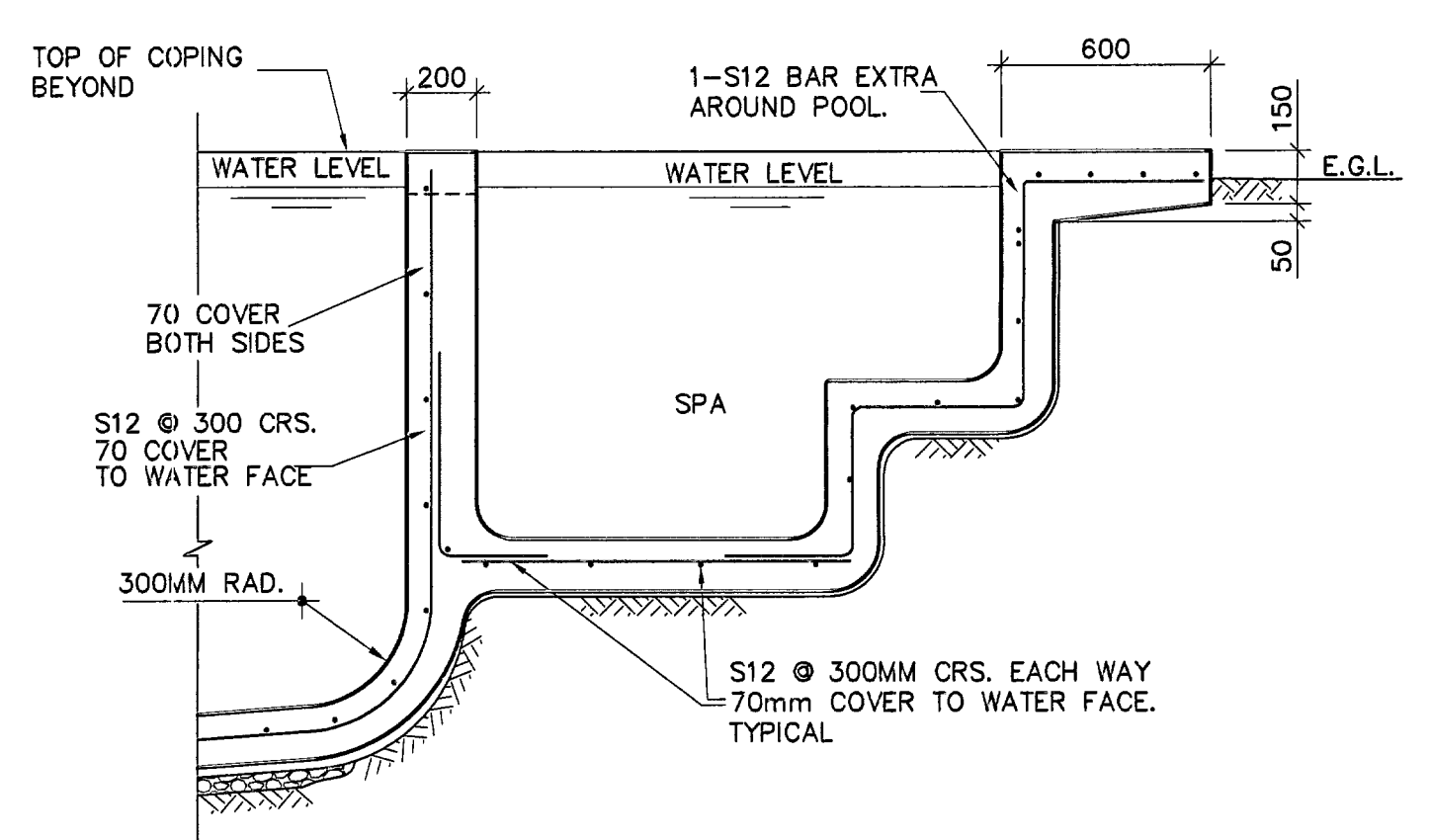


DETAIL- POOL RELIEF VALVE

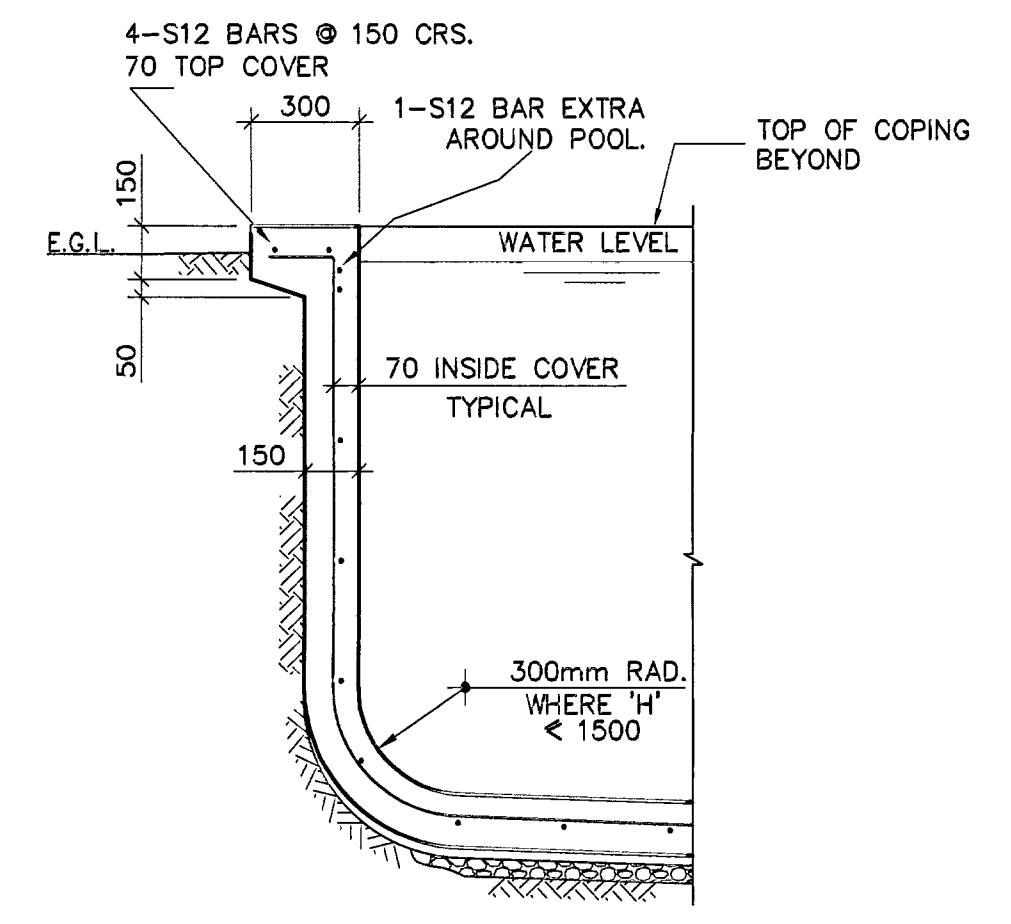


DETAILS AT SWIMOUT

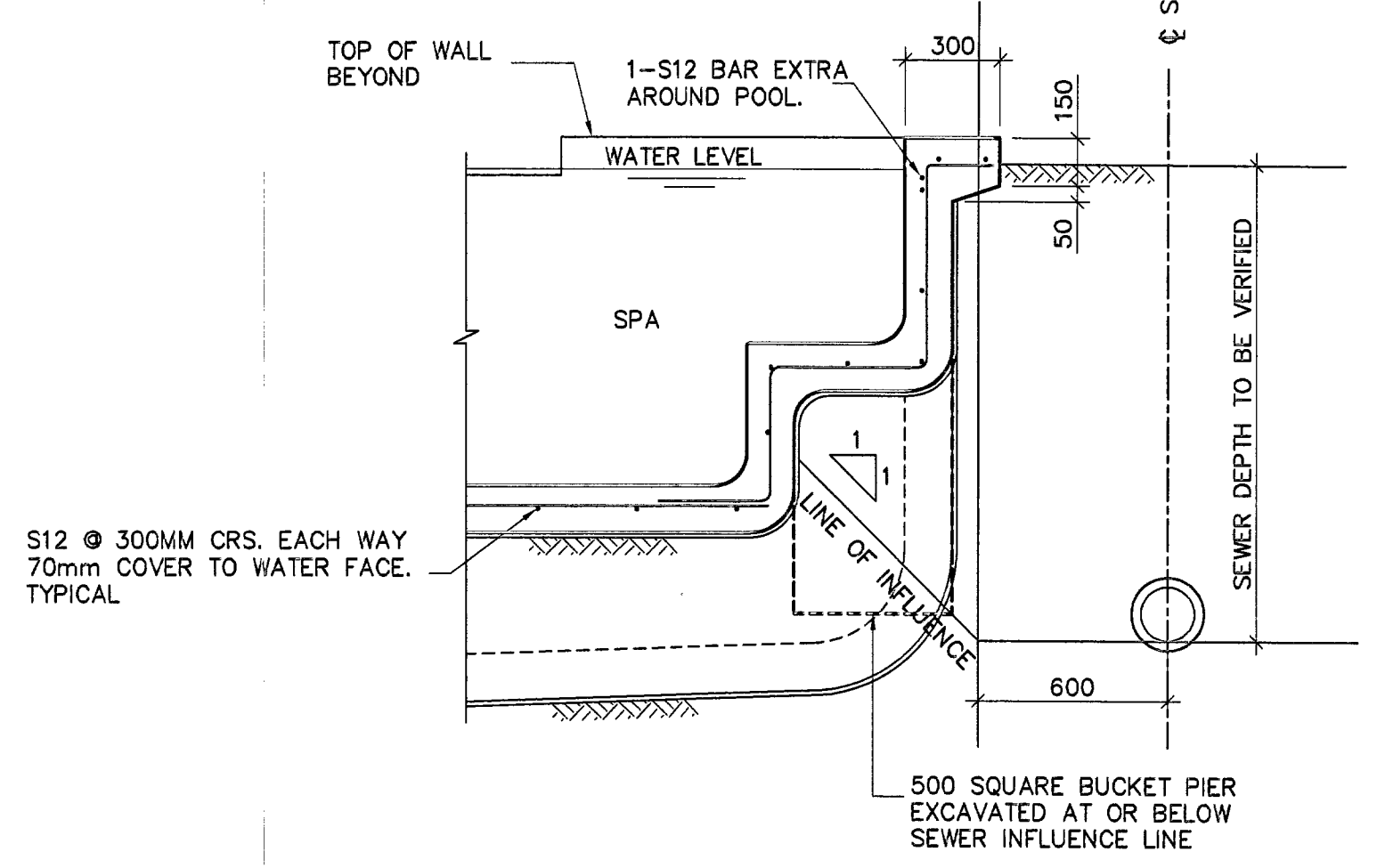
DETAIL A



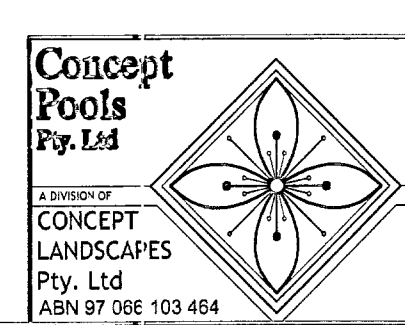
DETAIL B



DETAIL C



DETAIL D



ISSUE	DATE	APPD	DESCRIPTION	REVISIONS
A	24-8-06		SWIMOUT EXTENDED	

KNEEBONE & BERETTA CONSULTING PTY LTD
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SCALE	1:200, 1:100, 1:20
DATE	22-6-2006
DRAWN	D.S.
CHECKED	J.M.H.
APPROVED	

PROPOSED SWIMMING POOL
AT 162 NARRABEEN PARK PDE, MONA VALE
FOR MR & MRS SHANAHAN
STRUCTURAL DETAILS

DRAWING NUMBER	58897-1
ISSUE	A

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CONSTRUCTION CERTIFICATE

CONSTRUCTION CERTIFICATE

CLIENT: _____

SITE ALTERNATIVES PTY LTD

ARCHITECTS:

SITE ALTERNATIVES PTY LTD

HYDRAULIC CONSULTANT:



PROJECT:

RESIDENTIAL DEVELOPMENT
162 NARRABEEN PARK PDE
WARRIEWOOD NSW

SHEET TITLE:

STORMWATER DRAINAGE

SCALE:	PROJECT No:	DRAWN:	CHECKED:
1:100	206-461	JA	MG
DRAWING NO:	REV:	DATE:	SHEET:
H-02	A	AUG.06	2/2