Anthony Protas Consulting Pty Ltd
BUILDING REGULATIONS CONSULTANTS

28 May 2009

Our Ref 092761

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

Dear Sir,

Re 42 Sunrise Road, Palm Beach
Construction Certificate

Pursuant to the requirements of the Environmental Planning and Assessment Act please find attached a copy of our Construction Certificate, plans and specifications to which the Construction Certificate has been issued and other relevant documents

Should you have any questions, please do not hesitate to contact the undersigned

Yours faithfully

Anthony Protas
Anthony Protas Consulting Pty Ltd

PEC 260323
1/6/09

Locked Bag 1001 Wareemba NSW 2046 Suite 1 104 William Street Five Dock NSW 2046 Ph 02 9715 5333 Fax 02 9715 5666
Email mail@protas net au Web www protas net au ABN 37 079 830 756

Anthony Protas Consulting Pty Ltd
BUILDING REGULATIONS CONSULTANTS

COPY

Construction Certificate – 42 Sunrise Road, Palm Beach

Construction of a new dwelling, swimming pool and associated landscaping

BCA Class 1a & 10b

1 Details of the applicant

Mr ☐ Ms ☐ Mrs ☐ Dr ☐ Other Susan Rothwell Architects Pty Ltd

First name | Family name

Flat/street no: 38 | Street name: Serpentine Road

Suburb or town: Greenwich | State: NSW | Postcode: 2065

Daytime telephone | Fax | Mobile: 0411 745 051

Email: will@rothwellarchitects com au

2 Details of the development consent

Development application no: 528/07 | Date the consent was issued: 19 May, 2008

3 Decision of the certifying authority

This certificate is issued

☒ without any conditions

☐ subject to conditions of the kind referred to in clauses 187 or 188 of the Environmental Planning and Assessment Regulation 2000

Conditions have been placed on the certificate for the following reasons

☒ the issue of this certificate has been endorsed on the plans and specifications that were lodged with the application

Plan no s approved

Architectural plan No's sr42-102, 103, 104, 107, 109 & 110, issue F, dated 05/09, sr42-108, issue E, dated 10/08 Specification, undated All above listed documentation prepared by Susan Rothwell Architects Pty Ltd

Date of this decision: 28 May 2009

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Email mail@protas net au Web www protas net au ABN 37 079 830 756

4 Information attached to this decision

- ☐ A fire safety schedule
- ☐ Schedule of approved plans & specifications

5 Certification

Anthony Protas certifies that

If the work is completed following the plans and specifications which have been approved it will comply with the requirements of the Environmental Planning and Assessment Regulation 2000 as referred to in section 81A(5) of the *Environmental Planning and Assessment Act 1979*

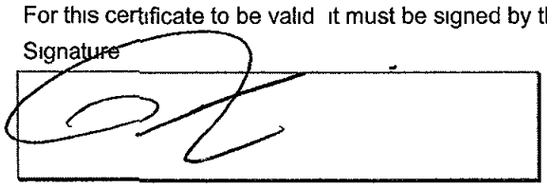
Construction certificate no: **2761/09**

Date of this certificate: **28 May 2009**

6 Signature

For this certificate to be valid it must be signed by the certifying authority

Signature



Name: Anthony Protas

Flat/Street no: Locked Bag 1001

Street name:

Suburb or town: Wareemba

State: NSW

Postcode: 2046

Telephone: 9715 5333

Fax: 9715 5666

If the certifier is an accredited certifier

Accreditation body of the certifier: Building Professionals Board

Accreditation no of the certifier: BPB0332

7 Applicant's right of appeal

If the certifying authority is a council a Minister or a public authority and the certifying authority has issued a construction certificate subject to conditions you can appeal against these conditions to the Land and Environment Court within 12 months from the date of the decision

Rec'd 15/5/09

Anthony Protas Consulting Pty Ltd
BUILDING REGULATIONS CONSULTANTS

COPY

Application for construction certificate

1 Details of the applicant

Mr ☐ Ms ☐ Mrs ☐ Dr ☐ Other ☒

First name

Family name: SUSAN ROTHWELL ARCHITECTS

Flat/street no: 38

Street name: SERPENTINE RD

Suburb or town: GREENWICH

State: NSW

Postcode: 2065

Daytime telephone

Fax

Mobile: 0411745051

Email: will@rothwell architects.com au

2 Identify the land

Flat/street no: 42

Street name: SUNRISE RD

Suburb or town: PALM BEACH

Postcode

Lot no: 152

Section

DP/MPS no: 6937

Volume/folio

You can find the lot no section DP/MPS no and volume/folio details on a map of the land or on the title documents for the land If you need additional room please attach a schedule and/or a map with these details

3 Estimated cost of the development

$ 3,100,000 including GST

4 Describe the development

What type of work do you propose to carry out?

Building work ☒

Subdivision work ☐

Describe the work

New house, swimming Pool & landscaping

For building work what is the class of the building under the Building Code of Australia?

This can be found on the development consent

Has development consent been granted for the development?

No ☐

Yes ☒ What is the development application no ?

528/07

What date was development consent granted?

19/5/08

5 Information to be attached to the application

You need to provide material with your application that is relevant to the type of work you propose to do Please indicate the material you have attached by placing a cross in the appropriate boxes ☐

1 If you are going to carry out **building work**

☐ a copy of any compliance certificates on which you rely

☒ detailed plans of the building (4 copies)

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

- show a plan of each floor section
- show each elevation of the building
- show the level of the lowest floor the level of any yard or unbuilt area on that floor and the level of the ground
- indicate the fire safety and fire resistance measures (if any) and their height design and construction

Where you propose to alter add to or rebuild a building that is already on the land or modify plans that have already been approved please mark the general plan (by colour or otherwise) to show the change you propose to make

☒ detailed specifications of the building (4 copies)

The specifications are to

- describe the construction (including the standards that will be met) the materials which will be used to construct the building and the methods of drainage sewerage and water supply
- state whether the materials proposed to be used are new or second hand and give details of any second hand materials to be used

Where you propose to modify specifications that have already been approved please mark the approved specifications (by colour or otherwise) to show the modification

☐ a plan of the existing building drawn to scale where the application involves building work to alter enlarge or extend that building

This plan will assist the certifying authority to assess whether the work will reduce the fire protection capacity of the building

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Email mail@protas net au Web www protas net au ABN 37 079 830 756

5 continued

☐ where you propose to meet the performance requirements of the Building Code of Australia (BCA) by using an alternative solution to the deemed-to satisfy provisions of the BCA
- a list of the performance requirements you will meet by using the alternative solution
- the details of the assessment methods you will use to meet those performance requirements
- a copy of any compliance certificates on which you rely

☐ evidence of any accredited component process or design on which you seek to rely

Components processes or designs that relate to the erection or demolition of a building are accredited under the Environmental Planning and Assessment Regulation 2000

☐ details of the fire safety measures unless you are building a single dwelling or a non habitable building or structure (such as a private garage carport shed fence antenna wall or swimming pool) These details are to include
- a list of any fire safety measures you propose to include in the building or on the land
- if you propose to alter add to or rebuild a building that is already on the land a list of the fire safety measures that are currently used in the building or on the land

The lists must describe the extent capability and the basis of design of each measure

☐ the attached schedule completed for the development

The information in the schedule will be used by the Australian Bureau of Statistics to report each quarter on the building activity that occurs in the economy Building statistics allow governments and businesses to accurately identify main areas of population growth and demand for products and services

You may also need to pay a long service levy under section 34 of the *Building and Construction Industry Long Service Payments Act 1986* (or where such a levy is payable by instalments the first instalment of the levy) before the certifying authority can issue a certificate to you

2 If you are going to **carry out work to do a subdivision** (eg building roads or a stormwater drainage system)

☐ the details of the existing and proposed subdivision pattern (including the number of lots and the location of roads)

☐ the details of the consultation you have carried out with the public authorities who provide or will increase the services you will need (like water road electricity sewerage)

☐ the existing ground levels and the proposed ground levels when the subdivision is completed

☐ copies of any compliance certificates on which you rely

☐ detailed engineering plans (4 copies) The detailed plans might include the following
- earthworks
- roadworks
- road pavement
- road furnishings
- stormwater drainage
- water supply works
- sewerage works
- landscaping works
- erosion control works

Where you propose to modify plans that have already been approved please mark the approved plans (by colour or otherwise) to show the modification

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5 continued

4 If you are going to change the use of a building or the classification of a building under the Building Code of Australia and you are doing building work (under the building will now be used as a single dwelling or a non habitable building or structure (such as a private garage, carport, shed fence entering, wall or swimming pool))

- ☐ a list of any fire safety measures you propose to include in the building or on the land
- ☐ if you propose to alter add to or rebuild a building that is already on the land, a list of the fire safety measures that are currently used in the building or on the land
- ☐ details as to how the building will comply with the Category One fire safety provisions of the Building Code of Australia

The lists of fire safety measures must describe the extent capability and the basis of design of each measure

6 Signatures

The owner(s) of the land must sign this application if

- at the time the owner signed the development application the owner did not give consent to the applicant to lodge a construction certificate, or
- the owner of the land has changed since the owner signed the development application

As the owner(s) of the above property I/we consent to this application

Signature

Name SUSAN ROTHWELL

Date 11/5/09

Signature

Name

Date

The applicant or the applicant's agent, must sign the application

Signature

Name, if you are not the applicant William Rothwell

Date 11/5/09

In what capacity are you signing if you are not the applicant? Project Architect

7 Privacy policy

The information you provide in this application will enable your application to be assessed by the certifying authority If the information is not provided, your application may not be accepted Please contact the council if the information you have provided in your application is incorrect or changes

Schedule to application for a construction certificate

Please complete this schedule The information will be sent to the Australian Bureau of Statistics

All new buildings

Please complete the following

- Number of storeys (including underground floors) 4
- Gross floor area of new building (m²) 706
- Gross site area (m²) 2,224

Residential buildings only

Please complete the following details on residential structures

- Number of dwellings to be constructed 1
- Number of pre-existing dwellings on site 0
- Number of dwellings to be demolished 0
- Will the new dwelling(s) be attached to other new buildings? Yes ☐ No ☒
- Will the new building(s) be attached to existing buildings? Yes ☐ No ☒
- Does the site contain a dual occupancy? (NB dual occupancy = two dwellings on the same site) Yes ☐ No ☒

Materials – residential buildings

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

Walls		Code	Roof		Code	Floor		Code	Frame		Code
Brick (double)	☒	11	Tiles	☐	10	Concrete or slate	☒	20	Timber	☐	40
Brick (veneer)	☐	12	Concrete or slate	☒	20	Timber	☐	40	Steel	☐	60
Concrete or stone	☐	20	Fibre cement	☐	30	Other	☐	80	Aluminium	☐	70
Fibre cement	☐	30	Steel	☐	60	Not specified	☐	90	Other	☐	80
Timber	☐	40	Aluminium	☐	70				Not specified	☐	90
Curtain glass	☐	50	Other	☐	80						
Steel	☐	60	Not specified	☐	90						
Aluminium	☐	70									
Other	☐	80									
Not specified	☐	90									

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Email mail@protas net au Web www protas net au ABN 37 079 830 756

Duncan Bray MA (Eng) OXON AMICE MIE (Aust) BPEQ
80 Great Buckingham Street
Redfern N S W 2016
Tel (02) 9319 1067 Mbl 0427 808880
Fax (02) 9319 0750
email duncnbray@tpg com au

Duncan Bray Pty Ltd A C N 001 631 125
A B N 26 001 631 125

Mrs Susan Rothwell
Susan Rothwell & Associates
38 Serpentine Road
GREENWICH
NSW

CONSTRUCTION CERTIFICATE

Ref 3758 Date, May 12, 2009

PROJECT ADDRESS **42 Sunrise Road, Palm Beach**

Pursuant to the provision of Section 93 of the Local Government Act 1993

I DUNCAN BRAY of DUNCAN BRAY PTY LTD, ACN 001 631 125

80 GREAT BUCKINGHAM STREET, REDFERN, NSW, 2016

hereby certify -

1 That the **Structural & associated drawings** listed below have been checked and comply with -

(a) The relevant clauses of the Building Code of Australia contained in the Volume, Class 1 to Class 10 Buildings

(b) Construction & Safety Regulations under the Construction Safety Act, 1912 Issue August 1988
Public Stands Part 12 b
Regulations 157 G to 157 J

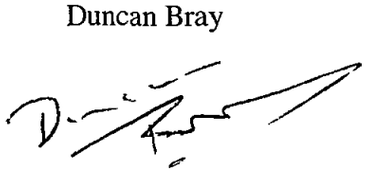
(c)

Australian Standard	1170 Part 1	SAA Loading Code, Dead & Live loads
AS	1170 Part 2	SAA Loading Code, Wind Loads
AS	2870	Residential Slabs & Footings
AS	3600	Concrete Structures
AS	1684	National Timber Framing Code
AS	4100	Steel Structures

Certified Drawings numbers and revision list

S0-01, S1-01, S1-02, S1-03, S1-04, S1-05, S2-01, S2-02, S2-02, S3-01, S3-02, S3-03
S4-01, S4-02, S5-01, S6-01 Issue C1 & C2

Duncan Bray



Structural Engineer

Our Reference SY070315

7 September 2007

Susan Rothwell and Associates
38 Serpentine Road
GREENWICH NSW 2065

Attn Mr Will Rothwell

Dear Will

Re Proposed Residential Development
42 Sunrise Parade Palm Beach

The concept design of the stormwater drainage system for the Development Application in relation to the above project has been designed in accordance with normal engineering practice and meets the requirements of relevant Australian Standards and Section 5 3 of *Pittwater 21 DCP* adopted 8 December 2003 Details are shown on ACOR Drawing No SY070315 C1 01/A dated 4 September 2007

Yours sincerely
ACOR Consultants Pty Ltd

John Karikios BE MIE Aust CPEng Grad Dip (Eng) Grad Dip (Planning)
Senior Associate

ACOR CONSULTANTS PTY LTD
ENGINEERS
MANAGERS
INFRASTRUCTURE PLANNERS
SYDNEY BRISBANE NEWCASTLE
ACN 079 306 246
ABN 26 522 454 721
Level 1 24 Falcon Street
PO Box 822
Crows Nest NSW 2065
TEL 02 9438 5098
FAX 02 9438 5398
acor@acor.com.au

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO 2 – To be submitted with detailed design for construction certificate

Development Application for Mrs Rothwell
Name of Applicant

Address of site 42 Summer Road, Palm Beach

Declaration made by Structural or Civil Engineer in relation to the incorporation of the Geotechnical Issues into the project design

I DUNCAN BRAY (insert name) on behalf of DUNCAN BRAY PTY LTD (trading or company name)

on this the 25 March 2009 (date)

certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater I am authorised by the above organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least $2million I also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development

Geotechnical Report Details

Report Title 211202 rpt 2
Report Date September 2007
Author A Zamen

Structural Documents list

S0-01 C1
S1-01 C1, S1-02 C1, S1-03 C1, S1-04 C1, S1-05 C1, S2-01 C1, S2-02 C1, S2-03 C1
S7-01 C2, S7-02 C2, S7-03 C2, S4-00 C2, S4-02 C2, S5-01 C1, S6-01 C1

I am also aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an Acceptable Risk Management" level for the life of the structure taken as at least ~~100~~ 25 years unless otherwise stated and justified

DUNCAN BRAY (name) (signature)

Declaration made by Geotechnical Engineer or Engineering Geologist in relation to Structural Drawings

~~I~~ We prepared and/or technically verified the abovementioned Geotechnical Report as per Form 1 dated 5/9/07 and now certify that ~~I~~ have viewed the above listed structural documents prepared for the same development. ~~I am~~ We are satisfied that the recommendations given in the Geotechnical Report have been appropriate taken into account by the structural engineer in the preparation of these structural documents

~~I am~~ We are aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy including this certification as the basis for ~~ensuring~~ confirming that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least ~~100~~ 25 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk as indicated in Report

Signature Bruce F Walker Date 30/3/09

Name BRUCE F WALKER

Chartered Professional Status CP ENG FIEAust

Membership No 199312

For and Behalf JEFFERY + KATHUSKAS

PITTWATER

ABN61 3408 7871
02 9970 1111
02 9970 7150

PO Box 882
Mona Vale NSW 1660
DX 9018 Mona Vale

Gina Hay, Executive Planner
8am to 5 30pm Mon - Thurs, 8am to 5pm Fri
Phone 9970 1111

5 February 2009

Will Rothwell
Susan Rothwell Architects
38 Serpentine Rd
GREENWICH NSW 2065

Dear Will,

Re N0528/07 - 42 Sunrise Rd, Palm Beach Compliance with Condition C9

With regard to Condition C9 for the above Development Consent, I wish to advise that Council's Heritage Consultant has no objection to the colours shown on the Schedule of Finishes, submitted 5 February 2009 ie

Below Ground Floor Walls Porters Mineral Paint "Burnt Umber"
Ground Floor Walls Porters Mineral Paint "Swiss Brown"
First Floor Walls Porters Mineral Paint "Bowral Stone"

As such, Condition C9 has been satisfactorily complied with

Yours faithfully

Gina Hay
EXECUTIVE PLANNER

Our Ref 1095VMP

13 October 2008

Susan Rothwell Architects
38 Serpentine Road
GREENWICH NSW 2065

Attention Mr Will Rothwell

Dear Will

Re Lot 152 DP6937 No 42
Sunrise Road, Palm Beach

Travers environmental has been requested by Mr Will Rothwell to advise on whether the latest plans showing the impact zone from the proposed development are satisfactory and in accordance with the Vegetation Management Plan dated September 2007 for Lot 152 DP6937 No 42 Sunrise Road Palm Beach

The proposed dwelling will only impact trees which have been approved to be removed and is therefore consistent with the Vegetation Management Plan for the site

An attachment of the Site Disturbance Plan shows the area of concern and has been overlayed onto the Vegetation Management Schedule done by *Conacher Travers* (now *Travers environmental*) to provide assistance with this correspondence

Please contact me on 4340 5331 or email on ecology@traversenvironmental.com.au if you require further assistance

Yours faithfully

Michael Sheather Reid
Senior Ecologist
Travers environmental

JTA Pty Ltd trading as Travers Environmental ABN 64 83 086 677
38A The Avenue Mt Penang Parklands Central Coast Highway Kariong NSW 2250 PO Box 7138 Kariong NSW 2250
Phone (02) 4340 5331 Fax (02) 4340 2154 Email ecology@traversenvironmental.com.au & bushfire@traversenvironmental.com.au

Existing Residential

Existing Residential

Mixed Closed Forest 24° Downslope 1

Mixed Closed Forest

Mixed Closed Forest

Insitu trees dense moist weed understorey

Generally closed but mostly poorly managed

Existing Residential

Existing Residential

Existing Residential

Existing Residential

Area of site to be disturbed during construction. All other areas of site to remain undisturbed.

Sunrise Rd

Bushland Reserve

0 10 20 30 m

1:400

N

Original plan produced in A3 colour

Legend

- Property Boundary
- Edge of Forest Extent
- Mixed Closed Forest
- Existing Residential (Managed Lands)
- Remnant Gardens Beds and Exotic Regrowth
- Asset Protection Zone

Bushfire & Environmental Consultants

40 The Avenue, Mt. Penang Parklands,
Central Coast Highway, Kariong NSW 2250
Ph (02) 4340 0677 Fax (02) 4340 2367
e-mail: ecology@conachertravers.com.au

Figure 1 - Vegetation Management Plan

Sunrise Rd, Palm Beach

QUICK CHECK Application Lodgement Summary WATER

Reference Number 2565169 **Date Requested** Wed May 13 2009

Agent	Reece St Leonards, 37 Herbert Street St Leonards
Applicant	Gw & Se Rothwell, Lot 1 Pacific Rd Palm Beach 2108
Property/Asset	42 Sunrise Rd, Palm Beach 2108 (Se Rothwell) PNum 3455707 150 mm DICL Sewer Main - (8124417)
Product	Building Plan Approval Application

Charge	Product Cost	GST	Total
Building Plan Approval Application Fee	$25 00	$0 00	$25 00

Property Special Conditions

Boundary Trap Required	No
Watercharged/Tidal area	No
Partial Drainage area	Yes
Aggressive Soil area	No
Cast Iron Pipe area	No
Sewer Surcharge area	No
Minimum Gully Height area	No
Sewer Available	Yes
Connection Type	Gravity

You must contact Sydney Water's Plumbing Inspection and Assurance Services on Ph 1300 889 099 to clarify the property special conditions where the property special conditions are not shown (yes or no), are shown as unset , unknown ' or not available' or if the proposed development is being built over more than one existing property

Please note that boundary traps must be fitted for all commercial and industrial properties and you must ensure that all plumbing/drainage and building works are carried out in accordance with the relevant codes and standards

A water meter is required to be fitted to the property during construction You will need to ensure that your licensed plumber carries out this work in accordance to the relevant codes and standards

PITTWATER COUNCIL

Form No UI 203

Consent by Road Authority for Work in Road Reserve
Section 139 – Roads Act 1993
1 July 2008 - 30 June 2009

PLEASE PRINT

Applicant GRAEME LOVETT OF LOVETT BUILDING COMPANY PTY LTD

Postal Address 29/14 POCO AVENUE MONA VALE Postcode 2103

Phone (W) 02 9999-2117 (M) 0414 255 173

Property Address 42 SUNRISE RD PALM BEACH

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 Graeme Lovett *Date* 6/4/09

FEES (includes GST)

Consent for access driveway construction only (includes 2 site inspections) per allotment for **RESIDENTIAL SINGLE/ DUAL OCCUPANCY**	**$146 00** ✓
Consent for access driveway construction only (includes 2 site inspections) per allotment for **RESIDENTIAL SINGLE/ DUAL OCCUPANCY** which ***includes any of major retaining structures, stairs or special landscape treatment***	**$366 00**
Consent for access driveway construction only (includes 2 site inspections) per allotment for **OTHER THAN RESIDENTIAL SINGLE/DUAL OCCUPANCY**	**$171 00**
Consent for access driveway construction only (includes 2 site inspections) per allotment for **OTHER THAN RESIDENTIAL SINGLE/DUAL OCCUPANCY** which ***includes any of retaining structures, stairs or special landscape treatment***	**$487 00**
Fee per additional site inspection as required	**$133 00**

Office Use Only

Inspected by _____ **Date** _____

Approved

Not approved

Comment _____

_____

CODE ESTR 1 7 08 - 30 6 09Late Fee $618 when work commenced prior to issue of Consent Form No UI 203

FEE PAID $146-00 **RECEIPT NO** 257424 **ISSUED BY** Kobie **DATE** 06/04/09

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

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 **24 HOURS NOTICE IS REQUIRED**

9 **THIS CONSENT AND (PREVIOUSLY ISSUED) APPROVED PROFILE MUST BE RETAINED ON SITE FOR THE INSPECTING COUNCIL OFFICER'S APPROVAL**

10 Type of Construction

- **For residential single & dual occupancy** – 20MPa Concrete, 150mm thick
- **For other** – 20MPa Concrete, 180mm thick with F72 mesh

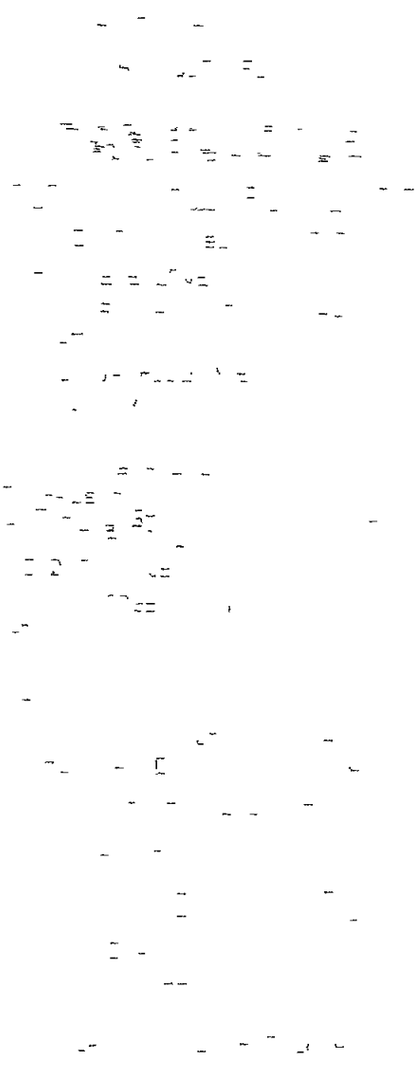
COMMONWEALTH BANK
EFTPOS
PITTWATER COUNCIL
MONA VALE NSW 1
TERMINAL 22195700

CUSTOMER COPY

CARD NO	535316-341
EXPIRY DATE	08/11
CREDIT	007690
PURCHASE	147 46
TOTAL	AUD147 46

06 APR 2009 14 26
CBA MASTERCARD

APPROVED 08



FORM NO

OFFICE USE ONLY

PLEASE PRINT ALL DETAILS USING CAPITALS

Surname (if person)
or Company/Organisation name

Given names (if person) SUSAN ROTHWELL

POSTAL ADDRESS
No and street or PO Box 38 SERPENTINE RD

GREENWICH

Town/suburb

State NSW Postcode 2065 Bus hours phone 94392380

Number and street 42 SUNRISE ROAD

Town/suburb PALM BEACH

State NSW Postcode 2108

Estimated start date D 29 M 05 Y 2009 Estimated finish date D 30 M 07 Y 2010

Local Council Area PITTWATER

[1] DA/CC/CDC No

Estimated value of work (see note on back) $ 3100,000 00 Levy payable $ 00

[1] If you have provided a CC above please provide DA number here N0528/07

Name of Officer/Private Certifier Anthony Protas Business hours phone 97155333

Department/Authority

Contract/DA No (circle which) Contract amount $ 00

Levy payable $ 00

Contact person (Print) _____ Phone number

Contact person (Signature) _____ Date D M Y

Any false or misleading information provided on this form may result in prosecution under Section 58A
I hereby declare that the information provided on this form is true and correct to the best of my knowledge

Name S E. ROTHWELL Signature [signature] Date D 15 M 05 Y 2009

Exemption Approval Certificate No

REC 259029
15/5/09
$10 850 00

SUSAN ROTHWELL & ASSOCIATES

CONSTRUCTION TRAFFIC MANAGEMENT PLAN FOR 42 SUNRISE ROAD, PALM BEACH

NOVEMBER 2008

COLSTON BUDD HUNT & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Telephone (02) 9411 2411
Facsimile (02) 9411 2422
Email cbhk@cbhk com au

REF 6522

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1 INTRODUCTION

1 1 Colston Budd Hunt & Kafes Pty Ltd has been commissioned by Susan Rothwell & Associates to prepare a traffic management plan for the construction of a residential dwelling at 42 Sunrise Road, Palm Beach The site is located on the northern side of Sunrise Road west of Northview Road, as shown on Figure 1

1 2 A traffic management plan has been prepared in response to the following condition of development consent for the approved development -

> "D14 A satisfactory construction traffic management plan (CTMP) prepared by a suitably qualified traffic consultant is required to be submitted to the Private Certifying Authority prior to the commencement of any site works The plan is to detail
>
> - Quantity of material to be transported
> - Proposed truck movements per day
> - Proposed hours of operation
> - Proposed traffic routes, noting that 3 tonne load limits apply to some roads in Pittwater "

1 3 The traffic management plan is presented in the following chapter

2 TRAFFIC CONTROL PLAN

2 1 In accordance with the condition (D14) of the development consent for the approved residential dwelling at 42 Sunrise Road, Palm Beach, a construction traffic management plan has been prepared The plan details the traffic management measures required during the construction of the approved development The site is located on the northern side of Sunrise Road, Palm Beach, as shown on Figure 1

2 2 The traffic management plan has been prepared through the following sections -

- overall principles for traffic management,
- hours of work,
- truck routes,
- traffic effects, and
- traffic management plan

Overall Principles for Traffic Management

2 3 The overall principles for traffic management during the construction are -

- provide a safe and convenient environment for pedestrians,
- minimise effects on pedestrian movements and amenity,
- maintain access to residential properties adjacent to the site,
- maintain maximum practical traffic capacity on Sunrise Road and at adjacent intersections in the vicinity of the site,

- maintain safety for workers,
- restrict construction vehicle activity to designated truck routes though the area,
- manage and control construction vehicle activity in the vicinity of the site, and
- construction activity to be carried out in accordance with Council's approved hours of work

Hours of Work

2 4 Work associated with the construction of the residential dwelling will be carried out between the following hours of construction -

- Monday to Friday - 7 00am to 5 00pm,
- Saturday - 7 00am to 1 00pm, and
- Sunday/Public Holiday - No Work

2 5 Internal building work may be undertaken outside these hours, subject to noise emissions from the building works not impacting on the adjoining properties

Truck Routes

2 6 Construction traffic associated with the construction of the development, including trucks transporting material to and from the site, will be managed and controlled by qualified site personnel

2 7 Truck movements will be restricted to a designated truck route and will be confined as far as possible to the main road network Construction vehicles will be restricted to rigid trucks only, with no deliveries to be made by larger articulated vehicles or truck and trail combinations The designated truck route for construction vehicles accessing the site are shown on Figure 2, and include Barrenjoey Road, Beach Road, Ocean Road, Palm Beach Road and Sunrise Road

2 8 The arrival and departure of trucks to and from the site will be carefully managed and controlled by qualified traffic controllers Truck drivers will be advised of the presence of the traffic controllers, and that they must observe his or her direction at all times Truck drivers will be inducted and advised of the designated truck route to and from the site

2 9 The designated truck route is proposed to restrict truck traffic as far as possible to the main road network In particular, the truck route is proposed to minimise intrusion of construction traffic into adjacent residential areas of Palm Beach The designated truck route to and from the site is considered appropriate

Traffic Effects

2 10 Construction of the development is understood to take some 12 to 16 months to complete and will comprise excavation of the site and construction of the main structure Excavation is expected to take two to three months and will generate some 1 to 3 trucks per day taking material from the site

2 11 Following the completion of excavation, construction of the main structure is expected to take a further 10 to 12 months During this period all construction vehicles and materials handling, including concrete deliveries, will occur from the on-street 'Works Zone" The on-street "Works Zone" will be managed and controlled by site personnel

2 12 The peak traffic activity generated by the construction period will occur during a concrete pour The builder has indicated that concrete pours will occur every two to three weeks with up to one to two trucks per day for small pours and four to five trucks per day for large pours This translates to an average of one truck load of concrete every two hours over the day, for large pours

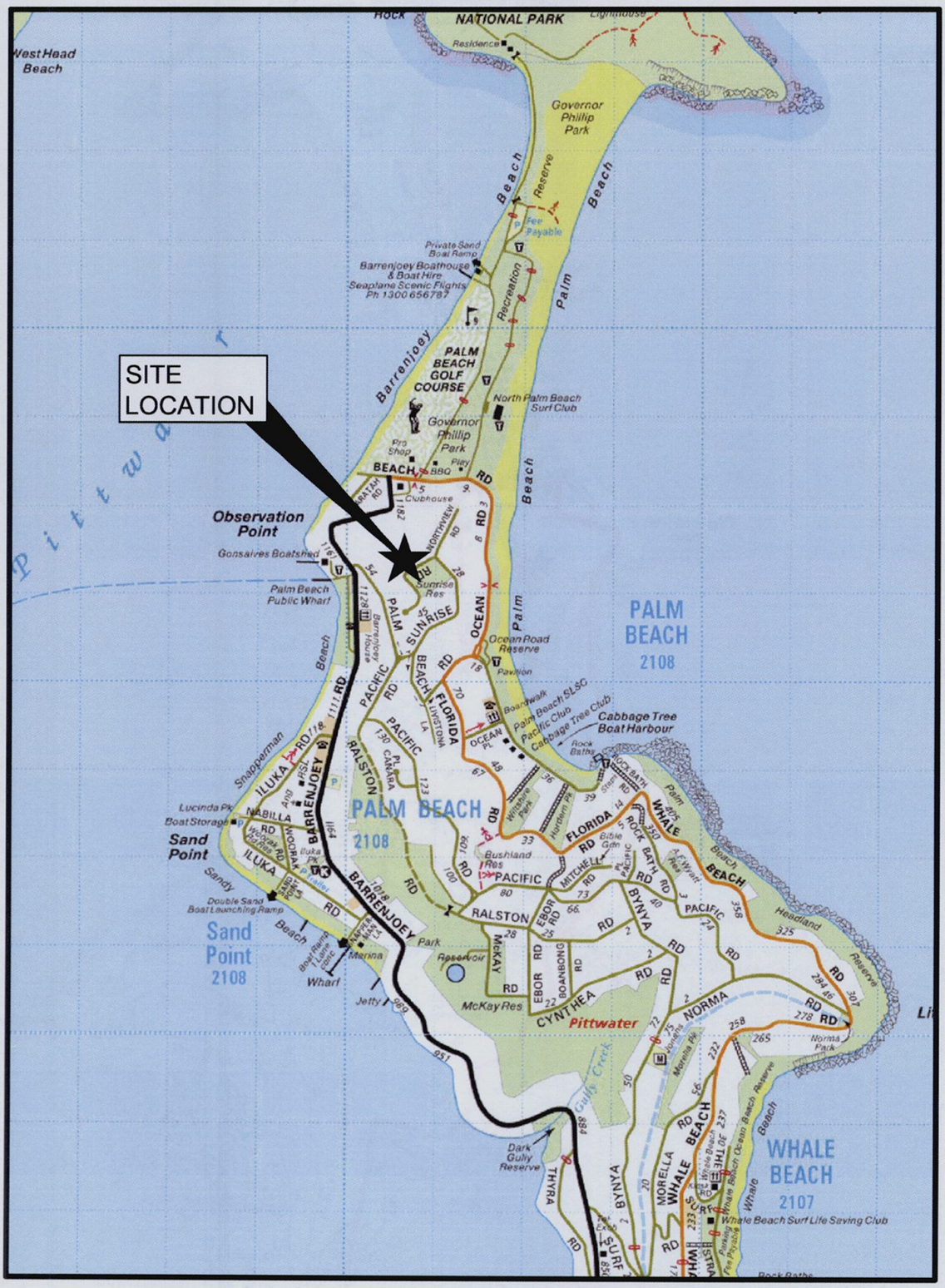
2 13 The surrounding road network and its intersections will be able to cater for the construction traffic generated during the construction process, including concrete pours At other times during the construction process, the number of trucks associated with the delivery of reinforcement, formwork, blockwork and other construction materials, including the removal of waste bins, will be some one to two trucks per day Intersections in the vicinity of the site will continue to operate at satisfactory levels of service during the overall period of construction

Traffic Management Plan

2 14 The proposed traffic management plan for the construction of the development is shown on Figure 3 The plan presents the principles of traffic management and is subject to WorkCover requirements, as well as survey and final design

2 15 The implementation of the construction traffic management plan will be the responsibility of the appointed contractor/qualified traffic controller Detailed information regarding documentation of work site operations is provided in the Australian Standards and the Roads and Traffic Authority s Manual for Traffic Control at Work Sites The final location of the traffic control devices and guidance/warning signs associated with the plan will be determined by the traffic controller in accordance with these standards The signs and devices will be located to achieve a safe environment for pedestrians and motorists and to provide appropriate sight distances, informing motorists of the changed traffic conditions ahead

2 16 The traffic management plan for the construction of the approved residential dwelling is considered appropriate for traffic and pedestrian activity



LOCATION PLAN

1

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TRUCK ROUTES

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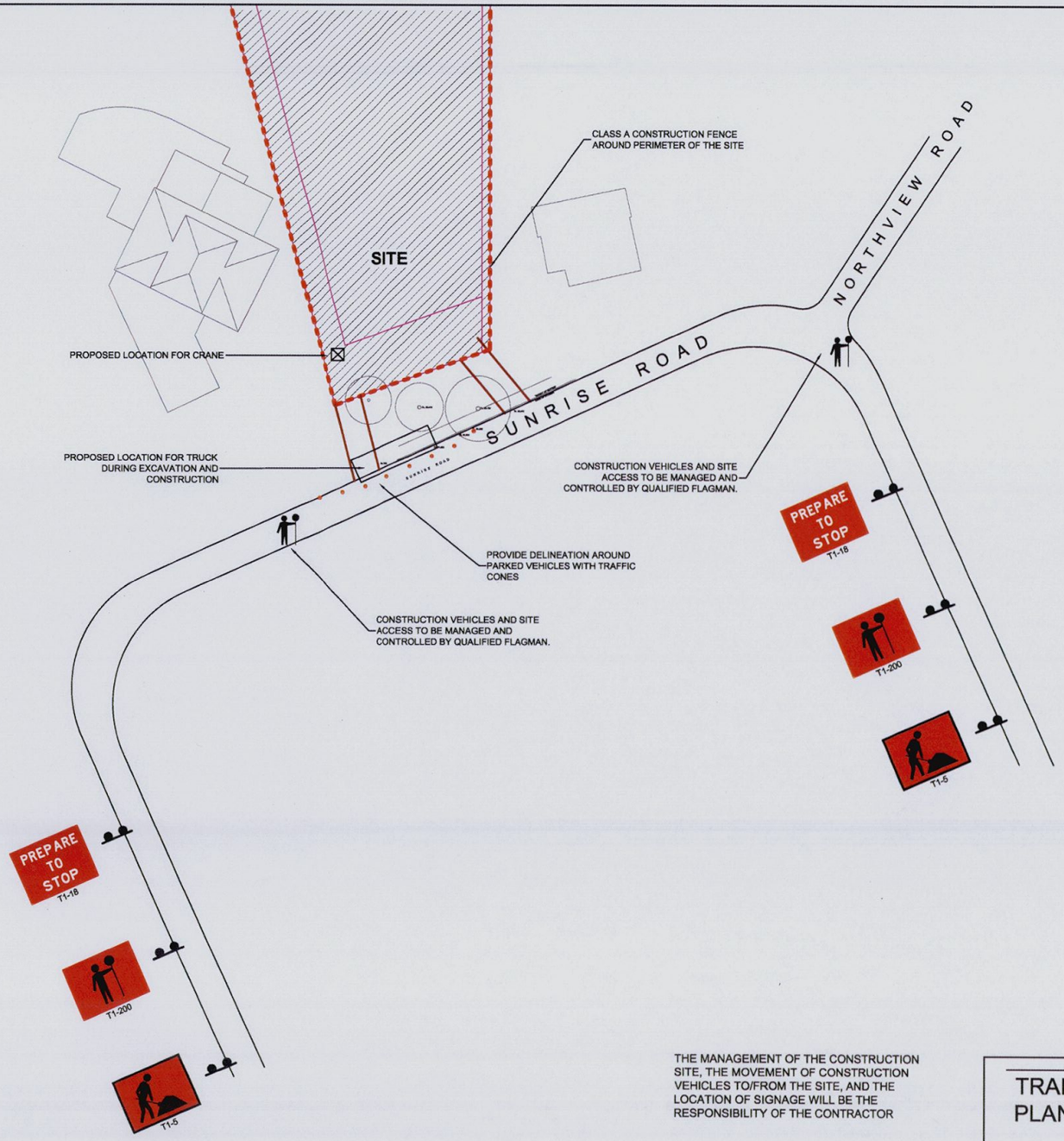
2



NOTE:
Sketch Plan only. Property boundaries, utilities kerblines, dimensions and traffic measures proposed are subject to survey and final design of a Traffic Control Plan.

This Traffic Management Plan presents the principles of traffic management. Traffic measures proposed are concept only and are subject to final design and approval by Work Cover. This Traffic Management Plan should not be used as the Traffic Control Plan.

Signs to be located in accordance with the Traffic Control Plan and Australian Standards AS1742.1, AS1742.2, AS1742.3, and AS1742.10.

N
NOT TO SCALE

THE MANAGEMENT OF THE CONSTRUCTION SITE, THE MOVEMENT OF CONSTRUCTION VEHICLES TO/FROM THE SITE, AND THE LOCATION OF SIGNAGE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR

TRAFFIC MANAGEMENT PLAN

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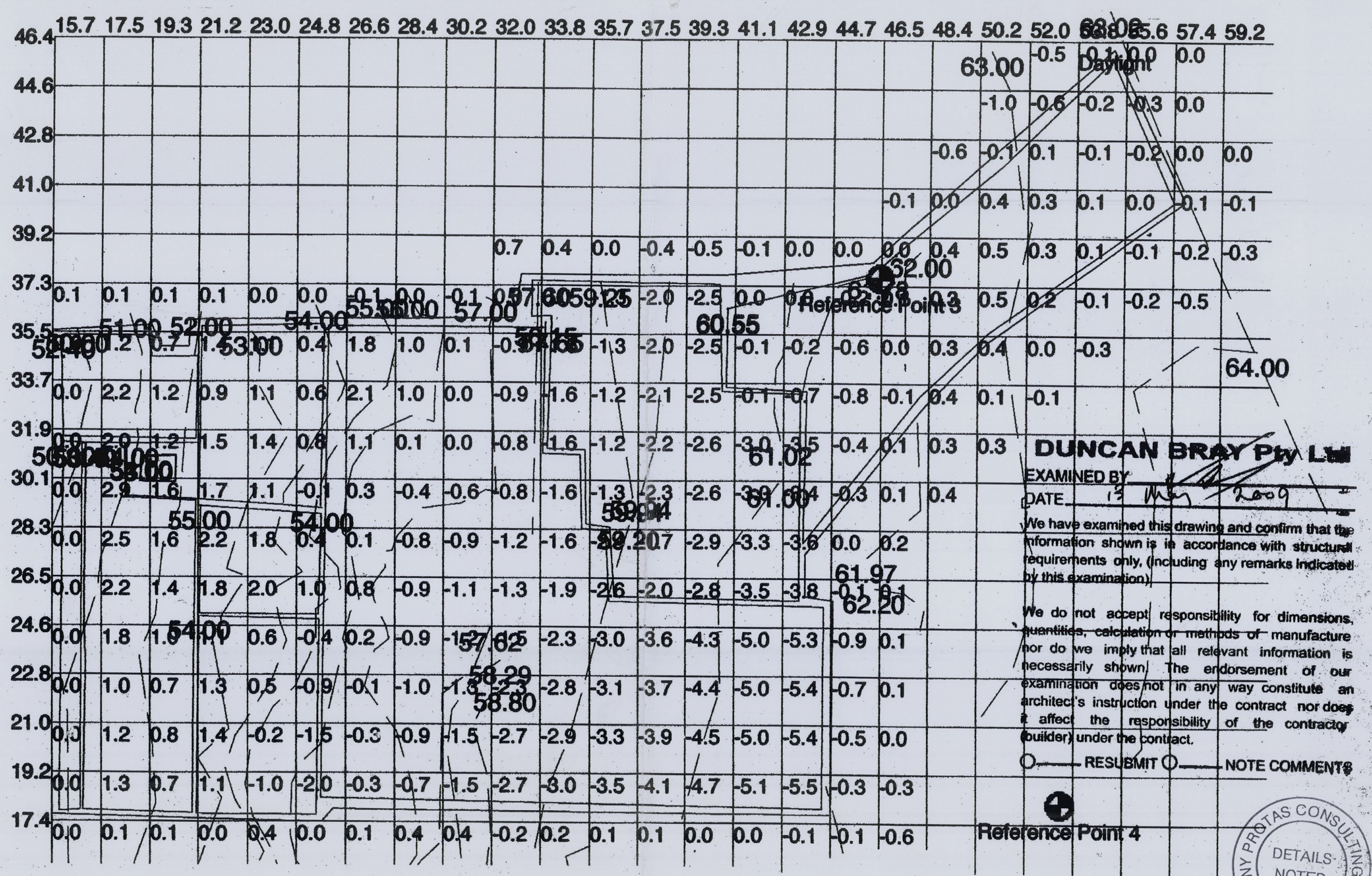
3



DUNCAN BRAY Pty Ltd

EXAMINED BY

DATE 13 May 2009

We have examined this drawing and confirm that the information shown is in accordance with structural requirements only, (including any remarks indicated by this examination).

We do not accept responsibility for dimensions, quantities, calculation or methods of manufacture nor do we imply that all relevant information is necessarily shown. The endorsement of our examination does not in any way constitute an architect's instruction under the contract nor does it affect the responsibility of the contractor (builder) under the contract.

○ RESUBMIT ○ NOTE COMMENTS

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

PROPOSED NEW RESIDENCE AT
42 SUNRISE ROAD, PALM BEACH
EXCAVATION/LANDFILL PLAN

S P E C I F I C A T I O N

OF MATERIALS AND WORKMANSHIP
TO BE USED ON THE CONSTRUCTION

OF

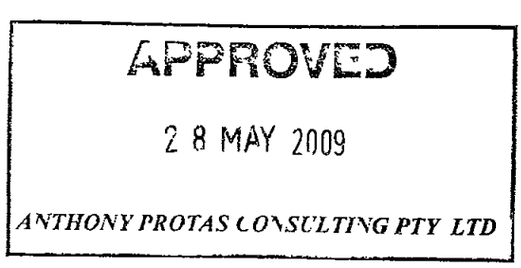
SINGLE RESIDENCE

AT

42 SUNRISE RD, PALM BEACH

FOR

MRS S ROTHWELL



ARCHITECT

SUSAN ROTHWELL ARCHITECTS PTY LTD

38 Serpentine Rd, Greenwich NSW 2065 T 0294392380

PART I GENERAL

101 Scope

Provide materials and labour, equipment and services and perform operations necessary to complete the carpentry as indicated and specified Include nailers, blocking, furring, grounds, hardware framing shoring bracing, scaffolding and barriers required by the Drawings and construction

102 Related Work

Co-operative and co-ordinate with the following trades
Bricklayer, Roofer, Structural Steel

103 References

Comply with applicable portions of the following Australian Standards

AS 1684	1999	Residential timber-framed construction
		There are 4 parts and 92 supplements to this standard
AS 1720		Timber Structures
		1720 1 1997 Design methods
		1720 2 1990 Timber properties
		1720 4 1990 Fire-resistance of structural timber members
AS/NZS 1859		Reconstituted wood - based panels
		There are 5 parts to this standard, 1996 - 1997
		1859 1 1997 Particleboard
		1859 2 1997 Medium density fibreboard (MDF)
		1859 2 (Int) 2004 Specifications - Dry processed fibreboard
		1859 3 1996 Decorative overlaid wood panels

Further advice and changes in specifications of timber frequently are needed For latest information contact www timber net au
For timber decks refer to www timber net au –decks
Australian cypress and pine hardwood manual Tel 1800 044 529 Building Information Centre

104 Submissions

Submit the following prior to ordering materials
Product literature on hardware items proposed
Technical data and samples of substrate materials (particleboard etc) Thickness of materials at typical locations and functions

105 Delivery, Handling and Storage

Deliver, handle and store products so that damage deterioration and loss will be prevented Control delivery schedules to minimise long-term storage at site
Store timber on site indoors, or above ground and cover with secure impervious material

PART II MATERIALS

201 External Timber and Related Items

Entry Roof Beams	200x 70 recycled hardwood
202 Internal Timber Handrails	50dia Blackbutt sanded and painted
203 130C	100x 100 recycled hardwood posts and beams (beam sizes to
Ens 1 Balcony Pergola	structural engineer s detail)
204 Framing Generally	dimensioned pine of size to suit application

PART III EXECUTION

301 Examination

Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site Start of work means total acceptance of conditions

302 Installation General

Comply with AS 1684 SAA Timber Framing Code and other relevant standards
Timber Development Association NSW Ltd Tel (02) 9360 3088 Fax (02) 9360 3464

303 Installation Particulars

Perform operations including grooving rebating framing housing beading, mitring scribing, nailing screwing and gluing as necessary to carry out the works Use timber in single lengths whenever possible If joins are necessary, make them over supports unless otherwise shown or specified
Arris visible edges in sawn work and in dressed work arris with sandpaper to 1 5mm radius unless otherwise shown or specified
Back plough boards liable to warping (for example if exposed on one face) Make the width depth number and distribution of ploughs appropriate to the dimensions of the board and the degree of its exposure
Provide necessary templates linings, blocks stops ironwork and hardware screws, bolts, plugs and fixings generally
Trim framing where necessary for openings, including those required by other trades
Construct wall framing vertical so that no more than 3mm out of vertical in 3000mm of wall height

304 Entry Roof Framing

To the areas indicated frame up for glazed roof using timber members generally as follows 200x70 beams fixed to masonry piers All fixings to use s s bolts and washers, with heads fully recessed in timber Install frameless glass roof panel as nominated (see GLAZIER), in accordance with manufacturer s instructions

305 Plywood Roofing Substrate

Line the entire roof area, with double sided aluminium sarking, taped at all joints, and lay R1 0 insulation batts between all framing members Apply18mm T&G waterproof structural plywood sheeting, fixed to metal purlins with non-corrosive screws Frame up for and line specially formed box gutters with similar material Ensure that finished surface is smooth and even, and fill any defective areas where necessary to achieve a suitable substrate for the waterproof membrane lining Prepare for services penetrations where required and install additional framing as necessary for support and fixing

306 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

The work of this Section covers the supply and installation of site built joinery items It includes but is not limited to
Site built items such as
Service cupboards
Benches
Shelves
Trim, architraves, skirtings, etc
Hardware

102 Related Work

Co-ordinate and co-operate with the following trades
Floor construction
Wall construction
Ceiling construction
Window trades
Doors and door frames
Plaster trades
Electrical installations

103 Quality Assurance

Prototype At a location selected by the Architect construct a complete prototype installation of Include in each prototype elements required by this Specification, finished in every respect When approved by the Architect, each prototype remains part of the work and becomes the standard for the remaining work

104 References

Comply with applicable portions of the Australian Standards listed in SECTION 06000 CARPENTRY plus those following, current edition

AS/NZS 1859		Reconstituted wood - based panels
		There are 5 parts to this standard, 1996 - 1997
		1859 1 1997 Particleboard
		1859 2 1997 Medium density fibreboard (MDF)
		1859 2 (Int) 2004 Specifications - Dry processed fibreboard
		1859 3 1996 Decorative overlaid wood panels
AS 2754		Adhesives for timber and timber products
		2754 2 1991 Polymer emulsion adhesives
		2754 3 1988 Adhesives for non-structural applications
AS 2796	1999	Timber - Hardwood- Sawn & milled products
		There are 3 parts to this standard
AS/NZS 4785		Timber - Softwood- Sawn & milled products
		There are 3 parts to this standard
		4785 1 2002 Product specification
		4785 2 2002 Grade description
		4785 3 2002 Timber for furniture components

105 Submissions

Submit the following prior to fabrication
Product literature on proposed hardware items
Samples of profiles for architraves skirtings, etc

106 Delivery, Handling and Storage

Do not deliver until completion of anything which could soil, damage or deteriorate joinery Prevent soiling damage or deterioration during delivery storage and handling
Keep site storage to a minimum If circumstances make storage necessary in areas other than the final location store only in those that meet the requirements specified for installation areas

PART II MATERIALS

201 Site built items

A	Service Cupboards	Electrical Water & Gas Meters, Telephone etc	
	Frames	100x50 rebated impregnated pine	
	Doors	Edgestripped Solid Core Waterproof plywood lining	
	Internal divisions	18mm Waterproof plywood with hardwood edgestrip	
B	Mechanical Duct Boxing		
		Material	18mm MDF
		Framing	metal angle or timber
		Fixings	Concealed and removable
C	Shelves	Supports	Galvanised MS angle as detailed
		Shelf material edgestripping	Veneered Waterproof Plywood with matching hardwood
D	Trims		
	Architraves	Material	Blackbutt for polished finish
		Size	150 x 25
		Profile	Selected profile
	Skirting	Material	Blackbutt for polished finish
		Size	200 x 25
		Profile	Selected profile

PART III EXECUTION

301 Examination

Visit the site and inspect conditions Check dimensions and compare aspects with the Drawings and Specification Resolve differences before ordering materials or starting work
Start of work means total acceptance of conditions

302 Preparation for Joinery Installation

Prior to installing condition joinery to the average humidity conditions prevailing in the areas
Deliver anchoring devices and similar inserts required to be built into substrates well in advance of the fixing of fittings and provide full details when they are to be fixed by others
Prior to installation examine shop-fabricated work for completeness and remedy deficiencies Include back priming and the removal of packing
Thoroughly clean floors and walls that will be permanently concealed by joinery

303 Installation of Joinery

Use concealed shims as required to install the work plumb, level straight and distortion free within the following tolerances

- 1mm in 800mm for plumb and level (including bench tops)
- 0 5mm maximum offsets in flush adjoining surfaces
- 2mm maximum offsets in revealed adjoining surfaces

Scribe and cut to fit adjoining work, refinish cut surfaces or repair damaged finishes at cuts
Secure joinery with anchors or blocking built-in or directly attached to substrates Secure to grounds, stripping and blocking with countersunk concealed fasteners and blind nailing as required to complete the installation Except where pre-finished matching fastener heads are required use fine finishing nails countersunk and filled flush Use a matching filler where a transparent finish is required
Install casework without distortion so that doors will fit openings properly and be accurately aligned

304 External Services cupboards

For all external services cupboards construct generally using concealed timber or aluminium framing lined with 18mm edgestripped waterproof plywood Concealed surfaces of carcass to be fully primed and sealed with waterproof membrane, before being set into brick openings Construct

and fit doors divisions and fixed panels as detailed or where required Fill all gaps and defects before sanding smooth Apply primer coat and sand smooth for final painted finish (Refer Painter)

305 Hardware

Install joinery hardware as scheduled, listed and required in full compliance with the manufacturer's recommendations (Refer PC Sums)
Adjust as needed to centre doors in openings

306 Adjustments, Cleaning, Finishing and Protection

A Finish the work specified in this Section and remedy anything not finished at the shop or other stage prior to completion
B Adjust joinery to achieve a uniform appearance
C Lubricate and clean hardware making final adjustments needed for proper operation Remove handling marks from visible joinery surfaces
D Protection Do everything needed to ensure that work is without damage or deterioration at Practical Completion

307 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

The scope of work includes but is not limited to the supply and installation of thermal insulation
It also includes the supply and installation of acoustic insulation

102 Related Work

Co-ordinate and co-operate with the following trades
Carpentry, wall & roof framing
Brickwork, Blockwork
Metal Roofing
Roof Tiles
Plasterboard
Suspended Ceiling

103 Quality Assurance

Installers are required to be widely experienced in relevant aspects of the work and with the requirements of Australian Standards appropriate to the work

104 References

Comply with applicable portions of the Australian Standards listed in SECTION 06000 CARPENTRY plus those following current edition

AS/NZS 1859		Reconstituted wood - based panels
		There are 5 parts to this standard, 1996 - 1997
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		There are 3 parts to this standard,
		4785 1 2002 Product specification
		4785 2 2002 Grade description
		4785 3 2002 Timber for furniture components

105 Submission

Provide to the Architect before ordering, samples literature and technical data of each specified material

106 Delivery, Handling and Storage

Deliver, handle an store products so that damage, deterioration and loss will be prevented Control delivery schedules to minimise long-term storage at the site
Store above ground with secure impervious material

PART II MATERIALS

201 Approved Material Suppliers

ACI
BRADFORD

202 Materials - Thermal

A Thermal insulation (building paper type) with and without reflective facings with and without flame retardants sarking

B Vapour barriers - with and without reflective facings - paper/foil high density polyethylene breather membranes aluminium foil reinforced or folded as batts
Comply with manufacturers recommendations and AS/NZS 4200 1 Materials

C Bulk thermal insulation - in sealed batts or sealed blankets semi-rigid glasswool rockwool or cellulosic fibre sea-grass, polyester, without facing
Comply with manufacturer s recommendations the applicable Australian Standards

203 Materials - Acoustic

A Acoustic insulation (attenuation type) with or without facings - flexible polyurethane foam polyester blankets, glass and mineral wool batts plasterboard

B Acoustic insulation (absorption type) with or without facings, reinforcement - suspended mineral fibre ceilings mineral tiles perforated fibre cement sheet systems and panels metal pans and strips with or without absorption batts suspended baffles sound barriers sprayed texture finishes of plaster, cement or vermiculite

C Acoustic sealants - polyethylene foam closed cell resilient foams, polyurethane foams non-shrinking sealants of silicone or similar type with good adhesion, door and window seals

PART III EXECUTION

301 Examination

Visit the site and inspect conditions comparing conditions to Drawings before delivery of materials to site Start of work means total acceptance of conditions

302 Preparation

Prepare surfaces and or framing material and ensure that no obstructions will prevent rapid and effective installation

303 Installation General (Thermal)

Comply with manufacturer's current written recommendations and the relevant Australian Standards
Install membrane to metal roofing tiled roofing, walls, underside of floor
Install bulk thermal insulation to
Walls
Roof
Ceiling Space

304 Installation General (Acoustic)

Install acoustic attenuation type material in accordance with the manufacturer s current written recommendations Comply with AS 2107
Install absorptions acoustic material in accordance with the manufacturer s current written recommendations
Seal junctions and around penetrations where indicated by the acoustic systems designs

305 Cleaning

Remove surplus material on completion and arrange for inspection(s) by manufacturers representative

306 Completion

Complete contracted work in accordance with the contract document and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply and install waterproof membranes to entire roof area as well as Planter Boxes Terraces, and north garden beds over carpark including preparatory work and associated materials including but not limited to the following
Surface Patching and Filling
Expansion Jointing
Flashings sealants etc to above items

102 Related Work

Co-ordinate and co-operate with the following trades
Plumbing
Concrete
Masonry
Fencing
Landscaping
Tiling
Electrical
Irrigation

103 Quality Assurance

Perform work of this Section with experienced tradesmen familiar with the quality of work required in this class of work, and approved in writing by the material supplier
Pre-installation Conference Meet at site with installer material supplier, installers of relative work and Architect Give 72 hours notice to all Keep record of decisions

104 References

Comply with applicable portions of the following Australian Standards

AS A99	1959	Bituminous felt roofing Type 1(c) coated organic fibre felt roofing
AS/NZS 2179		Specifications for rain water goods accessories and fasteners
		2179 1 1994 Metal shape or sheet rainwater goods and metal accessories and fasteners
		There is another part to this standard 1998
AS CA 1970		Code of recommended practice for the design and installation of bituminous fabric roofing

105 Submissions

A Submissions required prior to installation
- 1 Samples of proposed materials
- 2 Testing and certifications available from material manufacturer
- 3 Product specifications for
  - (a) Membrane systems
  - (b) Adhesive and primers
  - (c) Sealants

B Arrange for a pre-installation conference of related trades impressing the need to advise the Builder of any works that may affect the integrity of the waterproofing so that the necessary repairs may be arranged Submit the minutes of this meeting to the Architect

106 Delivery, Handling and Storage

Reduce on-site storage of materials to a minimum Deliver materials as and when required for direct installation Be responsible for loss and damage to materials delivered whether stockpiled or in place
Materials are to be properly packaged and brought to the site in original unopened containers with grade type and quality indicated on the labels

107 Warranty

Provide to the Proprietor a warranty co-signed by the material supplier and his authorised installer covering the whole of the roof and wall membrane system stating that such installations will remain weather-tight and waterproof for the period of fifteen years from the date of Practical Completion

Included in the warranty roof penetrations for equipment supports, pipes flues, upstands, flashings etc including any repairs resulting from other trades work after the membrane work has been completed

Note This will necessitate co-operation with other trades and review of the results of the work of those tradesmen

PART II MATERIALS

201 Acceptable Manufacturers

BAKOR (local distributor WRIMCO (02)9660 8333) - Modified PLUS
DRIZORO (local distributor WRIMCO (02)9660 8333) - MAXSEAL
DUROTECH INDUSTRIES (02) 9603 1177 - DUROMASTIC ACS-2
PARCHEM (02) 4350 5000 - Emer-Seal PU 25
AUSTRALIAN DRAINING MODULES (02) 9929 7650 - AUSDRAIN

202 Materials

A Sheet Membrane

Generic name SBS Modified Bitumen - name **Modified PLUS NP180gT4**
Thickness 3mm (4mm with granules)
System Type Torch Applied fully bonded single layer with double detailing
Surface finish Polyfilm generally granules to entire roof surface and where specified

B Accessories

Drainage cell 30mm thick **Ausdrain** polypropylene drainage modules
Filter Fabric 1mm thick polypropylene with 150 mm pores
Protection board **Wrimco PB4** extruded polystyrene foam sheeting
Expansion Jointing pre-slit **Abelflex PE**

C Liquid Membrane

Name **Maxseal Foundation** for retaining Walls **Duromastic ACS-2** elsewhere
Type Cementitious coating

203 Joint Sealing Materials

A Joint Primer/Sealer Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed

B Bond Breaker Tape Polyethylene tape as recommended by sealant manufacturer to be applied to sealant-contact surfaces where bond to substrate or joint filler is to be avoided for proper performance of sealant Provide self-adhesive tape where applicable

C Sealant Backer Rod Compressible rod stock of polyethylene foam, or other flexible permanent durable non-absorptive material as recommended by sealant manufacturer for compatibility with sealant

D Sealant for floor joints Emer-Seal PU 25 elastomeric polyurethane or approved equal

204 Flashings

"Alcor" or sheet zinc or sheet lead, or stainless steel minimum thickness of 0 8mm
Aluminium 'Z sections (20 x 10 x 20)
Aluminium angles (50 x 50)

205 Equipment

Use only the recommended equipment in accordance with material manufacturer's instructions

206 Fabrication

Fabricate all required specific items in accordance with material manufacturer's instructions

PART III EXECUTION

301 Examination

A Acceptance Visit site and inspect conditions comparing conditions to Drawings before delivery of materials to site Notify Architect/Manager of any discrepancy or unsuitability of substrate

Start of work means total acceptance of conditions

1 Cure screeds for minimum of seven (7) days prior to application of membranes
2 Ensure that the surface of concrete to receive adhered membranes is free of curing compounds mortar, honey-combing, surface cavities tying wires or other surface deficiencies and is suitable to receive the membrane

B Access to Roofs Access to the roof whilst installation is in progress is only permitted to those employed in the installation of the roofing

302 Preparation

Prepare surfaces affected by the installation in accordance with material manufacturer's instructions

All slabs to receive membrane shall be clean and free from surface defects All protrusions are to be removed, and any indentations or holes filled in with **WRIMCO "Screedbond"** mortar or equal If a rubber mat test reveals excessive moisture in the slab cross-roll a moisture barrier of **"Screedbond"** /cement slurry at the rate of 20 litres **"Screedbond"** / bag cement per 100 m2

Comply with manufacturer's instructions and Australian Standards Variations are subject to Architect's written order Execute sleeves pockets, flashings, collars etc as instructed by the manufacturer

303 Installation Generally

Comply throughout with the requirements of Australian Standards and manufacturer of materials

304 Membrane Installation

Membrane must be torched to base or substrate When drains are internal, start with **NP180gT4** double selvedge or use special degranulating tool to create a blackened smooth surface as the double selvedge

Double cover with membrane, construction and control joints and properly seal expansion joints

Begin application of the cap sheet at the lower edge of drain Proceed up the slope from the lowest point Position and unroll cap sheet to achieve correct overlap and alignment Re-roll one end a minimum of 3m and adhere membrane to substrate Complete application of remainder of sheet

Apply membrane parallel to direction of slope On slopes of 1 12 or greater, blind nail or mechanically fasten membrane at end or head lap on 150mm centres If a second layer, install parallel to joint but with staggered joints

Areas around drains, posts or other protrusions double cover with membrane and hot tool chamfer at cut and exposed edges or use sealant if granular membrane is used

Seal entire surface under all box gutters with membrane without granules, before installation of stainless steel lining, and finish with final membrane by applying an initial strip of minimum 300mm width then covering edges with membrane and hot tool chamfer at cut and exposed edges Ensure that all finished surfaces are flush and do not permit ponding

Double cover inside and outside corners with membrane by applying an initial strip of minimum 300mm width centred along the axis of the corner Completely cover this strip by the regular application of membrane Use on inside corners a 25mm fillet formed with a latex modified cement mortar or mastic, or detail strip Outside corners are to be free of sharp edges

305 Torching Installation

Heat lower surface of membrane Sufficient heat must be applied to melt the lower surface and provide a flow of bitumen as the roofing membrane is unrolled Care should be taken to ensure that heating is even across the width to avoid skips or voids and a continuous firmly bonded film of bitumen should flow out from lap to ensure a tight seal

Use plain **NP180Gp/p** for all detailing At the end of rolls and where sealing to membrane already laid make sure granules are embedded into the membrane with a trowel All edges that will be covered should be hot tool chamfered so there are no inter-connecting air passages for capillary transfer of water

Matching Granules may be broadcast to cover the excess bitumen flow at seams while it is still molten Brush way the excess after it has been fully cooled

306 Flashings

Lap at least 150mm at junctions, and form over-flashings neatly dressed and finished Seal membranes over aluminium angle upturns set in bed of sealant and fixed to concrete on inside of

recess for all door thresholds, or on top of planter box upstands in cavity brick walls all as detailed Fix Z section aluminium over-flashings to retain protection board and elsewhere as indicated Seal top edge of rail with WRIMCO Vulkem 116 urethane sealant

307 Joint Preparation - Sealants

A Clean joint surfaces immediately before installation of sealant or caulking compound Remove dirt insecure coatings moisture and other substances which could interfere with bond sealant or caulking compound Etch concrete and masonry joint surfaces as recommended by sealant manufacturer Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer

B Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer
Do not allow primer/sealer to spill or migrate into adjoining surfaces

308 Installation of Sealants

Install closed cell polyethylene sealant backer rod for liquid elastomeric sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated Install bond breaker tape where indicated and where required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly

309 Installation of Drainage Cell

To base of all enclosed Planter Boxes and landscaped areas, and immediately following application and curing of membrane, flood test (ref 312) and install protection board to base and sides Place **AUSDRAIN** drainage modules or panels over the entire base with all joints butted neatly Cut modules to size at the perimeter using a hand or circular saw Cover entire surface with a layer of filter fabric and secure all seams with adhesive tape to prevent movement Turn up 50mm at edges and tape to protection board lining

310 Schedule of Specific Waterproofing

A In Ground Concrete Wall - Apply **Maxseal Foundation** to internal face and install pre-slit **Abelflex PE** Expansion Jointing, sealed with **Emer-Seal PU 25,** before pouring adjoining concrete floor slab

B *Concrete Block Retaining Walls – To all vertical faces in contact with filled material, apply* **Modified PLUS NP180** lapped minimum 75mm over concrete slab edge and finishing 50 above finished landscaped level Install protection board to full height, and retain with aluminium Z" section before back filling

C Concrete Block Retaining Wall to Garage Area – Apply **Modified PLUS NP180 with granules** lapped minimum 75mm over concrete slab edge, and finishing 50 above finished footpath level to provide key for render or cementing sandstone facing To remainder of external wall face and top face apply **DUROMASTIC ACS-2** cementitious coating

D Terraces under Tiling on Poly Pads - Apply **Modified PLUS NP180** turned up and sealed onto flashing angle fixed in concrete recess at cavity walls and turned up 75mm at external face of planter box walls To remainder of external planter box wall face and top face apply **DUROMASTIC ACS-2** cementitious coating

E Planter boxes under Landscaping – As for D but install also aluminium "Z section at interface with Cementitious coating, to retain vertical protection board lining

311 Field Quality Control

Arrange for attendance of supplier's representative every alternate day of installation The Architect will inspect

Comply with the Architect's request for testing he may order at the completion of part or all of the installation

312 Testing

Immediately before covering the membrane, make a careful inspection and holes, tears, mis-aligned or wrinkled seams or other application imperfections are to be patched with membrane or sealant Flood test horizontal applications with a minimum 50mm head of water for 24 hours Mark leaks and repair when membrane is dry

313 Cleaning

Thoroughly clean work on completion, including surfaces adjacent to the work of this Section which has been affected Clean out gutters downpipes drains etc

314 Protection

At tanked walls of planter boxes or other vertical surfaces provide extruded polystyrene foam sheeting tight butt jointed and held in place with compatible mastic adhesive, spot torching the membrane, or overflashing until back filled

Protect the installation from damage by suitable means until Practical Completion

315 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

General Supply and install Membranes and associated items to all enclosed wet areas including but not limited to

A Preparation of surfaces to receive membranes
B Membranes under screeds and tiled surfaces
C Flashing angles at doorways
D Flashings sealants etc to above items

102 Related Work

Co-ordinate and co-operate with tradesmen performing

A Penetration through membranes
B Connections to drain outlets
C Interface with other materials

103 Quality Assurance

A Suppliers and installers are required to be widely experienced in the class of work required by this Specification
B Provide to the Architect evidence of current approval by manufacturer or installers of material be installed
C Provide evidence of similar work on major projects Provide names and addresses of work to facilitate inspection and approval of qualifications

104 References

Comply with applicable portions of the following Australian Standards

AS 3740 1994 Waterproofing of wet areas within residential buildings

105 Submissions

A Submissions required prior to installation
  1 Samples of proposed materials
  2 Testing and certifications available from material manufacturer
  3 Product specifications for
    (a) Membrane systems
    (b) Adhesive and primers
    (c) Sealants
B Arrange for a pre-installation conference of related trades Submit the minutes of this meeting to the Architect

106 Delivery, Handling and Storage

Delivery and Storage Materials are to be properly packaged and brought to the site in original, unopened containers with grade type and quality indicated on the labels

107 Warranty

Provide a ten year written guarantee on complete membrane installation including materials and labour

PART II MATERIALS

201 Acceptable Manufacturers

local distributor WRIMCO WATERPROOFING (02)9660 8333
DURAM INDUSTRIES PTY LTD (02) 9624 4077 - MULTITHANE
DUROTECH INDUSTRIES (02) 9603 1177 - DUROMASTIC ACS-2
PARBURY TECHNOLOGIES PTY LTD (02) 4350 5000 - Emer-Seal PU 25

202 Membrane Materials

A FLOOR & COVING MEMBRANE **DURAM MULTITHANE, or equivalent**
B WALL MEMBRANE **DUROMASTIC ACS-2, or equivalent**

203 Joint Sealing Materials

A Joint Primer/Sealer Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed

B Bond Breaker Tape Polyethylene tape as recommended by sealant manufacturer to be applied to sealant-contact surfaces where bond to substrate or joint filler is to be avoided for proper performance of sealant Provide self-adhesive tape where applicable

C Sealant Backer Rod Compressible rod stock of polyethylene foam, or other flexible, permanent durable non-absorptive material as recommended by sealant manufacturer for compatibility with sealant

D Sealant for floor and wall joints **Emer-Seal PU 25,** or equivalent one part elastomeric polyurethane sealant

204 Flashing Angles

Extruded aluminium 1 6mm thick

PART III EXECUTION

301 Examination

A Acceptance Visit site and inspect conditions comparing conditions to Drawings before delivery of materials to site Notify Architect/Manager of any discrepancy or unsuitability of substrate

Start of work means total acceptance of conditions

1 Cure screeds for minimum of seven (7) days prior to application of membranes

2 Ensure that the surface of concrete to receive adhered membranes is free of curing compounds, mortar honey-combing, surface cavities tying wires or other surface deficiencies and is suitable to receive the membrane

B Access to wet areas Access to these areas whilst installation is in progress is only permitted to those employed in the installation of the membrane

302 Joint Preparation - Sealants

A Clean joint surfaces immediately before installation of sealant or caulking compound Remove dirt, insecure coatings, moisture and other substances which could interfere with bond sealant or caulking compound Etch concrete and masonry joint surfaces as recommended by sealant manufacturer Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer

B Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer

Do not allow primer/sealer to spill or migrate into adjoining surfaces

303 Preparation for Membranes

Seal perimeters of all floor-wall junctions in wet areas and corners of shower recess walls to full height and other wall corners up 150mm height with 6mm x 6mm bead of polyurethane sealant
Any gaps 3mm or over should be packed with closed cell backing rod before applying sealant
Install bond breaker tape where indicated and where required by manufacturer s recommendations to ensure that elastomeric sealants will perform properly
All waste outlets including flanges, must be rebated to finish no higher than flush with the substrate
Likewise the substrate should allow water to drain readily via the outlets
Isolate shower floor and entrance with aluminium angle set into polyurethane sealant

304 Installation of Membranes

For Ensuites and Bathrooms, apply elastomeric, moisture curing polyurethane waterproofing membrane to all floors including under baths, and to all perimeters up 150mm
Prime all substrates with **DURAM MULTISEAL**, and apply two coats of **DURAM MULTITHANE** in accordance with manufacturer s instructions
The minimum final dry film thickness must be not less than 1mm
For all shower walls up to 2000mm as well as to all floors and perimeters up 150mm in Garbage Rooms, Laundries, Powder rooms and WC floor areas, prime all substrates with **DUROMASTIC AR or ARW Sealer** and apply two coats of **DUROMASTIC ACS-2** acrylic copolymer membrane, in accordance with manufacturer s instructions

Ensure that the membrane is turned down in to floor waste or well sealed around the leak control flange and other penetrations
Ensure flashing angles are properly sealed across doorways

305 Protection

A General Do not apply at above 35 degrees or below 6 degrees C
B Prevent traffic over freshly placed granolithic finish for 48 hours
C Protect membranes from traffic for three days and cure for ten days

306 Testing

Block drains and flood test for minimum 24 hours to check for leaks

307 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL100

101 Scope

Fabricate, supply and install timber window frames and sashes and glazing including but not limited to

[Frames
Sashes
Glazing (Double Glazing where marked)
Hardware
Flashing
Frameless glass window assemblies
Fly screens

[If relevant list materials to be supplied but not installed or installed but not supplied

102 Related Work

Co-ordinate and co-operate with the following trades
Wall construction
Wall finishes
Painting

103 Quality Assurance

[Suppliers and installers are required to be widely experienced in the class of work required by the Specification
Provide details of proposed window Manufacturers for approval

104 References

Comply with applicable portions of the following Australian Standards

AS 1288	1994	Glass in buildings - Selection and installation *Amended 1997*
AS 2047	1999	Windows in buildings - Selection and installation
		Amdment1 2001
		Amdment2 2001
AS3959	1999	Construction of buildings in bushfire prone areas Level 3

105 Submissions

[Provide manufacturers data sheets for review by Architect before ordering Provide samples of materials timber, flyscreen flashings etc for review by Architect.

106 Delivery, Handling and Storage

Deliver shortly before installation Minimise damage to components during delivery and handling
Install directly in place if possible otherwise store vertically under cover

107 Warranty

[Provide to the Proprietor a warranty covering the whole of the work for a period of five years after Practical Completion This will cover security of installation, flashings water penetration hardware operation

PART II MATERIALS200

LIST MANUFACTURERS WHO MAY QUOTE FOR THE WORK

201 Window and Door Materials

Comply with AS 2047

A Window frames Western Red Cedar Timber minimum finished thickness 45mm with 100mm top bottom & sides section sanded smooth for high quality paint finish

B External Glazed Doors Western Red Cedar Timber minimum finished thickness 45mm with 200 bottom section and 100 top & sides, sanded smooth for high quality paint finish

C Flashing material bituminous coated aluminium ALCOR or equal

D Hardware generally satin chrome
Types All sliding doors to have heavy duty brass or stainless steel ball bearing rollers to suit door weights Bifold doors to use CENTOR- concealed floor chanel,heavy duty track with head brush seals and continuous bottom guide channel All other hardware to be as selected or alternatives provided for approval

E Glass and glazing sandblasted or acid etched obscure with clear border to detail, in areas as noted, otherwise clear float, thickness to Code requirements safety glass where required by Code All glazing to have solar control and insulation capacity equivalent to Pilkington – Comfort Plus" (Pilkington Fire rated glazing where noted)

F Frameless glass double hung windows (double glazed where marked)
Framing Aluminium in powdercoated finish to match window colour
Glass toughened safety glass with all exposed edges rounded and polished All glazing to have solar control and insulation capacity equivalent to 'Pilkington" – Comfort Plus'
Hardware clear glass block lifting handles, and satin chrome lock cylinder to side frame
Manufacturer ANEETA or equal

0 G Weather Seals – Door Bottom – concealed fit brush strip seal- Raven or equivalent
Door Frame and in rebated stiles - silicon rubber seal equivalent to Raven

H Fixed stainless steel or bronze mesh ember screens to windows as indicated

PART III EXECUTION300

301 Examination

Visit the site and inspect conditions Check dimensions and compare aspects with the Drawings and Specification Resolve differences before ordering materials or starting work.
Start of work means total acceptance of conditions

302 Preparation for Installation

Deliver anchoring devices and similar inserts required to be built into structures well in advance of the fixing of fittings and provide full details when they are to fixed by others
Prior to installation examine shop-fabricated work for completeness and remedy deficiencies Include back priming and the removal of packing

303 Installation

Install windows in accordance with AS 2047 AS3959 and as detailed on drawings
Place flashings correctly to eliminate entry of water and wind Secure frames in place
Install cover moulds as detailed between outside of frames and surrounding structure
Bifold doors to have continuous bottom guide channel securely fixed to concrete, finished flush in tiled sill with 30mm dia concealed drainage by non-corrosive piping to nearest stormwater pipe or outlet
Adjust sash balances and guides to ensure that double hung windows function smoothly and with minimum of effort
Repair any material damaged before or during installation

304 Glazing

Secure glass in accordance with glass manufacturer's recommendations and AS 1288 Allow for thermal expansion of glass All toughened Glass

305 Install other Items

A. Sun control material in accordance with manufacturer's instructions
B Ember screens as detailed or to manufacturers instructions
C Hardware as detailed and to manufacturer's instructions

306 Adjustments, Cleaning, Finishing and Protection

A. Finish the work specified in this Section and remedy anything not finished at the shop or other stage prior to completion
B Adjust sashes to achieve a uniform appearance
C Lubricate and clean hardware making final adjustments needed for proper operation
Remove handling marks from visible joinery surfaces
D Protection Do everything needed to ensure that work is without damage or deterioration at Practical Completion

307 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

The work of this Section includes but is not limited to the supply and installation of cement render work on new concrete and/or masonry surfaces

102 Related Work

Co-ordinate and co-operate with the following trades
Masonry
Ceilings
Electrical wiring
Door Frames

103 Quality Assurance

A Supply and installation of render base and surface treatment is to be performed by an approved Sub-Contractor known for reliability, quality of work and performance

B At a location and time to be selected by the Architect, construct a complete prototypical installation approximately 3m square Include elements provided under this Section and finish in every respect On approval by the Architect, the prototype will become the standard for the remaining work, and will remain as part of the work

104 References

Comply with applicable portions of the following Australian Standards

AS 1672		Limes and limestones
		1672 1 1997 Limes for building
AS 2592	1983	Gypsum plaster for building purposes
AS 3700	2001	Masonry structures
AS 3972	1997	Portland and blended cements

"Cement Rendering" technical guide published by Cement and Concrete Association of Australia Obtainable from the State Regional Office of the C C A Each office can provide document applicable to the area in which the project is to be built Consult CACA, Tel (03) 9825 0200 for locations of its state offices or www concrete net au

105 Delivery, Handling and Storage

General Deliver manufactured materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand
Protect materials from dampness Store off the ground or slab, under cover and away from wet walls and other damp conditions

106 Warranty

On completion of the work provide a warranty through the Builder to the Proprietor stating that the work is secure against defects including delamination from substrate, "blowing", "grinning", and 'crazing" for the period of fifteen years from the date of Practical Completion

PART II MATERIALS

201 Render Materials

A Cement Grey Portland Conform to AS 3972
B Sand Clean, sharp washed free from loam, organic matter or soluble impurities
C Lime (if required) Hydrated lime
D No additives may be used without architect s written approval

202 Accessories

Supplied by Rondo Building Services Pty Ltd External Corner Bead R01 R03 or R04
Bullnose External Corner R06
Stopping Bead, R11, R12 or R13
Expansion Joints, R45
Where render is applied over stud walls fix metal lath to manufacturer's instructions
Lathing Galvanised expanded metal lathing, Lysaght, PL25 or other approved

203 Mixes
Render over masonry and concrete substrates not greater than 6 parts sand, 1 part lime, 1 part cement by volume Machine mix materials

PART III EXECUTION

301 Examination
Acceptance Notify Architect of discrepancy or unsuitability of substrate
Start of work means total acceptance of conditions

302 Preparation
Remove foreign material, dust dirt, oil, nails and other material which could reduce bonding of render to the surface

303 Application of Render
Where render is applied over very smooth masonry first apply two separate coats of "Cemstik", "Bondcrete" or "Bondseal" If in doubt check with Architect
Alternatively bag on to surface a mix of 1 part cement and 1 part sand
Nominal thickness
A Single coat 15mm of Render
B Two coats base coat 8-10mm thick
Comb in two directions, and allow to dry over 5 days minimum
Finish coat a fine even exposed sand finish 6-8mm thick
Where instructed by Architect damp roll or fine spray and lightly acid etch before thoroughly washing down
Use material within 30 minutes of the addition of the water Beyond this time discard the mix Do not re-temper

304 Movement Control Joints
A Locate movement control joints to coincide with junction of differing wall materials (reinforced concrete/blockwork), at maximum 6 metre centres
B Form joints continuously to extend neatly and clearly up to adjacent abutting surfaces and form with approved mastic sealant and an approved fully compressible joint filler or similar

305 Internal Corners
Finish square internal (re-entrant) vertical corners of walls and columns

306 External Corners
Finish external vertical corners slightly rounded to approximately 4mm radius

307 Extent of Rendering
Extend rendering into recesses jambs, returns behind skirtings and architraves

308 Covering Concealed Chases
Before rendering form covers over chases in walls and columns for pipes conduits, cables etc with galvanised expanded metal lathing lapped 150mm over recess, fixed with galvanised nails or power driven fasteners and washers, spaced at maximum 300mm centres Fix lathing before first coat of render

309 V-Joints
Form V-Joints in render where steel door frames are flush with render also where insitu concrete beams abut brickwork or blockwork and where concrete or masonry walls abut plasterboard or timber substrate

310 Cleaning
Clean up and remove from site excess materials and debris resulting from operations Clean and restore to original condition adjacent materials affected by the work

311 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply and install a complete installation of plasterboard including but not limited to
Plasterboard wall lining
Lining of concrete and masonry walls
Lining of steel stud walls
Lining with water-resistant plasterboard
Ceilings drop walls bulkheads
Fire-rated plasterboard walls/ceilings
Cornices

102 Related Work

Co-ordinate and co-operate with the following trades

Masonry Walls	Electrical
Stud Walls	Mechanical

103 References

Comply with applicable portions of the following Australian Standards

AS/NZS 2589		Gypsum linings in residential and light commercial construction - Application and finishing
		2589 1 1997 Gypsum plasterboard
		2589 2 1997 Fibre reinforced gypsum plaster
AS 2590	1983	Glass fibre reinforced gypsum plasterboard
AS 2753	1985	Adhesives - Mastic - For bonding gypsum plaster linings to wood and metal framing members

104 *Delivery, Handling and Storage*

Deliver manufactured materials in bundles and packages bearing the name of the manufacturer, and the brand Handle with care Remove damaged materials from the site Protect stored materials from damage and damp, or materials which may cause deterioration

105 Warranty

Provide Warranty covering the work against defective materials and workmanship for a period of five (5) years from the date of Practical Completion The Warranty includes a statement that the whole of the work has been carried out in accordance with relevant Australian Standards and Codes and manufacturer's instructions in effect at the time of installation

PART II MATERIALS

201 Acceptable Manufacturers

Plasterboard	**CSR, BORAL**
Plaster Cornices	**BAILEYS**

202 Materials

Supply materials in accordance with material supplier's recommendations for each application

PART III EXECUTION

301 Examination

Acceptance Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site Rectify any discrepancy or unsuitability of substrate
Start of work means total acceptance of conditions

302 Preparation

A Co-ordinate with and ensure preparatory work by other trades is done prior to commencement of work, failure to do so will involve removal of plasterboard and immediate rectification

B Arrange for provision of additional stud, nogging, trimmed openings, boxed studs fixing grounds etc required for satisfactory execution of the work of this trade including penetrations through plasterboard for services Co-operate in installation of frames duct openings etc

C Space Enclosure Do not install materials until space is enclosed and weatherproof and until wet-work in space is completed and nominally dry

303 Layout and Tolerances

A Check dimensions of areas and surfaces to which material is applied before installation

B Measure each area and establish layout pattern

C All finished work is to be within + 2mm of the sizes shown on the relevant Drawings

304 Installation - General

A Comply with manufacturer's installation instructions Anchor and fasten materials and components to comply with ratings and performance requirements and to comply with governing local regulations Comply with appropriate Australian Standard

B Take care of and protect surrounding work, including other finishes, equipment and components during installation Provide protective covering where necessary

305 *Installation Particulars*

A **Suspended Ceiling Finishes**
Allow generally for all rooms except stores and service areas, to have suspended ceilings and bulkheads at all changes of levels lined in plasterboard of appropriate thickness All joints to be set and sanded smooth for selected paint finish Wet areas shall be lined with moisture resistant plasterboard

B **Shadow Lines**
Allow generally for all set plaster, and suspended plasterboard ceilings except where noted otherwise to have pre-formed zinc coated metal shadow line finish to walls All corner joints to be mitred, then set and sanded smooth for selected paint finish (refer 15 - Painting)

306 Metal Ceiling & Bulkhead Framing

Suspend metal furring channels from concrete slabs at 600 centres maximum to levels indicated Align with underside of adjacent concrete surface to allow for glue fixing of plasterboard where necessary Frame up for bulkheads as shown, including around air-conditioning ductwork

307 Ceiling Access Panels

Supply and install proprietary flush fitting ceiling access panels to all items requiring permanent access, including fan coil units, concealed electrical items hydraulic access points, etc Panels to be fabricated to non-standard specific sizes as required, and have gasket seals and perforated angle surround to enable recessed set plaster concealed fixing edge detail Size and location of access panels to be confirmed with Architect before installation

308 Finishing Details

General Apply treatment at board joints (both directions), flanges of trim accessories penetration, fasteners heads surface defects and elsewhere as required to prepare work for decoration Pre-fill open joints and rounded or bevelled edges, using type of compound recommended by manufacturer

A Apply fibreglass joint tape at joints between boards where a trim accessory is indicated, or where extra strength is required

B At ceiling junctions where no cornice is specified finish edges with perforated casing bead or shadow line section

309 Protection

Protect finished work Make good damage in every respect at no additional cost to the Proprietor, and without delay to job progress

310 *Cleaning*

A Adjust and Clean Clean exposed surfaces including trim edge moldings and comply with manufacturer's instructions for cleaning and touch-up of minor finish damage Remove and

replace work which cannot be successfully cleaned and repaired to permanently eliminate damage

B Remove spatterings and droppings resulting from work Remove daily surplus materials and rubbish from the work area

C Leave floors broom clean at completion

311 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply and install Ceramic Tile work including but not limited to

A Preparation of surfaces before tiling or bedding
B Bedding screeds where required
C Wall tile
D Floor tile
E Cleaning of finished tiled surfaces

102 Related Work

Co-ordinate and co-operate with the following trades
Wall Construction
Floor Construction

103 Quality Assurance

A Qualifications Tiling Sub-contractor to submit to Architect evidence of reliability in quality of work and performance
B Samples Provide samples of tiles specified, not less than 4 units of each
C Sample Panel For each tile type floor and wall construct a sample panel 1 metre square When approved by the Architect this sample becomes the standard for the balance of the work and remain as part of the completed work

104 References

A Comply with applicable portions of the following Australian Standards

AS 2358	1990	Adhesives - For fixing ceramic tiles
AS/NZS 3661 2		Slip resistance of pedestrian surfaces – Guide to the reduction of slip hazards
AS 3740	2004	Waterproofing of wet areas within residential buildings
AS 3958		Ceramic tiles
		3958 1 1991 Guide to the installation of ceramic tiles
		3958 2 1992 Guide to the selection of a ceramic tiling system
AS 3972	1997	Portland and blended cement

B SAA HB52 2000 "The Bathroom Book"
C Contact www ardexaustralia com for technical advice regarding waterproofing matters & technique

105 Submissions

Submissions Required Prior to Installation Product specifications for
Adhesives, Primers Prepared Grouts Moisture Resisting Admixtures

106 Delivery, Handling and Storage

Deliver to the site in original, unopened containers with grade, type and quality indicated on the labels Provide secure and dry storage

107 Warranty

Provide a warranty covering defects in materials and installation for a period of five years from the date of Practical Completion

PART II MATERIALS

201 Screed Materials for Masonry Walls, Concrete Floors

A Cement Portland Cement, comply with AS 3972, cement type A
B Sand Clean washed sharp sieved and graded complying with the following limits
Sand Grade No 4 (4 75mm)
Percent Passing Sieve 100%
Sand Grade No 8 (2 36mm)
Percent Passing Sieve 95-100%
Sand Grade No 100 (150 microns)
Percent Passing Sieve 25% max

Sand Grade No 200 (75 microns)
Percent Passing Sieve 10% max
Fineness modulus 1 6 to 2 5% Water demand, ratio by weight 0 65% maximum

C Fine Sand (for jointing) As above except that 100% is to pass a No 100 (150 microns) sieve

D Aggregate for Screeds graded as follows
Passing 4 75mm sieve - 80%
Passing 6 00mm sieve - 90%
Passing 8 00mm sieve - 100%

E Water Clean drinking quality

F Mesh Galvanised Steel welded wire fabric minimum 2 5mm diameter wires at 100mm centres each way

202 Adhesives

A Exterior/Wet Area Adhesives Cement-based ceramic tile adhesive complying with AS 2358

B Interior/Dry Area Adhesives Organic based adhesive complying with AS 2358

203 Underlay and Backing Boards

A Acoustic Underlay to all Upper Floor Living Kitchen Corridor and Wet areas REGUPOL or equivalent

B Ceramic Tile Wall-backing for stud walls as recommended by tile supplier

C Fastenings Use fastenings supplied by material manufacturers in each case

204 Tile

Supply submit proposed Suppliers names for approval

205 Schedule of Tile Finishes

Refer Finishes Schedule and Drawings

206 Grout

Prepared Grout Inorganic Portland cement integrated ready-to-use dry-curing grout Colours to Architect's selection

Supply Waterproof grout for wet area tiling

207 Expansion Joints

Silicone rubber, as recommended by manufacturer Colour to Architects selection

PART III EXECUTION

301 Examination

Visit site and inspect conditions, comparing conditions to Drawings, before delivery of materials to site

Rectify any discrepancy or unsuitability of substrate

Start of work means total acceptance of conditions

302 Conditions of Installation

A Install backing boards or panels in accordance with manufacturer's precise instructions

B Allow cement-rendered surfaces to dry out at least 7 days and preferably 14 days before tiling Longer curing times are required if recommended by adhesives' manufacturers

C Rectify substrate so that when checked with a 2m straightedge gap under the straightedge does not exceed 6mm

D Allow new concrete to dry out for at least 4 weeks before rendering or direct fixing of tiles Wall screeds uniform in plane and lightly combed Floor screeds broom finished

303 Setting Out

A As far as possible, set out work so that no tile less than half size occurs Align joints in floor tile at right angles to each other and straight with walls to conform to patterns selected Verify locations of equipment before installing tile Co-ordinate with plumbing and other trades Fully tile surfaces under surface-mounted items

B Expansion Joints
Set out panels of tiling so that tiles may expand or contract to and from corners of tiled walls and floors Allow for expansion in each corner of 5mm minimum Fill expansion joints with silicone rubber

C Control Joints
Provide control joint
1 At junctions of dissimilar wall construction
2 In walls no more than 2 5 apart
3 At junctions of wall and floor in wet areas

304 Bedding Mixing

A *Tile fixing mortar is to be adequately cohesive and water retentive but not richer than* 1 3 nor leaner than 1 4 cement/sand by volume
Within these limits the choice of the precise proportions is governed by the need to produce a mortar of the required properties with the minimum water content These proportions will depend on the sand in use and is found by practical trial before tile fixing starts

B Once the proportions are established make every attempt to minimise random variations Batch by weight wherever possible Do not batch with shovels

C The mixing of mortars by a suitable machine is to be preferred whenever it is practicable

D Volume batching Base batching on multiples of a whole bag of cement (50kg approximating 0 035m3 or 35 litres) In such cases measure by volume using correctly made gauge boxes or other suitable containers of fixed measurable volume This method allows water addition to be checked and thus permits approximate mix proportions to be established and maintained

E Where mixing by machine is not possible mortars may be mixed on a clean non-absorbent surface using clean hand tools Whatever method of mixing is used, blend the materials thoroughly in the dry state before water is added Continue mixing until the batch has a uniform consistency

F No water should be added once mixing is complete Discard mortar which is unused within 2 hours of adding the mixing water

305 Bedding Methods

A Portland Cement Bedding Semi-Dry Mix Method
1 Mix One (1) part cement to four (4) parts of sand by volume mixed dry with only sufficient water added to make a crumbly consistency which retains its shape when squeezed in the hand It is important to ensure complete mixing of the cement and sand
2 Before laying the mix establish finished floor levels by means of dots Spread roughly to a thickness slightly greater than that required for the actual bed
Thoroughly compact and draw-off to the required level Lay only sufficient bedding *mix for one man to deal with satisfactorily in one operation*
3 Pour a slurry consisting of one (1) part cement to one (1) part sand by volume with sufficient water to make it slightly fluid over the bedding and spread with a trowel until it is about 3mm thick
Place tiles, which preferably are dry in position and firmly beaten into the bedding
Form joints of at least 2mm and regulating should be done at this time
Wash off if necessary after the joints have set thoroughly
4 Minimum bedding thickness 25mm

B Bedding with Adhesives (Walls Only)
1 Apply adhesive to a thin bed or thick bed according to site conditions
(a) Apply thin bed adhesives when the background is true to within 3mm when tested with a 2 metre straightedge at thickness not less than 1 5mm and not more than 3mm Apply with a notched trowel
(b) Apply thick bed adhesives when deviations up to 6mm over a 2 metre length are present in the background or when applying tiles having deep keys or ribs on their backs Thick bed adhesives should be used at thicknesses not less than 3mm and not exceeding 12mm Apply with either 10 x 10 x 10mm notched trowel solid bed or buttering method
2 Application Methods
(a) Notched Trowel Method Apply the adhesive to the background as a screed then form ribs by combing it with a notched trowel of the type

recommended for the particular application Do not apply adhesive in areas larger than one square metre at a time

(b) Solid Bed Method Apply the adhesive to the background as a screed and bring it to a true surface, working in one square metre area at a time

(c) Buttering Method Spread the adhesive evenly over the back of the tile to a thickness slightly greater than the final bed thickness required so that when the tile is pressed or tapped firmly into position the correct thickness is achieved and the tile is solidly bedded over its entire surface

3 Apply dry tiles immediately into the adhesive before it skins

4 Press the first tile firmly into position and then remove it to check that complete contact is being made with the adhesive Make occasional similar checks throughout the tiling work The whole of the back of the tile is to be in good contact with the adhesive Do not allow voids to occur beneath tiles

5 Remove surplus adhesive remaining on the face of the tile or in the tile joints after fixing before it skins

6 Form joints straight and constant in width Under no circumstances fix tiles with tight joints

7 Allow tiles to set for a minimum 24 hours before grouting and protect from weather water penetration, etc during this period

8 Expansion Joints Refer Clause 303 B, complying with AS 3958 1 See Clause below

C Cement based Adhesive method for extruded, quarry or terracotta floor tiles
Secure to a prepared concrete surface with cement based adhesive 10mm thick with a 10mm notched trowel Comply with manufacturer's current instructions

306 Installation - General

A	Wall tiling	Comply with the recommendations of AS 3958 1 and AS 3740
B	Floor tiling	Comply with the recommendations of AS 3958 1 and AS/NZS 3661
C	Adhesives	Comply with AS 2358 and recommendations of adhesive manufacturer
D	Sealing	Where tiles are cut around penetrations for taps and outlets seal thoroughly with silicone rubber to prevent water entry behind tiles

307 Tolerances and Cleaning

A General Install tiles in true planes so that when checked with a 2m straightedge, gap under the straightedge does not exceed 3mm In sloped floor tiling this tolerance does not apply across intersections of fall planes Adjust tiles within 10 minutes of fixing

B Cleaning Cleaned down using a damp cloth before cement smears and surplus mortar begin to harden on the surface or in the joint spaces care being taken to avoid disturbance of the tiles during the setting of the bedding

C Lighting Whenever possible the lighting at the time of applying the bedded finish is not to be appreciably different from the ultimate permanent lighting

308 *Grouting*

A Except as otherwise required do not commence grouting for at least 24 hours after placing of tile Follow specific instructions of materials manufacturer

B Grout Mix

1 General use, except as noted below Apply an approved pigmented prepared grout mix, one (1) part Portland cement to one (1) part fine dry sand by volume mixed to a paste consistency with the minimum of water, too wet a mix may result in the joint filling cracking or drying out

2 Floors Prepared grout acid resistive

3 Walls Epoxy-based mortar grout mildew resistant

4 Colours as selected by the Architect

C Grouting and Curing

1 Apply the grouting mix to as large an area as can be worked before hardening commences Apply with a squeegee working back and forth over the area until the joints are completely filled Remove surplus grout from the tiles with the aid of a damp not wet cloth and the joints then tooled After the grouting has dried final polish using a clean, dry cloth

2 Remove surplus grout from the floor surface, on no account use sawdust for this purpose as there is a danger that sawdust entering moist joint surfaces may break

down their strength and cause them to become porous

3 In dry weather grout joints after maintaining damp condition for three days by sponging down, fog-spraying or other methods Allow floors to set 48 hours before permitting ordinary foot traffic

309 Protection

Prevent walking on or contact with floor or wall tiles for a minimum of seven days During that period cover floor tiles

310 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply labour materials and equipment required for supply, delivery storage installation and testing for the complete carpet installation

102 Related Work

Co-ordinate and co-operate with the following trades
Installation of floors
Joinery
Preparation of surfaces under and adjacent to floors to receive carpet

103 Quality Assurance

The whole of the work is to be performed by thoroughly experienced and skilled tradesmen familiar with projects of this nature under the direction of a similarly experienced Foreman

104 References

Comply with applicable portions of the following Australian Standards

AS 1385	1985	*Textile floor coverings - Metric units and commercial tolerances for measurement*
AS/NZS 2455		Textile floor coverings - Installation practice
		2455 1 1995 General
		This standard provides full instructions of pre-installation requirements and installation methods
		2455 2 1996 Carpet tiles
AS 4288	2003	Soft underlays for textile floor coverings

Maintain a copy of AS/NZS 2455 1 1995 General - at the Project Site until Completion

105 Submissions

Submit the following data and obtain approval from the Architect before ordering materials

A List of recent major projects with contact names and telephone numbers
B Samples of carpet types and underfelt, 900 x 900 samples of each
C Base the tender price on 3660mm carpet
D Confirmation of acceptance of compliance with the requirements of the Builder in relation to the time schedule for supply and laying
E Schedule of laying rates per lineal metre
This schedule is binding upon the Contractor and forms the basis on which additions omissions and varied works may be carried out
These rates include supply and installation of underlay and accessories making and laying and allowances for profit, overhead and administration costs
F Static Properties Provide test certificates from a recognised authority with the tender to confirm a reading of 2 5 kilovolts or less, when tested at 23^{O}C and 25% relative humidity
F Certification by manufacturer that materials comply with this Specification

106 Delivery, Handling and Storage

Deliver manufactured materials in the original packages containers, or bundles bearing the name of the manufacturer
Protect materials from dampness Store off the ground or slab, under cover and away from wet walls and other damp conditions, in an approved location in the building

107 Warranty

Provide a written warranty stating that materials supplied and installed under this contract will remain in good condition, secure against faulty workmanship and/or defective materials for a period of seven years from date of Practical Completion

PART II MATERIALS

201 Manufacturers

Approved manufacturers of Commercial quality

202 Material

A Underlay
Comply with AS/NZS 2455 1

B Carpet Fixings
Comply with AS/NZS 2455 1 and is to be gripper type of an architectural standard
Allow for installation of fixings at perimeters and around columns etc not otherwise specified

C Metal Finishing Bar
Heavy duty aluminium angle
Allow for finishing bars to be provided at doorways and junctions with other materials, or fix carpet edge against raised vertical aluminium or stainless steel strip

D Carpet
Carpet qualities similar to those specified may be submitted and if deemed by the Architect to be equivalent, may be considered

E Adhesives AS/NZS 2455 1 Direct stick and dual fix

203 Testing Carpet

A The Architect will select the carpet testing authority and supervise the selection of samples for testing The Contractor is required to pay for carpet testing

B Special Runs of Carpet
Before manufacture of carpet arrange for testing of materials at fibre blending stage and the various tests to completion of manufactured carpet
Submit test results immediately to the Architect

C Stock Carpet
Make available to the Architect for testing, samples in quantities suitable for applicable tests and colour confirmation

204 Carpet Colour Sample

Before commencing the production run of the carpet, supply three (3) 200 x 200mm samples of the selected colour(s) of carpet Obtain Architect s written approval before manufacture

205 Laying Diagrams

Prepare Laying diagrams showing locations and directions of seams and cross joints Submit to obtain approval from the Architect before making up carpet

206 Inspection Before Making

Inspect carpet before starting make up or laying carpet to ensure that

A The width is within the specified tolerances

B Colour variations are within the specified tolerances

C The carpet is free from colour streaks, oil or grease spots etc

D The carpet generally conforms to the Specification by written substantiation of tests

Reject carpet not conforming to the required standards

PART III EXECUTION

301 Examination

Acceptance Visit site and inspect conditions comparing conditions to Drawings before delivery of materials to site Notify Architect of discrepancy or unsuitability of substrate Comply with appropriate Clauses of AS/NZS 2455 1
Start of work means total acceptance of conditions

302 Preparation

Comply with referenced standards and manufacturer's recommendations regarding environmental conditions
Comply with AS/NZS 2455 1 Comply with Appendix B to ensure moisture content of concrete does not exceed the stated limit
Space Enclosure Do not install material until space is enclosed and weather-proof, and until wet-work in space is completed and nominally dry, and until ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy

Repair by approved means imperfection of the floor surface which might impair the finished carpeted surfaces
Broom clean or vacuum clean surfaces upon which carpet is to be laid
On completion of cleaning obtain Architect's approval of surface and follow such standard as he may determine for preparation throughout the Project

303 Carpet Fixings
Secure to the sub-floor in accordance with the manufacturer's instructions and the recommendations of the Standard

304 Laying Underlay
Comply with AS/NZS 2455 1
Cover the whole area to be carpeted

305 Stretching Carpet
Tightly stretch carpet between fixings, using power stretchers where necessary Maintain seams in straight lines
Comply with AS/NZS 2455 1

306 Carpet Seams
Comply with AS/NZS 2455 1

307 Cleaning and Protection
Comply with AS/NZS 2455 1
On completion of laying each section of carpet, remove dirt, threads scraps of left-over carpet, etc , and vacuum the surface clean and free from dust, etc
After inspection by the Architect cover the carpet in each section with an approved protective covering
Maintain the cover in good order and condition and remove the same and finally clean the carpet at Practical Completion

308 Spare Carpet
Provide spare carpet of each type laid
Deliver to the site wrapped with secure protection
Do not deliver to the site until directed by the Architect Place in its final storage location

309 Completion
Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply labour and materials services and equipment necessary for the preparation application and finishing of painting and staining as indicated on Drawings schedules and as specified herein to internal and external surfaces of building as follows

All walls, ceilings cornices architraves skirtings joinery items etc

Refer Schedule of Finishes

Consult with the Architect with regard to requirements of other Sections of the Specification which require painting, and include as part of the work of this Section the appropriate preparation, painting, and finish required to complete the installation

102 Related Work

Co-ordinate and co-operate with the following trades

A Substrates to be painted
B Cleaning and finishing
C Scaffolding

103 Quality Assurance

A Compatibility of Shop and Field Paints
Determine that the materials specified in the Schedule of Finishes are compatible with shop coats Failure to do so will be construed as accepting the paints specified Contractor is to correct, at his own expense defects in his work resulting from the use of such materials

B Test Samples
1 Prepare test samples for painting types and typical locations where determined by the Architect Do not commence painting of the substrate type until the sample is approved by the Architect Apply samples in conditions approximating as closely as possible the lighting conditions of the finished work
2 Test Samples include the suitable preparation of substrates
3 After approval Test Samples are to be the standard for quality control of the completion of work of same type

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 2311 2000 Guide to the painting of buildings (NB Maintain this document at the project site by the Contractor as a Controlling General Reference)
AS/NZS 2312 2002 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings

105 Submissions

Submit the following materials

A Product literature on proposed painting systems
B Colour samples for approved painting materials Identify samples with
1 Manufacturer's colour code and colour name (if any)
2 Match to Schedule Colour Code and name
C Samples are not to be less than 200 x 200mm and are to be of the same gloss level as the Scheduled colour

106 Delivery, Handling and Storage

A Store materials in designated spaces in a manner which meets the requirements of applicable codes and fire regulations When not in use keep such spaces locked and inaccessible to those not employed under this Section Provide each space with a fire extinguisher of carbon dioxide or dry chemical type bearing a tag of recent inspection
B Bring materials to the building and store in manufacturer's original sealed containers bearing the manufacturer s standard label, indicating type and colour Deliver materials in sufficient quantities in advance of the time needed in order that work will not be delayed in any way

107 Project Conditions

Temperature Comply with the requirements of Clause 6 3 of "AS 2311 The painting of buildings' and of paint manufacturers with regard to both ambient temperature and relative humidity

108 Warranty

Provide a written warranty stating that preparation of surfaces materials and material application installed under this contract will show no deterioration and remain in good condition for a period of seven years from date of Practical Completion

PART II MATERIALS

201 Materials

General Where manufacturer makes more than one grade of any material specified, use the highest grade of each type whether or not the material is mentioned by trade name in these Specifications

Use Paints and finishes used for the project may be manufactured by one or more of the following manufacturers

Dulux
Pascol
Porters
Feast Watson
Sikkens
Cabots

Other products may be approved by Architect Apply to Architect for approval of alternatives

Provide materials necessary for preparation of surfaces and for application of paint finishes

202 Schedules

A A Finishes Schedule is included in this Specification

B The Architect will prepare a final Schedule of Colours in sufficient time before commencement of work

203 Paint Types

Australian standard *AS 2311 "The painting of buildings" contains Tables relating to available paint types and their uses

204 Priming Materials (for paint finishes)

Colours of priming coats (and body coats where specified) are to be lighter than those of finish coat

PART III EXECUTION

301 Examination

Inspect surfaces and determine that they are in proper condition to receive the work to be performed under this Section Refer 302 A, below

The starting of work under this Section will be taken to mean acceptance of such surfaces as being satisfactory and defects in work resulting from accepting poor surfaces are to be corrected at no cost to the Proprietor

Refer AS 2311 Appendix C

302 Preparation

A General Prepared to a standard not less than that described under AS 2311 Section 3 Preparation of Un-Painted Surfaces inclusive and other Clauses of Australian Standards referenced therein

This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein

B Broom clean floor surfaces before painting Remove dust, dirt plaster grease and other extraneous matter affecting the finish work

C Putty-stop or plug nail holes and cracks on both exterior and interior work as required Natural or stained wood finishes are to have putty coloured to match Putty wood after prime coat or sealer coat has been applied

D Clean bare metal surfaces of mill scale, rust, grease, oil, dirt, or other foreign matter then properly washed with spirit or other approved cleaning agents After cleaning, etch pickle, prime, or otherwise prepare, as recommended by the paint manufacturer

E Remove blisters or other imperfections in previous coats caused by foreign substances or paint skins from painted surfaces before the subsequent coat is applied

F Rub down wood and metal surfaces before finishing and between coats with No 00 and finer sandpaper or steel wool leaving a perfectly clean surface Sand smooth-finished surfaces before finishing and between coats as required to smooth out rough areas and to assure a smooth even finish Surfaces to receive paint are to be smooth and free of sandpaper scratches mill-marks and other imperfections

G Remove hardware, accessories, plates lighting fixtures and similar items in place prior to painting and re-position upon completion of each space, or protect as otherwise directed by the Architect

H Thoroughly stir materials in containers before application, unless otherwise directed by the manufacturer of the paint used to ensure uniformity of colour and mass Strain out paint skins or other materials which would cause lumps or roughness Thin only as recommended by the manufacturer

303 Protection

Furnish and lay suitable drop cloths in areas where painting is being done to protect floors and other surfaces from damage during the work

304 Application

A General Execute work of this Section in strict compliance with paint manufacturer's recommendations and with the provisions of AS 2311, Section 6 Paint Application, inclusive This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein In the event of conflict between manufacturer's recommendations and the provisions of AS 2311, manufacturer's recommendations govern

B Maintenance or Repainting
Execute work of this Section in strict compliance with paint manufacturer's recommendations, and with the provisions of AS 2311 Section 7 Maintenance of Painted Surfaces on inclusive and Section 8 Maintenance Painting Systems This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein In the event of conflict between manufacturer s recommendations and the provisions of AS 2311, manufacturer's recommendations govern

305 Coating procedure

01 Semi Gloss Enamel / on internal and external timber
1st coat - Oil Based Undercoat
2nd coat - Super Enamel Semi Gloss
3rd coat - Super Enamel Semi Gloss

02 Low Sheen Acrylic on internal render
1st coat - Sealer Undercoat
2nd coat - Lo Sheen Wash-n-wear acrylic
3rd coat - Lo Sheen Wash-n-wear acrylic

03 Flat Acrylic on internal plasterboard ceilings & bulkheads
(note cornices not same colour as ceiling
1st coat - Sealer Undercoat
2nd coat - Super Flat Acrylic
3rd coat - Super Flat Acrylic

04 2 Part Epoxy paint / on external metalwork
1st coat - DULUX 2 pack Primer (DURABILD STD)
2nd coat - DULUX 2 pack Full Gloss (WEATHERMAX HBR)
3rd coat - DULUX 2 pack Full Gloss (WEATHERMAX HBR)

05 PORTERS Mineral Paint on external render
(note rendered architraves not same colour as walls)
1st coat - PORTERS Primer/sealer
2nd coat - PORTERS Mineral Paint
3rd coat - PORTERS Mineral Paint

306 Cleaning

At completion of work in each area remove paint spots oil and stain from adjacent surfaces including finish hardware

Replace hardware previously removed

307 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect Leave spare amounts of all colours and types of paint for future use - minimum 1 litre for details or 4 litres for major areas all clearly marked

END OF SECTION

PART I GENERAL

101 Scope

Design, supply and install glass products including
but not limited to
Frameless glass Shower Screens
Glass roofing panels
Fixed Glass panels
Internal and external mirrors

102 Related Work

Co-ordinate and co-operate with the following trades

Floor construction	Wall finishes
Wall framing	Plumbing fittings and fixtures
Floor finishes	Carpenter
Concreter	

103 Quality Assurance

Ensure that the chosen contractor is widely experienced in the class of work required by this specification
Provide details of similar work satisfactorily completed, including names and telephone numbers of those for whom the work was done so they can be contacted for references

104 References

Comply with applicable portions of the following Australian Standards

AS 1231	2000	Anodised coatings for architectural applications
AS 1288	1994	Glass in buildings - Selection and installation
AS/NZS 2208	1996	Safety glazing materials in buildings
AS 3715	2002	Metal finishing - Thermoset powder coatings for architectural applications
AS 3740	2004	Waterproofing of wet areas in residential buildings
SAA HB 52	2000	The Bathroom Book

105 Submissions

Provide to the Architect before ordering components
Manufacturer's printed data on the specified products and installation instructions

106 Delivery, Handling and Storage

Deliver all the materials to the site in totally satisfactory condition Reduce storage of materials on site to a minimum
Mark each component for easy identification Provide security for materials not installed, from any loss or damage by weather or any other cause
Do not install any damaged component or panel Remove and replace all such items

107 Warranty

Provide to the Architect a written warranty stating that all components of the complete installation will remain intact and in a satisfactory condition for twelve months from the date of Practical Completion

PART II MATERIALS

201 Acceptable Manufacturers

Pilkingtons

202 Materials

A Glass
Toughened thickness to suit application all exposed edges arrissed and polished
Laminated thickness to suit application, clear interlayer

B Metal Frame
Material Aluminium alloy 6063 Temper T5 or T6
Finish anodising/polyester powder coat Refer Clause 205

C Metal fastenings clips etc Chrome plated Brass
Stainless Steel Finish of chrome Satin

Finish Satin

203 Mirrors

Generally silvering quality minimum 6mm thick float glass with all edges bevelled 30mm wide and polished, having a layer of silver and of copper all covered with a protective paint coating
Note heated (Demist) mirrors to all Bathrooms
External Mirror to have polished edge and waterproof backing and to comply with BCA requirements for glazing

204 Detail Design Provisions

A General The Architect's drawings are to be considered essentially schematic except for profiles of exposed surfaces and panel arrangement where indicated If, in the opinion of the Builder a change of profile is required in order to meet the specification, arrange through the Architect for a review of the condition Design the assembly, reinforcing and anchorage to suit each specified condition in an acceptable manner complying with the requirements specified herein

B Tolerances Design frames to accommodate building tolerances, and when completed, within the following tolerances

1 Deviation from plumb, level or dimensioned angle within 3mm per 3 5m of length of member or 6mm in total run in line
2 Deviation from theoretical position on plan or elevation, including deviation from plumb level or dimensioned angle not to exceed 9mm total at location
3 Change in deviation not to exceed 3mm for 3 5m run in direction

205 Finish

Anodising or Polyester Powder Coat

A Anodising
Aluminium frames to be anodised to selected colour
Pre-treat and apply anodising by applicators approved by the Architect
Minimum coating thickness of 25 microns subjected to random testing after installation Remove and replace non-conforming material
Comply with requirements of AS 1231

B Polyester powder coat
Polyester powder coated, to colour approved by the Architect and by the manufacturer of the powder material to metal of windows, doors
Perform pre-treatment and application of powder coating by applicators approved by the Architect and by the manufacturer of the powder material
Minimum coating thickness of 50 microns subjected to random testing after installation non-conforming material will be removed and made good by the Builder
Comply with requirements of AS 3715

203 Sealants and Accessory Materials

A Provide non-structural external weatherproofing sealants of low modulus neutral curing silicone rubber compounds by approved manufacture

B Generally comply with AS 1288 Supply spacer gaskets, glazing tapes and setting blocks compatible with sealants which do not contribute to sealant colour change or affect the sealants adhesion to substrates when exposed to ultraviolet light
Prior to application, evaluate samples of materials receiving the silicone, including elastomeric sealants, by the silicone sealant manufacturer for compatibility and primer selection Clearly identify the submitted materials as to manufacturer and product number
Silicone sealants generally are to be clear in colour

C Interior Sealers Acrylic-emulsion or latex-rubber-modified acrylic emulsion sealant compound, permanently flexible non-staining and non-bleeding recommended by manufacturer for protected exterior exposure and general interior exposure

D Joint Primer/Sealer Provide type of joint primer/sealer as recommended by sealant manufacturer to suit each surface

E Bond Breaker Tape Polyethylene tape or other plastic as recommended by sealant manufacturer to be applied to sealant-contact surfaces where bond to substrate or joint filler is to be avoided for proper performance of sealant Provide self-adhesive tape where applicable

F Sealant Backer Rod Compressible rod stock of polyethylene foam polyethylene jacketed polyurethane foam butyl rubber foam, neoprene foam or other flexible permanent durable non-absorbent material as recommended by sealant manufacturer for compatibility with sealant

G Glazing Tape Polyisobutylene tape of type, thickness and width as recommended by glass manufacturer and Architect

H Exposed screws countersunk type, anodised aluminium or non-magnetic stainless steel evenly and neatly located in an approved manner Exposed fasteners finished to match aluminium

20407 Fabrication

Framing System Fabricate from extrusions to profiles shown on approved shop drawings
Form junctions so that no fixings, such as pins, screws pressure indentations and the like are visible on exposed faces Show fixings which will be exposed, on shop drawings
Cut edges, drill holes rivet joints and clean flat sheets, neat free from burrs and indentations
Remove sharp edges without excessive deformation Fit mitred joints accurately to a fine hairline
Pre-assemble and match mark before delivery

PART III EXECUTION

301 Examination

Inspect site conditions before start of work on site, before delivery of materials Ensure conditions are satisfactory for installation
Perform rectification required before delivery of materials
Start of work means total acceptance of conditions

302 Preparation

Prepare surfaces affected by the installation in accordance with material manufacturer's instructions

303 Frame Anchorage

Fabricator is required to supply the anchorage devices to the Builder for building in by others and check that devices are located as required

304 Frameless Glass Shower Screens

Supply and install frameless glass shower screens generally to the locations indicated All screens and doors shall be glazed using clear toughened safety glass of suitable thickness Fixing shall be by chrome plated metal patch fittings and all wall / floor junctions shall be sealed with continuous bed of silicone sealant Doors are to be provided with selected chrome plated pulls

305 Roof Glazing

Supply and install a weatherproof glazed roof system, using extruded aluminium glazing sections fixed to timber framing, generally to the locations indicated
Secure glass in accordance with glass manufacturer's recommendations and AS 1288 Allow for thermal expansion of glass in all cases

306 Frameless Glass Balustrades

Supply and install glass pool fences and balustrades generally to the locations indicated All fence panels and gates shall be glazed using clear toughened safety glass of suitable thickness Where detailed glass panels to be fixed using patented stainless steel dowels into reinforced concrete walls Fixing at walls shall be by stainless steel patch fittings, and shall be sealed with continuous bed of silicone sealant All other frameless glass balustrades are to be set in concrete in groves provided by Concreter and sealed with continuous bed of silicone sealant

307 Preparation for Sealants

Joint Preparation Sealants Clean joint surfaces immediately before installation of sealant or caulking compound Remove dirt insecure coatings moisture and other substances which could interfere with bond of sealant or caulking compound

308 Installation General

Comply throughout with the current written instructions of the system manufacturer

309 Installation of Sealants

A Install bond breaker tape where required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly

B Employ only proven installation techniques which will ensure that sealants are deposited in uniform continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides Except as otherwise indicated, fill sealant rabbet to a slightly concave surface slightly below adjoining surfaces

C Install sealant to depths as recommended by sealant manufacturer

D Remove excess caulking compound and sealant and leave surfaces neat smooth and clean without smears on surrounding work Tool joints where recommended by manufacturer or where required Remove cartons and debris from site as the work progresses

310 Protection

A Framing System Protect metal surfaces as necessary during erection Finish surfaces free from mechanical imperfections such as scratches, scrapes dents, spots, stains and streaks

B Glass Protect glass from breakage immediately upon installation and until Practical Completion Remove and replace glass and metal panels which are broken, cracked, abraded, chipped or damaged in other ways before, during or after installation, at no additional cost to Proprietor

C Be responsible for breakage and damage to installation until Practical Completion

311 Cleaning

A Remove labels excess glazing compounds, stains spots and other foreign matter from glass frames, hardware and other finished surfaces immediately upon installation of glazing for each light

B Debris Remove rubbish and debris resulting from glazing operations, each day

312 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

The work of this Section covers the supply and installation of manufactured casework items
It includes but is not limited to
Kitchen cabinets and cupboards
Shelving
Bar units
Bathroom cabinets
Laundry cabinets
Benchtops
Service cupboards
Wardrobes

102 Related Work

Co-ordinate and co-operate with the following trades
Carpentry
Wall Finishes
Floor Finishes
Ceiling Finishes
Plumbing
Electrical Installation
Air-conditioning and mechanical exhausts

103 Quality Assurance

Manufacturers and installers are required to be widely experienced in the relevant aspects and class of work required for this section
At a place selected by the Architect, construct a prototype of a completed installation Include in this prototype all elements required by this specification finished in every respect When approved by the Architect each prototype remains part of the work and becomes the standard for the remaining work

104 References

Comply with applicable portions of the Australian Standards

AS/NZS 1859	Reconstituted wood - based panels *There are 5 parts to this standard 1996 - 1997* 1859 1 1997 Particleboard
AS 2131 1987	Adhesives - For bonding decorative thermoset laminates (contact adhesives)
AS 2754	Adhesives for timber and timber products
AS 2924 1998	High pressure decorative laminates
AS/NZS 4386	Domestic kitchen assemblies 4386 1 1996 Kitchen units 4386 2 1996 Installation

105 Submissions

Submit the following prior to fabrication
Product literature on proposed hardware items including components
Technical data on melamine laminates proposed for use
Technical data and samples of substrate materials
Thickness of materials at typical locations

1066 Shop Drawings

Comply with DOCUMENT 00800, Clause 27
Provide Shop Drawings for all items supplied hereunder
A Contract Drawings and details provided are indicative as to general and minimum requirements, and do not show conditions
Develop details not shown and in conformity with the indicative details shown
B Take and confirm dimensions on site before preparing Shop Drawings where possible
C Submit detailed Shop Drawings for fabrication and installation Show plans elevations and

detailed sections indicate materials finishes, fasteners and accessory items

1077 Delivery, Handling and Storage

Do not deliver work to the site until after completion of other trade activities which could soil damage or cause deterioration of manufactured joinery items
Prevent soiling damage or deterioration during delivery storage and handling
Keep site storage to a minimum Install directly in place, but refer to Clause 302
If circumstances make storage necessary in areas other than the final location store only in those that meet the requirements specified for installation areas

PART II MATERIALS

201 Materials

A Cupboard carcasses

Use only moisture proof materials externally or in internal wet areas
Fixings to be concealed wherever possible
All built in elements to be accurately constructed to suit available space
All internal sheeting, including backs, to be in high quality selected colour melamine finish on 16mm HMP particleboard

B Hardware

Drawer runners to be "soft close" self closing metal tracks with nylon wheels, except deep pantry drawers which are to be ball bearing heavy duty - all equal to BLUM Quadro
All joinery cabinet doors to be hung on self-closing hinges and fitted with selected handles

C Benchtops

Benchtops to be in 30mm thick selected polished stone with bullnosed edges (refer P C Sums - Stone Benchtops (Supply & Install)

D Cupboard Doors & Drawer fronts

All cupboard doors and matching fixed panels to be fabricated from solid 25mm MDF, recessed for 18mm centre panel leaving 70mm wide frame with square corners generally as detailed
Drawer fronts and infill panels, to be fabricated from solid 25mm MDF
All exposed edges to be arrissed
Sand smooth and ensure that all exposed surfaces are free of imperfections before applying Factory priming coat for on site painted finish

E Shelving

All exposed shelving and matching support panels to be fabricated from solid 32mm plywood with 50 x 35 solid finger-jointed pine timber edgestrip, front face routed to provide reeded profile, stopping 50mm short from ends, generally as detailed
All exposed edges to be arrissed
Sand smooth and ensure that all exposed surfaces are free of imperfections before applying Factory priming coat for on site painted finish

F Adjustable Shelving

All adjustable shelves to be in high quality selected colour melamine finish on 16mm HMP particleboard to match carcasses Where the shelf length requires extra support use double particle board thickness Use recessed shelf supports

G Drawers behind Doors

Where drawer units are installed behind doors (dressing room joinery) provide sufficient side setback of drawer unit to allow for door hinge Provide 30mm gap on drawer front for finger pull
Provide 100mm high kickboard set in as detailed

202 Fabrication

Obtain correct manufacturer's manuals for all appliances specified to be built into joinery and ensure exact fit
Construct by screwing and gluing or other approved method A dry stapled assembly will not be approved
Fabricate bench tops as indicated in a manner recommended by the material's manufacturer
Fabricate units without joints unless counter length exceeds maximum available length of materials

Seal joints between counter and splash back with matching colour silicone Wherever possible, pre-cut openings to receive hardware appliances plumbing fixtures electrical work and similar items

Locate openings accurately using templates or roughing-in diagrams for proper size and shape Smooth edges of cut-outs and where located in bench tops and similar exposures seal edges of cut-outs with a water resistant coating

Back prime all concealed solid timber surfaces prior to installation

Install fasteners hinges etc in accordance with manufacturer's instructions When in doubt about suitability consult with manufacturer of the items specified or selected

203 Inspection Before Delivery

Advise Architect when the first of any group of items is ready for inspection not less than four days before delivery is due at the site Where work is found not to comply with documentation the Architect will order rectification The Architect will be the sole decision-maker regarding compliance or non-compliance

PART III EXECUTION

301 Examination

Visit the site and inspect conditions Check dimensions and compare all aspects with the drawings and specification Resolve differences before ordering materials or starting work

Start of work means total acceptance of all conditions

302 Preparation for Installation

Prior to installing, condition joinery to the average humidity conditions prevailing in the installation areas

Delivery anchoring devices and similar inserts required to be built into substrates well in advance of the fixing of fittings and provide full details when they are to be fixed by others

Prior to installation examine shop-fabricated work for completeness and remedy and deficiencies Include back priming Remove packing where not required

Thoroughly clean all floors and walls that will be permanently concealed by joinery

303 Installation

Use concealed shims as required to install the work plumb level straight and distortion free within the following tolerances

- 1mm in 800mm for plumb and level (including bench tops)
- 0 5mm maximum offsets in flush adjoining surfaces,
- 2mm maximum offsets in revealed adjoining surfaces

Scribe and cut to fit adjoining work, refinish cut surfaces or repair damaged finishes at cuts

Secure joinery with anchors of blocking built-in or directly attached to substrates Secure to grounds, stripping and blocking with countersunk concealed fasteners and blind nailing as required to complete the installation

Except where pre-finished matching fastener heads are required use fine finishing nails countersunk and filled flush Use a matching filler where a transparent finish is required

Install casework without distortion so that doors will fit openings properly and be accurately aligned

304 Hardware

Install all door and joinery hardware as scheduled, listed and required in full compliance with the manufacturer's recommendations Remove before site painting and refix on completion of final finish

Adjust as needed to centre doors in openings

305 Adjustments, Cleaning, Finishing and Protection

A Finish the work specified in this Section and remedy anything not finished at the shop or any other stage prior to completion

B Adjust joinery to achieve a uniform appearance

C Lubricate and clean hardware making any final adjustments needed for proper operation Remove all handling marks from visible joinery surfaces

D Protection Do everything needed to ensure that all work is without damage or deterioration at completion

306 Completion

Complete all contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO HYDRAULIC ENGINEER'S SPECIFICATION DETAILS)

The work of this section includes but is not limited to the distribution of cold water to sanitary and other fittings as well as

Site water distribution
Fire fighting equipment
Spa pools
Irrigation
Rainwater Storage to toilets

102 Related Work

Co-ordinate and co-operate with the following trades

Sanitary Sewerage
Stormwater Drainage
Irrigation Systems
Fire Hydrants & Hose reels
Plumbing Fixtures (refer APPENDIX "D")
Finishing Trades

103 Quality Assurance

Perform the work of this section using tradesmen whose experience and skills meet the requirements of controlling statutory authorities

104 References

Comply with applicable portions of the following Australian Standards

AS 1357		Water supply – valves for use with unvented water heaters 1357 1 2004 Protection valves 1357 2 1998 Control valves
AS 1432	2004	Copper tubes for plumbing, gasfitting and drainage applications
AS/NZS 1477	1999	PVC pipes and fittings for pressure applications
AS 1628	1999	Water supply - Metallic gate, globe and non-return valves
AS 2492	1994	Cross-linked polyethylene (PE-X) pipe for hot and cold water applications
AS 2537	1994	Mechanical jointing fittings for use with cross-linked polyethylene (PE-X) pipe for hot and cold water applications
AS/NZS 3500		National Plumbing and Drainage Code 3500 1 1 1998 Water supply - Performance requirements 3500 1 2 1998 Water supply - Acceptable solutions *There are 8 other parts to this standard, 1995 - 2000*
AS 3688	1994	Water supply - Copper and copper alloy body compression and capillary fittings and threaded-end connectors
AS/NZS 4130	2001	Polyethylene (PE) pipes for pressure applications

Comply with requirements of statutory authorities having jurisdiction

105 Submissions

Before ordering scheduled material submit required product data to the Architect particularly where the specified material is not available and alternatives are offered

106 Warranty

Provide the Proprietor with warranties covering

A Materials in the form supplied by manufacturers of specified components
B Installation, for five years from the date of Practical Completion the complete piping installation and the specified components to which it is connected

107 Fees

Pay fees to the relevant statutory authorities

108 As Built Drawings

Comply with Clause 40 of DOCUMENT 00800 SUPPLEMENTARY CONDITIONS OF CONTRACT

PART II MATERIALS

201 Acceptable Manufacturers

Before ordering materials obtain and provide to the Architect a written statement that items to be installed are approved by Statutory authorities having jurisdiction

202 Materials

Pipes Copper unless noted otherwise
Diameters Refer Hydraulic Engineer s drawings
Hose cocks Solid Brass
Chrome Plating
Location All exposed pipes
Base Material Brass Copper

203 Equipment

Provide necessary equipment to effect a complete installation of each part of this section, including seals jointing materials flanges etc

204 Fabrication

Fabricate components in a manner approved by the local authority and the Architect Comply with requirements of relevant Australian Standards where applicable

PART III EXECUTION

301 Examination

Visit the site before delivery of materials and compare conditions with those shown on drawings Start of work means total acceptance of conditions

302 Connections to Supply

Arrange with the supply authority obtain and install required meter equipment complete with meter housing and connect in accordance with the authority's requirements

303 Below Ground Installation

Prepare trenches or openings and lay pipes at approved depth on approved base material On completion back-fill with approved material and cover with approved material and consolidate as required by the statutory authority and the Architect Maintain required distances between pipes of different sorts and pipes and the structure

304 Fabrication and Jointing

Fabricate and join components to the Architect's and the authority's approval to applicable Australian Standards and to the manufacturers' instructions

305 Installation

Install components to the Architect's and the authority's approval to applicable Australian Standards and to the manufacturer s instructions
Co-ordinate with other trades particularly where pipes pass through other elements of the building and plan relevant work to produce the whole installation in proper sequence
Do not chase into structural concrete items without Structural Engineer s approval Horizontal chasing in loadbearing masonry walls to be a maximum length of 1200 unless specifically approved by Structural Engineer
Ensure that interfaces are of appropriate size and type and are properly sealed
Seal penetrations as needed to achieve a watertight installation Refer to the Warranty Clause in Part I

306 Testing

Cover no pipes joints or connections until tested and passed by the relevant authority, and

approved by the Architect
Submit to the Architect copies of certificates issued by relevant authorities

307 Protection
Protect work of this section from damage until Practical Completion is achieved

308 Cleaning
On completion remove debris and clean visible work to the Architect's satisfaction

309 Completion
Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO HYDRAULIC ENGINEER'S SPECIFICATION DETAILS)

The work of this section includes but is not limited to supplying and laying a complete system of sewer pipes as specified below and as detailed on Hydraulics Engineering drawings, including
Sewer drains from each fitting or installation
Sanitary pits & cleanouts
Connection to Boards sewer

102 Related Work

Co-ordinate and co-operate with the following trades
Site Preparation - Excavation
Bituminous Concrete Pavement
Concrete Pavement
Plumbing Fixtures
Stormwater Drainage
Lawns and Grasses

103 Quality Assurance

Perform the work of this Section using tradesmen whose experience and skills meet the requirements of controlling statutory authority
The Architect and Engineer will make random inspections during the execution of the work

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1260 2002	PVCU pipes and fittings for drain, waste and vent applications
AS 1741 1991	Vitrified clay pipes and fittings with flexible joints - Sewer quality
AS 2032 1977	Code of practice for installation of UPVC pipe systems
AS 3500	National Plumbing and Drainage Code
3500 0 2003	Glossary of terms
3500 2 1 1996	Sanitary plumbing and drainage - Performance requirements
3500 2 2 1996	Sanitary plumbing and drainage - Acceptable solutions
There are 7 other parts to this standard, 1995 - 2000	

Perform work also in accordance with the regulations and requirements of the Council's Engineer and drawings provided by Council and Engineer for the purpose
Comply with requirements of any statutory authority having jurisdiction

105 Warranty

Provide to the Proprietor a warranty covering
A Materials in the form supplied by manufacturers of specified components
B Installation for five years from the date of Practical Completion the complete drainage installation

106 As Built Drawings

Comply with Clause 40 of DOCUMENT 00800 SUPPLEMENTARY CONDITIONS OF CONTRACT

PART II MATERIALS

201 Acceptable Manufacturers

Before ordering materials obtain and provide to the Architect a written statement that items to be installed are approved by Statutory authorities having jurisdiction

202 Materials

Sewer Drain Pipes
Tested vitrified clay with rubber ring joints
UPVC Sewer grade pipes with solvent joints
Conform with local authorities' requirements
Pits 20 MPa and comply with local authority s requirements

203 Acoustic Insulation
Location all drainage lines below finished floor level and above habitable areas including vents branch lines and stacks (for full extent to below Upper Floor level)
Material WAVEBAR' or equivalent - REFER HYDRAULIC ENGINEER S SPECIFICATION

PART III EXECUTION

301 Examination
Visit site and inspect conditions comparing conditions to drawings before delivery of materials to site
Start of work means total acceptance of conditions

302 Trenching
Form straight and true trenches, 600mm clear of walls, maintain sides and free from water Form trenches and bedding to provide constant falls as approved by the local authorities Arrange for inspection by relevant authority before back-filling

303 Pipe Laying
Connect vitrified clay pipes with rubber rings and with inspection openings at 6 metre intervals and at bends and junctions
Connect UPVC pipes with materials appropriate to the pipes in accordance with manufacturer's instructions
Provide inspection openings bends and junctions required by authorities

304 Pipes Below Structures
Where sewer or drain pipes are laid below or under structures, comply with requirements of local authority

305 Connections to Other Services
Seal thoroughly with water-tight material as recommended by component manufacturer
Connect new lines to road or street sewer and drainage to the requirements of the relevant authority

306 Testing
Cover no pipes or joints until approved by the Architect and tested and passed by the relevant authority

307 Backfill
After inspection (and testing) where required back-fill with approved material
Such material requires approval from Local Council Engineer and Architect Remove materials not conforming to such requirements without cost to the Proprietor

308 Protection
Protect completed work from damage until Practical Completion Make good damage which does occur

309 Cleaning
Remove debris and clean areas where work has been performed to Architect's satisfaction

310 Completion
Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

PART I GENERAL

101 Scope (REFER ALSO TO HYDRAULIC ENGINEER'S SPECIFICATION DETAILS)

The work of this section includes but is not limited to, the supply and installation of a complete system of natural gas distribution including

Gas distribution to stoves
Gas distribution to BBQ locations
Gas distribution to hot water heaters
Gas distribution to fireplaces
Gas meters

102 Related Work

Co-ordinate and co-operate with the following trades
Site preparation - excavation
Water distribution
Plumbing Fixtures & Equipment
Finishing trades

103 Quality Assurance

Perform the work of this section using tradesmen whose experience and skills meet the requirements of controlling statutory authorities

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1260 2002	PVCU Pipes and fittings for drain waste and vent applications
AS 1318 1985	SAA Industrial Safety Colour Code
AS 1357	Water supply – Valves for use with unvented water heaters
	1357 1 2004 Protection valves
	1357 2 1998 Control valves
AS 1432 2004	Copper tubes for plumbing gasfitting and drainage applications
AS 1464	Plastic pipes and fittings for gas reticulation (UPVC)
	There are 2 parts to this standard
AS/NZS 3500	National Plumbing and Drainage Code
	3500 1 1 1998 Water supply - Performance requirements
	3500 1 2 1998 Water supply - Acceptable solutions
AS/NZS 4130 2003	Polyethylene (PE) pipes for pressure applications

Comply with requirements of statutory authorities having jurisdiction

105 Submissions

Before ordering scheduled material submit required product data to the Architect particularly where the specified material is not available and alternatives are offered

106 Warranty

Provide the Proprietor with warranties covering

A Materials in the form supplied by manufacturers of specified components
B Installation, for five years from the date of Practical Completion the complete piping installation and the specified components to which it is connected

107 Fees

Pay fees to the relevant statutory authorities

108 As Built Drawings

Comply with Clause 40 of DOCUMENT 00800 SUPPLEMENTARY CONDITIONS OF CONTRACT

PART II MATERIALS

201 Acceptable Manufacturers

Before ordering materials obtain and provide to the Architect a written statement that items to be installed are approved by Statutory authorities having jurisdiction

202 Materials

Pipes & tubes for gas distribution are to be copper or other approved material

203 Equipment

Provide necessary equipment to affect a complete installation of each part of this section including seals jointing materials, flanges valves stoptaps, pipe finishes etc for gas distribution

PART III EXECUTION

301 Examination

Visit the site before delivery of materials, and compare conditions with those shown on drawings
Start of work means total acceptance of conditions

302 Connections to Supply

Arrange with the supply authority obtain and install required meter equipment complete with meter housing and connect in accordance with the authority's requirements

303 Below Ground Installation

Prepare trenches or openings and lay pipes at approved depth on approved base material On completion back-fill with approved material and cover with approved material and consolidate as required by the statutory authority and the Architect Maintain required distances between pipes of different sorts and pipes and the structure

304 Fabrication and Jointing

Fabricate and join components to the Architect s and the authority's approval, to applicable Australian Standards and to the manufacturers instructions

305 Installation

Install components to the Architect's and the authority's approval to applicable Australian Standards and to the manufacturer's instructions
Co-ordinate with other trades, particularly where pipes pass through other elements of the building and plan relevant work to produce the whole installation in proper sequence
Do not chase into structural concrete items without Structural Engineer s approval Horizontal chasing in loadbearing masonry walls to be a maximum length of 1200 unless specifically approved by Structural Engineer
Ensure that interfaces are of appropriate size and type and are properly sealed
Seal penetrations as needed to achieve a watertight installation Refer to the Warranty Clause in Part I

306 Testing

Cover no pipes joints or connections until tested and passed by the relevant authority and approved by the Architect
Submit to the Architect copies of certificates issued by relevant authorities

307 Protection

Protect work of this section from damage until Practical Completion is achieved

308 Cleaning

On completion remove debris and clean visible work to the Architect's satisfaction

309 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO HYDRAULIC ENGINEER'S SPECIFICATION DETAILS)

The work of this section includes but is not limited to supplying and laying a complete system of site stormwater drainage and
Excavation, bedding & backfilling for drain lines
Agricultural drains (including plastic)
Drains below slabs on ground
Culverts pits manholes frames, covers
Connection to main street drain

102 Related Work

Co-ordinate and co-operate with the following trades
Site Preparation - Excavation
Bituminous Concrete Pavement
Concrete Pavement
Masonry Unit Pavers
Concrete
Landscaping trades

103 Quality Assurance

Perform the work of this Section using tradesmen whose experience and skills meet the requirements of controlling statutory authority
The Architect and Engineer will make random inspections during the execution of the work

104 References

Comply with applicable portions of the following Australian Standards

AS 1379 1997	Specification and supply of concrete
	There is 1 supplement to this standard
AS/NZS 3500	National Plumbing and Drainage Code
	3500 3 1 1998 Stormwater drainage - Performance requirements
	3500 3 2 1998 Stormwater drainage - Acceptable solutions
AS 3600 2001	Concrete structures
	There is 1 supplement to this standard 1994

Comply with requirements of any statutory authority having jurisdiction

105 Warranty

Provide to the Proprietor a warranty covering

A Materials in the form supplied by manufacturers of specified components

B Installation the complete drainage installation for five years from the date of Practical Completion

106 As Built Drawings

Comply with Clause 40 of DOCUMENT 00800 SUPPLEMENTARY CONDITIONS OF CONTRACT

PART II MATERIALS

201 Acceptable Manufacturers

Before ordering materials obtain and provide to the Architect a written statement that items to be installed are approved by Statutory authorities having jurisdiction

202 Materials

A Stormwater pipes
Untested vitrified clay with rubber ring joints
UPVC stormwater grade pipes with solvent joints

B Agricultural drains
Low density polyethylene

C Aggregate
15mm blue metal

D Pits

Manufactured plastic frame type or concrete
E Grated Drains
Stainless Steel

PART III EXECUTION

301 Examination
Visit site and inspect conditions, comparing conditions to drawings before delivery of materials to site
Start of work means total acceptance of conditions

302 Trenching
Form straight and true trenches maintain sides and free from water
Form trenches and bedding to provide constant falls as approved by the local authorities Arrange for inspection by relevant authority before back-filling

303 Pipe Laying
Lay pipes 600mm clear of walls
Connect with rubber rings and with inspection openings at 6 metre intervals and at bends and junctions
Connect with materials appropriate to the pipes in accordance with manufacturer's instructions
Provide inspection openings, bends and junctions required by authorities

304 Pipes Below Structures
Where drain pipes are laid below or under structures, comply with requirements of local authority

305 Connections to Other Services
Seal thoroughly with water-tight material as recommended by component manufacturer
Connect new lines to road or street drainage to the requirements of the relevant authority

306 Testing
Cover no pipes joints or connections until approved by the Architect and tested and passed by the relevant authority

307 Backfill
After inspection (and testing) where required back-fill with approved material
Such material requires approval from Local Council Engineer and Architect
Materials not conforming to such requirements or not approved will be removed without cost to the Proprietor

308 Protection
Protect completed work from damage until Practical Completion Make good damage which does occur

309 Cleaning
Remove debris and clean areas where work has been performed by this trade, to the satisfaction of the Architect

310 Completion
Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply materials and install an effective irrigation system to garden and lawn areas including but not limited to
Pipework
Fittings including timers
Outlets
Pumps
Connection to rainwater tanks

102 Related work

Co-ordinate and co-operate with the following trades
Site preparation - Excavation
Water Distribution
Storm Drainage
Lawns and Grasses
Exterior Plants

103 Quality Assurance

Contractor s Qualifications Minimum five years experience in similar work as required by the Specification Submit evidence of completed similar work with contact names and telephone numbers

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1477 1999	PVC Pipes and fittings for pressure applications
AS 2032 1977	Code of practice for installation of UPVC pipe systems
AS 2698	Plastic pipes and fittings for irrigation and rural applications
2698 1 1984	Polyethylene micro - irrigation pipe
2698 2 2000	Polyethylene rural pipe
2698 3 1990	Mechanical joint fittings for use with polyethylene micro - irrigation pipes

105 Submissions

A Shop Drawing Provide a shopdrawing showing precise layout of every component of the system and the location of each
Comply with Document 00800 Clause 27 shop drawings

B Submit samples of each component for approval of the Architect before ordering material

106 Project Conditions

Inspect drawings and visit site Check aspects of required work and refer any discrepancy to Builder and/or Architect, for decision

107 Warranty and Maintenance

Maintain the system against faulty workmanship and materials for 12 months after Practical Completion
Replace any faulty component and restore to full operation at no cost to the Proprietor

PART II MATERIALS

201 Materials

Pipes Each pipe to be marked with AS 1477
Pipe jointing Solvent cement
Sleeve pipes under driveways and paving 90mm Class 9 UPVC

Pipes within sleeves	20mm copper or PVC
Gate Valves	One to each supply line of size to suit end of main supply line
Risers & heads	Compatible with delivery pressure of the main supply

Manual Timers	
Protective boxes	One to each timer and gate valve

PART III EXECUTION

301 Examination

Inspect site and compare conditions to those provided in specification and drawings
Notify Architect of any discrepancy Arrange with Contractor for correction of any unsatisfactory condition
Start of work means total acceptance of conditions

302 Preparation

Co-ordinate with Contractor responsible for site preparation Section 02315, then make final preparation before installation of materials

303 Trenches and Excavations

Prior to excavation of trenches, obtain approval of pipe runs Minor adjustment in the system's layout will be permitted to clear existing underground obstructions Repair costs to services damaged are the responsibility of the Contractor performing this work
Excavate mainline trenches to a depth so as to allow a minimum of 400mm cover from the top of the pipe to the ground surface Excavate trenches for lateral spraylines to a depth so as to allow a minimum of 300mm cover from the top of the pipe to the ground surface Excavate trenches to sufficient width to permit proper handling and installation of the pipe and fittings
Obtain approval prior to backfilling trenches Pipes to be firmly and evenly supported with clean backfill material free of rubble, stones and rocks
Where rock and stone is incurred during the excavation works, back fill material over the pipe to be clean white packing sand free of organic matter Place sand layer 75mm from the top of the pipe
Place trench backfill material in at least two equal layers Each layer to be wheel-rolled with a backhoe or other approved compaction equipment and crown completed backfill 30mm higher than the surrounding surface to allow further consolidation
Where solid rock is encountered in trench excavation request an inspection of the open trench prior to further trench excavation in that area
Rock to be measured in the solid jointly by representatives of the Landscape Contractor and the Landscape Architect within the confines of the excavation and within the limits shown on the drawings or specified prior to backfilling No allowance will be made for overbreak
The Irrigation Contractor is responsible for the erection of all necessary barriers and safety signs to make trench work safe from public pedestrian entry Under no circumstances are trenches to remain either open or partially open over night

304 Installing Pipes

Install sprinkler lines or mains with a minimum cover as specified above Interior of pipes to be kept free from dirt and debris Open ends of pipe to be closed by approved means during the laying process Use red priming fluid and blue dyed solvent cement to joints Ensure that excess solvent is carefully wiped free of joints and keep joints dry for 24 hours minimum to allow solvent cement to dry Turn on valves to each station to flush lines out with water before fitting spray heads
Ensure that no pipe lengths will carry water at greater than 1 5 metres/second velocity

305 Sleeve Pipes and Thrust Boring (By Builder)

Thrust bore a hole of sufficient diameter under driveways and paths shown on plan to allow for insertion of 90mm Class 9 PVC along entire width of pavement Install top of PVC sleeve pipe 40mm below existing pavement level

306 Valves

Inform Landscape Architect of any proposed change made in supply and installation of Master Valve Allow for connection of pipework tees and junction elbows from the existing pipework out of the valve

307 Sprinkler Risers

Install sprinklers on screwed 15mm schedule 80 PVC articulated risers Set spray heads level with topsoil or at a level determined by the Landscape Architect

Securely brace the riser against vibration where the sprinkler head is in operation
Flush out mains laterals and risers with water before fitting sprinkler heads to risers

308 Sprinkler Heads

Set sprinkler heads at dimension shown on plan Set half circle sprinklers flush to edge of grass and garden or paving and grass or kerb
Set sprinkler heads perpendicular to finished surfaces Set heads at grade on shrub beds
Discharge of water from sprinkler heads to be compatible to the pipe layout and delivery pressure of the main Refer to the Schedule which lists valve sprinkler types Make adjustments for throw of individual spray heads prior to commissioning of service and Practical Completion Adjust sprinklers to give complete even coverage at completion of installation Install the spray heads as nominated on the Schedule

309 Commissioning

Be responsible for the testing and satisfactory performance of the complete irrigation system

A Static Tests
Prior to commissioning ensure valve stations close satisfactorily
Pipe work and fittings to be tested to the satisfaction of the Landscape Architect to ensure there are no water leaks in the system

B Commissioning Procedure - Give 48 hours notice to the Architect
Upon completion of the above static tests in the presence of the Landscape Architect commission the system in accordance with the following procedure

1 Open each valve to test sprinkler operation During this procedure only one valve station is to be open at any one time
2 Test sprinkler operation by continuous operation for a minimum of 15 minutes for each valve
3 Upon satisfactory completion of the above procedures the complete system is to be continuously operated for a minimum of one hour

310 As-built Drawing

Provide Landscape Architect with the instruction manual and a copy of as-built drawing when applying for the Certificate of Practical Completion
Drawing to clearly show pipe sizes, valve types and locations fittings and control cable routes Clearly and accurately notate dimensions of pipes The Landscape Contractor to be issued with A1 or B1 size base map transparency sheets by Landscape Architect for use in the preparation of as-built drawings

311 Clean Site

Upon completion of the contract, leave the site in a tidy condition free from rubbish and surplus excavated materials to the satisfaction of the Landscape Architect

312 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Landscape Architect

END OF SECTION

SECTION 02825
FENCES AND GATES

PART 1 GENERAL

101 Scope

Supply and install wooden fences and gates including but not limited to

Fence construction	Gate construction
Pickets,	Hinges
Wire,	Latches
Corrugated iron cladding	

102 Related Work

Coordinate and co-operate with the following trades
Concrete
Carpentry
Brickwork
Blockwork
Painting

103 Quality Assurance

Submit evidence of experience appropriate to the class of work requires Install under the direct supervision of a capable foreman with a proven background in the trade

104 References

Technical Bulletin 8 1, Fences and gates, National Trust of Australia (Victoria) 4 Parliament Place, Melbourne

105 Delivery, Handling and Storage

Deliver, handle and store products so that damage deterioration and loss will be prevented Control delivery schedules to minimise long-term storage at site
Store timber on site indoors, or above ground and cover with secure impervious material

PART II MATERIALS

201 Material Suppliers

202 Material

A Concrete for post bases
20 mpa concrete Refer drawings for size of base

B Sole Plates and Struts
Jarrah, or redgum, mirboo or preservative treated timber
Size

C Posts (fence) Post (gate)
Material Material
Size Size

D Plinth
Material Thickness Height

E Rails
Material Size
Top rail material Size (double splayed)

F Pickets
Material Size
Shape at top G Fastenings
Galvanised nails
Galvanised screws

H Bracing at corners
Material Size

I Railings Material Size

J Woven Wire Panels
Material Source
Type (name) Finish

K Gates

	Frame Stiles			
	Bracing		Material	Size
	Rails		Material	Size
	Panels		Material	Size
	Bottom rail		Materials	Size
L	Hinges	Galvanised Steel		
		Name		
		Size		
M	Latch (bolt)			
	Material		Type / name	
	Finish			

PART III EXECUTION

301 Examination

Visit the site and inspect conditions Check dimensions and compare aspects with the Drawings and Specification Resolve differences before ordering materials or starting work
Start of work means total acceptance of conditions

302 Preparation

Consult with Architect or Proprietor before clearing site of the work Obtain instructions regarding removing or retaining plants or trees existing near the new work Construct adequate protection for plants to be retained Prevent damage to plants Remove from the site material not required Consult with neighbours and reach agreement on methods of construction and access to work areas

303 Installation

Establish exact location of fences and gates to be installed
Excavate for posts to required depths and in correct locations Prepare post bases for installation with either sole plates and struts or for setting in concrete
Set posts vertical and backfill around base Check out posts for rails use galvanised fasteners throughout
Complete the installation as detailed

304 Hardware

Install scheduled hardware for gates Ensure correct location for latches, keepers etc and test satisfactory operation on completion

305 Finishing and Cleaning

Prepare each surface scheduled to be stained or painted Remove matter which could prevent satisfactory painting

306 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO THE STRUCTURAL ENGINEER'S DETAILS & SPECIFICATION)

Supply and install a complete installation of concrete including but not limited to reinforcement, formwork and other items for
footings slabs, walls, columns etc and as detailed herein and on drawings and
other incidental or consequential work which is or may become necessary to complete the work including waterstops and other jointing devices

102 Related Work

Co-ordinate and co-operate with the following trades
Site preparation - Excavation
Structural steel
Concrete finishes
Floor Finishes

103 Quality Assurance

Supply and install required materials in compliance with drawings and specifications which form part of this Contract and with further details and/or instructions issued during the currency of the Contract
The Concreter is to be experienced in this class of work with an appropriately qualified Foremen to supervise requirements

104 References

Maintain the following standards on site during construction
Comply with the requirements of the following Australian Standards

AS 1012 *		Methods of testing concrete
		There are 27 parts to this standard, 1991 - 2000
AS 1302	1991	*Steel reinforcing bars for concrete*
AS 1303	1991	Steel reinforcing wire for concrete
AS 1304	1991	Welded wire reinforcing fabric for concrete
AS 1379	1997 *	Specification and supply of concrete
		There is 1 supplement to this standard 1997
AS/NZS 1554		Structural steel welding
		1554 3 2002 Welding of reinforcing steel
		There are 5 other parts to this standard, 1983 - 2000
AS 2550 15	1994	Cranes - Safe use - Concrete placing equipment
AS 2870	1996 *	Residential slabs and footings - Construction
		There is 1 supplement to this standard, 1996
		Amendment 3-2002
AS 2876	2000	Concrete kerbs and channels (gutters) - Manually or machine placed
AS 3600	2001 *	Concrete structures
		There is 1 supplement to this standard, 1994
AS 3610	1995	Formwork for concrete
		There are 2 supplements to this standard, 1995 – 1996
AS 3799	1998	Liquid membrane – forming curing compounds to concrete
AS 3972	1997	Portland and blended cements

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105 Submissions

Submissions Required Prior to Fabrication

A Builder's Proposed Progress Schedule Include as a minimum in bar chart form the anticipated commencement and completion times of each major element, such as
Fabrication of Formwork and Reinforcing
Placing of Concrete
Stripping of Formwork

B Performance Criteria Provide two (2) copies of each of the following
Waterstops and other accessories Submit manufacturer's product specifications, handling, installation and performance test data sheets for each product required

106 Delivery and Handling

Deliver materials in the same sequence as they are installed Avoid double handling at the site Co-ordinate delivery and fixing schedules to reduce use of cranes

107 Project Conditions

A General

B 1 Measurements Before ordering material or doing work verify measurements and be responsible for the correctness of same Submit differences found to the Architect in writing for consideration before proceeding with the work No extra charge or compensation will be allowed on account of difference between actual dimensions and the dimensions indicated on the drawings

2 Dimensions Where shop drawings are prepared by Sub-Contractors or suppliers and indicate field dimensions which have not been taken take such field dimensions before submitting shop drawings Where dimensions are given and marked "verify" or "verify in field' correct before submitting shop drawings Where field conditions do not yet exist for taking or confirming of field dimensions, note shop drawings with "dimensions will be verified in field", before submitting

C Be wholly responsible for protecting the work and the materials stored on the site Take required measures to protect the work at times against fire storm theft vandalism and other losses

108 Warranty

Forward to the Architect a statement guaranteeing that the concrete complies with the approved mix design and attains the stated guaranteed strengths in 28 days

PART II MATERIALS

201 Formwork

A Formwork Classes Comply with AS 3610 Formwork for Concrete and as follows

1 Class 1 Formwork for concrete surfaces visually of the highest attainable quality best uniformity of texture Excellent quality of edge and joint details

2 Class 2 Formwork for concrete with uniform quality and texture over large areas Built to close tolerances Consistently good quality of edge and joint details

3 Class 3 Formwork for concrete surfaces to be painted and concrete surfaces not otherwise specified or shown on the drawings

4 Class 4 Formwork for concrete surfaces to be rendered tiled or concealed by other finishes and concrete surfaces permanently concealed in ducts shafts and above false ceilings

5 Class 5 Formwork for footings, concrete surfaces in the ground and rear surfaces of retaining walls piers etc

B Formwork Materials Approved timber plywood or precast concrete

202 Reinforcement

A General

All Reinforcement supplied, fabricated and fixed in accordance with the drawings and this specification

Refer discrepancies to the Engineer for decision before proceeding with the work

Be solely responsible for the supply fabrication and placing of reinforcing steel

Remove reinforcement which does not comply with the requirements of this specification and replace to the satisfaction of the Engineer

Comply with the SAA standards as follows AS 1302 AS 1303 AS 1304 and AS 3600

B Surface Condition

Ensure that reinforcing is free from loose mill scale rust mud oil grease or other non-metallic coatings which would reduce the bond between the concrete and steel and is free from kinks or other defects at the time of placing concrete

When there is a delay between placing the reinforcement and pouring the concrete, the Engineer may require the Builder to restore the reinforcement to a condition satisfactory to receive concrete

203 Concrete

A Cement Comply with AS 3972 Provide cement of one brand which has passed the standard tests not more than three months prior to use
If not delivered as a component of ready-mixed concrete deliver cement to the site in branded and sealed bags stacked under protective covers to prevent deterioration so stacked that each batch delivered may be identified
Remove from the site cement that does not comply with these standards or has been adversely affected in storage

B Aggregate
Maximum Size of Coarse Aggregate comply with AS 3600 and drawings

C Water Water is to comply with AS 3600

D Admixtures None, except with prior approval of the Engineer in writing
If admixtures are used comply with AS 3600

E Ready-Mixed Concrete Grey ready-mixed concrete except areas as specified below, supplied by an approved manufacturer and mixed and delivered in accordance with the requirements of AS 1379
Site Mixed Concrete Subject to prior written approval of the Engineer

F Concrete Strength Comply with stated compressive strengths at 28 days as noted or scheduled on structural drawings for various locations
If not scheduled provide 20MPa concrete

204 Steel Welded Fitments in Concrete

Comply with Engineer s requirements Provide shop drawings Comply in all respects with appropriate Australian Standards
In addition fabricated samples of each element may be required to be delivered to site and approved by the Engineer before proceeding to fabricate the various production runs of the elements

205 Fabrication of Reinforcement

A Fabricate, bend and weld in accordance with the standards laid down in AS 3600, the drawings the requirements of this specification and to the satisfaction of the Engineer
Where possible, bend steel prior to delivery and always bend under heat

B Do not bend or straighten in a manner which will damage the steel

C Do not bend again a deformed bar of structural grade steel or cold work steel which has been bent and subsequently straightened or bent in the reverse direction within twenty (20) bar diameters of the previous bend

D Supply necessary support and spacer bar though not necessarily shown on the drawings to the satisfaction of the Engineer
Unless otherwise shown support top reinforcement with 12mm diameter support bars at 300mm centres on bar chairs at 1000mm centres

E Paint ends of bars which are to be left projecting for longer than three days with a heavy coat of neat cement grout

F Cover concrete reinforcement as shown on the drawings to tolerances in accordance with AS 3600

G Tie Wire annealed iron wire not less than No 16 gauge, or other approved fasteners, unless shown otherwise on the drawings With the approval of the Engineer spot welding by the electric arc process may be used in lieu of the wire for selected locations

H Welding (including spot welding) of hard grade bars is not permitted

I Reinforcement from section of concrete which has been demolished and removed may only be re-used after inspection and approval by the Engineer

206 Bolts, Waterstops, etc

Submit selected items to Engineer for approval before ordering

PART III EXECUTION

301 Inspections

Examine ground condition upon which form props are placed Be responsible for prop placement

A The concrete works will be particularly inspected by the Engineer at the stages as follows
  1 After erection of formwork and before placing reinforcement
  2 After cores and embedments have been placed in the formwork
  3 Immediately before each pour of concrete is commenced
B Be responsible for the formwork and the quality of the stripped concrete
C Keep records of each pour of concrete showing the following
  1 Details and types of reinforcing steel
  2 Date of pouring concrete
  3 Area of structure where concrete placed
  4 Area of structure where tests taken
  5 Test results when available
  Make these records available for inspection by the Engineer
D Start of work means total acceptance of conditions

302 Formwork Generally

A Conform to the shape lines grades and dimensions of concrete as required by the drawing and construct of approved precast concrete timber or metal in which bolts and screws in contact with concrete are countersunk Provide sufficient strength to the structure to carry the concrete without deflection Tolerances of the concrete when stripped in accordance with the appropriate Clause of AS 3610
B Be responsible for complete installation of formwork and for the condition of concrete after stripping

303 Maximum Height of Wall Forms

Arrange formwork so that maximum height through which concrete falls within the formwork does not exceed 2700mm for 230mm walls and thicker 1800mm for walls 150mm thick or less, and in proportion for thickness between 150mm and 230mm
Form openings at 1800mm horizontal spacing and tremmie pipes may be used Pour concrete no higher than at least 150mm below the top of at least one of the side forms

304 Fixing Reinforcement

A Unless otherwise shown on the drawings or directed by the Engineer measurements made in placing the reinforcement are to be to the centre-lines of the reinforcement
B Support and wire together reinforcement with a 0 5mm soft wire ties or clips or tack weld in accordance with AS/NZS 1554, to prevent displacement by construction loads
C Use plastic-tipped metal chairs metal hangers, metal spacers and other plastic metal or concrete accessories as required for supporting reinforcement in accordance with the following
  Where the concrete surface is off form and exposed to view internally or externally, provide accessories in which the portions in contact with the formwork are of plastic matching in colour the concrete paste
  Where the concrete surfaces are to be sandblasted internally or externally use only plastic or concrete accessories matched in colour with the concrete paste, where in contact with the formwork
D Weld tie clip or otherwise secure mesh reinforcement together by approved means at alternate intersections and at such other points as may be required
E If necessary support footing reinforcement on concrete blocks of adequate strength and size not to split under the loads they are required to carry
F Take particular care to ensure that wall and column steel is properly fixed in position by the use of plastic chairs clipped on to the steel and by steel spacers for wall reinforcement Place such spacers in position prior to erecting the last shutter
G Splices on Reinforcement Splice only at locations approved by the Engineer with minimum lap lengths as shown on the drawings or welded to develop the full strength of the small bar in accordance with AS/NZS 1554 3
H Cover to Reinforcement Allow clear minimum cover to reinforcing as shown on the drawings Maintain this cover during concreting

305 Slip Joints

On top of all load-bearing brick walls to receive reinforced concrete slabs, supply and lay twin layers of zincalume sheet with graphite between for full width and length of walls On top of cavity walls, supply and lay same, with formed drip groove cavity bridge (pointing upwards) Ensure that all

bearing surfaces are smooth and even and that slip joints remain in place during pouring operations and on completion, are free to function as intended

306 Construction Joints

Periods of stoppage in concrete of 3/4 hour or more are deemed to be construction joints
When the location and type of construction joints are not shown on the drawings, submit proposed location and detail of construction joints to the Engineer for his approval prior to the start of formwork placement Site Engineer will direct treatment before depositing the new concrete against a construction joint

307 Bonding Fresh and Hardened Concrete

Before depositing new concrete on or against concrete which has set re-tighten forms roughen the set concrete surface clean off foreign matter and laitance and thoroughly wet to Engineer's approval Remove excess water cover the cleaned and wetted surfaces with a coating of 1 2 cement/mortar Place the new concrete against this before the mortar has attained its initial set Prior to placing concrete, submit a sample of concrete showing the degree of roughened and laitance removal proposed The following procedures for preparation of construction joint faces are approved
Vertical Joints - Paint face of form with an approved retarder Strip form the following day and remove retarded concrete with air-water jet to bare exposed aggregate face
Horizontal Joints - Spread 6mm bluestone chips on surface of freshly screeded concrete and blow off excess the following day with air-water jet
Comply with instructions on Engineer's drawings

308 Building In

A Conduits and Piping Place conduits and piping in concrete floors above the bottom steel and below the top steel Do not dislodge reinforcement
Where conduits and piping cross control joints make provision for clip joints or some other means of absorbing movement without fracturing

B Built-In Bolts etc Accurately build in bolts, lugs and other fittings provide holes and pockets as shown on the drawings Prevent movement of these items during concrete pour
Clear screwed or machined portions of fittings of mortar and grease
Temporarily fill voids in sleeves, inserts and anchor slots and readily removable materials to prevent the entry of concrete into the voids

C Waterstop Cast in waterstop as shown on the drawings, located in vertical wall joints or floor joints by the use of split shuttering or other means
Use waterstop in the maximum possible lengths mitre at corners and shop weld and seal at joints Make joints other than at changes of direction in location approved by the Engineer
Adequately secure and support in the correct position during placing concrete

D Grouting Attention is directed to the STRUCTURAL STEELWORK section of this specification

309 Preparation for Placing of Concrete

A Immediately before placing concrete in excavation ensure that the excavation is free from water and fallen materials and that the sides of excavations are such that no material will fall into freshly placed concrete

B Ensure that formwork ready for the placing of concrete is complete with surfaces smooth and clean, immediately before placing remove excess water mud and debris and secure reinforcement in place remove surplus end of tie-twine, surplus nails and other extraneous metal objects in contact with the forms, make sure that expansion joint material, anchors and other embedded items are in position
Give the Engineer one working day's notice of the intention to pour so that approval may be given in time

310 Access and Inspection Openings

Provide temporary openings at the base of the column and wall forms and at other points where necessary to facilitate cleaning and inspection Intermediate openings for placing may be required by the Engineer

311 Edge Profiles and Fillets

To all exposed lower edges of concrete beams and slabs, provide 30mm timber fillets in continuous lengths, stopping 75mm short at ends and column faces To upper edges of beams and slabs form up for stepped face generally as detailed

312 Transporting of Concrete

Convey concrete from the mixer to the place of final position without delay and by means that will prevent segregation and loss of materials

Where necessary transport concrete on substantial gangways or barrow runs supported on stools clear of reinforcement

Remove hardened concrete and foreign materials from the inner surfaces of the conveying equipment

313 Placing of Concrete

Place concrete in compliance with AS 3600

314 Concrete Testing

A Generally Perform concrete tests in accordance with AS 1012 or subsequent amendment

Allow for the cost of making test specimens and for the supply of testing equipment and suitable personnel to carry out tests

B Materials Testing Submit in writing, test certificates from an independent Laboratory registered with the NATA as evidence that materials used comply with the requirements specified Allow the costs of such tests as required

C Slump Tests Provide slump tests reports on the first batch of concrete to be placed and at least once for every 20 cubic metres of concrete placed thereafter on that day

If in the opinion of the Engineer other batch of concrete appears to have an incorrect slump conduct slump tests as directed by the Engineer

Slump tests are to be conducted by, and at the expense of the Builder Concrete will be considered as complying with the specified slump tests when it complies with AS 3600

D Compression Tests The methods and frequency of sampling and the identification and testing of cylinders are to be in accordance with project control testing AS 3600

E Acceptance and Rejection of Concrete Acceptance and rejection of compressive strength of concrete by the Engineer will be in accordance with AS 3600

315 Compaction of Concrete

A Compact Concrete by mechanical vibration to the maximum practicable density, free of air or stone pockets Concrete not vibrated will be rejected

B Have on site sufficient vibrators of an approved pattern and keep one spare vibrator to every two active vibrators

C To avoid segregation place concrete in position and then vibrate "Travelling" concrete by use of vibrators is likely to produce segregation and is not permitted

Operate immersion type vibrators in a near-vertical position and insert and withdraw them slowly

Allow them to penetrate and revibrate the concrete in the upper portion of the underlying layer

D Do not leave vibrators when in action, lying unattended on formwork reinforcing or in concrete Keep vibrator heads clean and free of mud or other deleterious matter when inserted into the concrete

E Vibrate concrete in layers not exceeding 450mm in thickness and avoid contact of the vibrating head with surfaces of the forms

316 Floor Finishes

Finish floor slabs monolithically with steel trowel or as detailed on drawings or on Schedule of Finishes

317 Curing and Protecting Concrete

A Protect freshly cast concrete from premature drying and excessively hot or cold temperatures Erect windbreaks to shield the concrete surface during and after placing Maintain the concrete at a reasonably constant temperature with minimum moisture loss for

the curing period, refer AS 3600
Take responsibility for the curing and protection of the concrete

B Cure as soon as the surface of the concrete has hardened sufficiently to prevent damage but in no case later than two hours after the finishing operation has been completed
Cure by the following means
1 The use of waterproof paper or
2 The use of an approved polyethylene building film
3 The use of other approved moisture retaining covering
If a method other than polyethylene film is adopted secure the covering material against the concrete for the full length of edges and laps and at frequent intervals between so that no air circulation at the concrete surfaces occurs

C Period of Curing continue final curing for seven days for normal Portland cement concrete
For high early strength concrete, continue the final curing for three days
Prevent rapid drying out at the end of the curing period
Keep wet steel forms heated by the sun and wood forms in contact with the concrete during the final curing period

D Temperature When the mean temperature of the air during curing is less than 5 deg C maintain the temperature of the concrete between 10 deg C and 20 deg C for the required curing period
Where necessary make arrangements to maintain this temperature in advance of concreting adequate for the purpose
When the mean temperature of the air is in excess of 30 deg C during curing and moist curing is not employed cover the surface with an approved heat reflecting plastic membrane Apply this treatment for the whole of the curing period

E Curing Off-Form Concrete Take special care with curing off-form concrete to avoid differences in colour Prevent rapid or localised drying-out during the first seven days after pouring Maintain the form face in contact with the concrete up to the moment of striking
Programme stripping times to ensure that surfaces throughout the job are exposed at similar ages differing by not more than four and preferably two or less hours
Ponding is preferable for horizontal surfaces Use heavyweight covers well secured and in continuous contact
Apply curing compounds generously if used to prevent local moisture loss

318 Stripping of Formwork
Strip formwork in accordance with the recommendations of AS 3610 Table "Recommended Minimum Stripping Times" If construction loads greater than the live load shown on the drawings are placed on the structure fix emergency shoring and tomming to the satisfaction of the Engineer

319 Cleaning
Remove debris and form work from each area after stripping concrete as work sections are completed
Leave each area clean to the satisfaction of the Architect/Engineer

320 Completion
Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

SECTION 04210
BRICKWORK

PART I GENERAL

101 Scope

General Supply and build the brickwork shown on the Drawings or needed to complete the brickwork, including but not limited to the following
Labour and materials
Building in of miscellaneous items provided by others
Staging and scaffolding
Cleaning

102 Related Work

Co-operate and co-ordinate with the following trades
Concrete
Timber Windows
Doors and Door Frames
Fire-rated Windows
Structural Steel

103 Quality Assurance

Approved Samples At the start of brick laying arrange with the Architect to designate a beginning section of each type of brickwork not less than 6 courses high x 1200 long as the Control Sample When approved by the Architect the Section/s become the control standard/s for brickwork and remain part of work

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1576		Scaffolding
		There are 6 parts to this standard, 1991 – 2000
AS 1672 1		Limes for building
AS/NZS 2904	1995	Damp-proof courses and flashings
AS 3700	2001	Masonry Structures
		There is 1 supplement to this standard, 1999

105 Submissions

A Submissions required with Tender
Name of proposed manufacturer of bricks
B Submissions required prior to ordering
1 Product Data Showing the following information where appropriate
2 Samples Submit if requested by the Architect

106 Delivery, Handling and Storage

Co-ordination Reach agreement with the Architect about site provision for storage of sand cement and other materials and for mixing of mortar
Deliver handle and store products in accordance with manufacturer's recommendations and prevent damage, deterioration or loss

PART II MATERIALS

201 Bricks

Type preformed dry pressed clay bricks - conforming to AS 3700
Size 230 x 110 x 85

202 Mortar and Grout Materials and Types

A Materials Comply with AS 3700 as follows
1 Mortar Restrict the amount of fine aggregate passing a 75 micron test sieve to 5% maximum
2 Grout as above

B Types Comply with AS 3700 providing materials in the proportions described below

1 Mortar

Classification	Mix proportions (by volume) Type A Portland Cement	Building Lime	Sand
M1	0	1	3
M2	1	2	9
	1	2	8
M3	1	1	6
	1	0	5
M4	1	0 5	4 5

Mortar for Load Bearing Brickwork M3 (M4) (M2)
Mortar for Grouted and Reinforced Brickwork M3 (M4)
Mortar for Non-Load Bearing Brickwork M3 (M4) (M2)
Mortar for Repair of Lime Mortar Brickwork M1 (M2)
Mortar for bagging Same mortar as used for laying

2 Grout f'c not less than 12 MPa AS 3700

203 Miscellaneous Materials

Comply with AS 3700 as follows

A Wall Ties and Accessories Clause 2 7 (ties must be stainless steel of appropriate class)
B Reinforcement refer to Structural Engineer's details
C Special Lintels and Other Steel in Brickwork
Extend lintels 230mm minimum past each jamb of openings or as per Struct Eng rs req'ts
D Caulking Elastomeric sealing compound coloured to match mortar for general caulking including movement control joints Liquid polysulphide polymer, equal to Thioseal 5000
Neutral silicone equal to Dow Corning 790
E Head Restraint
100 x 100 x 6 x 450 long galvanised mild steel angle masonry anchored to concrete soffit on either side of wall where detailed by Structural Engineer at 1000 maximum centres
F Damp-proof Courses equal to ALCOR
G Flashings equal to ALCOR
H Expansion joint material Sikaflex 1A
I Control joint material Sikaflex 1A

204 Masonry Lintels

Where internal or external brickwork is to be supported over openings and no special lintels are detailed build in preformed masonry lintels, equal to PGH SPECTRE
Extend lintels 140mm past each jamb of openings
Where span exceeds maximum allowable for masonry lintels provide hot-dipped galvanised steel sections as nominated by the Structural Engineer

PART III EXECUTION

301 Mortar Mixing

Measure materials to ensure that the specified mix proportions are maintained AS 3700
Mix in a suitable mixing machine until a uniform blending of the components is achieved
Add water to create a mix that is as wet as can be conveniently used by the bricklayer
Except for the previously specified methyl cellulose water thickener, use no chemical to affect the plastic or other properties of mortar or as a substitute for lime without the Architect's permission

302 Mortar Life

Re-tempering to replace water lost by evaporation is encouraged until initial set begins Reject mortar which has begun its initial set and do not re-temper

303 Preparation

Review the project with other trades in relation to ducts piping, conduits, thimbles sleeves, etc or other item penetrating or to be built into brickwork and co-ordinate their installation

Obtain built-in items from their suppliers prior to starting brickwork
Clean the surface of concrete before laying bricks thereon
Set up pressed metal door frames plumb and level and brace as required Maintain bracing until walls are at least 1000 high and frame grouting has set

304 Laying

General Comply with applicable provisions of AS 3700 Set out brickwork so as to reduce cutting to a minimum and, in facework, to avoid irregular or broken bond
Make cuts in facework with a masonry saw
Carefully position openings for other trades to eliminate cutting
Build in accordance with the dimensions thicknesses and heights shown on Drawings, plumb level and in the designated position within the tolerances of AS 3700
Allow no part to rise more than 1000mm above adjacent unfinished work Rake back advanced work, build brickwork in bond and avoid toothing wherever possible
Build in as necessary reinforcements, arch bars lintels, frames straps, bolts, lugs wall ties, metalwork damp-proof courses and flashings, etc
Provide weepholes 1200 mm apart over damp proof course and flashings where these span across cavities Discuss set-out with Architect before commencing work Locate equally and centred over all openings
Re-lay in fresh mortar bricks accidentally moved after initial laying
Keep mortar stains to a minimum and protect horizontal ledges finished sills and the like from mortar droppings as work proceeds
Before mortar sets hard, remove excess mortar Scrub brickwork within 24 hours of laying using a bristle brush plus detergent if necessary
Protect new and incomplete brickwork with coverings, temporary bracing or the like - AS 3700

305 Damp Proof Course

Build in full width of all brick walls at ground level and as detailed, lapped full width at intersections and 150mm at joints In external skins lap with p v c vapour barrier In internal skins locate at one course above slab level

306 Flashings

Build in as detailed and elsewhere as necessary for weatherproofing including over exposed openings beams and under-sills Extend flashings 450 longer than openings and build in full width of outer skin, continuous across cavity and 50mm into inner skin one course above

307 Jointing and Finishing

Joint thickness 10mm within the tolerances given in AS 3700
Joint finish Brickwork for render cut off flush
Bagged finish Spread the mortar on exposed external/internal surfaces with a brush, sponge float rough cloth or other suitable device and then rub to achieve a uniform texture approved by the Architect
Protect adjacent surfaces as necessary and promptly remove bagging mortar spilt, splashed or otherwise lodged on them
Carry out bagging where indicated, as the work proceeds

308 Bonding and Tying

Build work in stretcher bond
Space wall ties in accordance with AS 3700
Keep cavities clean and free from mortar droppings
Fix to concrete or steel columns and at junction with concrete walls with frame ties built at least 250mm into brick joint and fix to the structure as close as possible to the course line

309 Metal Door Frames

Build in metal door frames as the work proceeds Generally allow for lugs at 400 to 450mm centres except FU door frames which have lugs to sizes and centres required by the fire test report pertaining to the particular type of door Grout solid cavities behind frames

310 Incidental Work

Chases Refer to AS 3700, and, as far as possible provide for chases to be made as the work rises No horizontal chase may exceed 1200mm in length and no vertical chase may be closer than

600mm to an element providing lateral support No chase may be more than 1/3 of the thickness of the wall

Perform miscellaneous incidental brickwork as required throughout and for other trades Make good after other trades

311 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

On completion clean up mortar droppings, debris etc , remove scaffolding, make good put-log holes and blemishes and leave work in a first class condition

Protect face work surfaces where necessary to avoid damage during other building operations

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO STRUCTURAL ENGINEER'S SPECIFICATION AND DETAILS)

General Supply and build the blockwork shown on the Drawings or needed to complete the blockwork including, but not limited to the following
Labour and materials
Building in of miscellaneous items provided by others
Staging and scaffolding
Cleaning

102 Related Work

Co-ordinate and co-operate with the following trades
Concrete
Structural Steel
Doors and Door Frames
Fire Rated Doors and Door Frames

103 Quality Assurance

Provide manufacturer's certification that blocks supplied are of the specified type and strength and were manufactured in accordance with current Australian Standard
Approved Samples At the start of blocklaying arrange with the Architect to designate a beginning section of each type of facework not less than 6 courses high x 1200 long as the Control Sample/s When approved by the Architect the Sample/s will become the control standard/s for blockwork and remain part of work

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1576		Scaffolding *There are 6 parts to this standard 1991 – 2000*
As 1672 1		Limes for building
AS/NZS 2699	2000	Built-in components for masonry construction *There are 3 parts to this standard*
AS 2701		Methods of sampling and testing mortar for masonry constructions *There are 4 parts to this standard, 1984 - 2001*
AS/NZS 2904	1995	Damp-proof courses and flashings
AS 3700	2001	Masonry Structures *There is 1 supplement to this standard, 1999*

105 Submissions

A With tender Name of proposed block manufacturer
B Prior to ordering
1 Product data showing the following information where appropriate
(a) Manufacturer's name and product details including a designation of proposed types and sizes
(b) Schedule of lintels

2 Samples Submit if requested by the Architect

106 Delivery, Handling and Storage

Co-ordination Reach agreement with the Architect about site provisions for storage of sand cement and other materials and for the mixing of mortar
Deliver handle and store products in accordance with manufacturer's recommendations and prevent damage, deterioration or loss

PART II MATERIALS

201 Blocks

Machine made precast concrete units with sharp arrises, free from distortion, cracks and other defects, uniform in colour and texture
Supply hollow blocks except where otherwise specified or required

Supply solid blocks where core holes would otherwise be visible or where required for fire rating or other purposes Match colour and texture of solid and hollow blocks in face work
Supply matching half-blocks, half-height blocks closers and lintel and bond beam blocks as required

A Strength Grade refer to Structural Engineer's details
B Colour standard grey
C Sizes and types refer to Structural Engineer s details

202 Mortar and Grout Materials and Types

A Materials Comply with AS 3700 as follows
1 Mortar Restrict the amount of fine aggregate passing a 75 micron test sieve to 5% maximum
2 Grout As above

B Types Comply with AS 3700 providing materials in the proportions described below
1 Mortar

Classification	Mix proportions (by volume) Type A Portland Cement	Building Lime	Sand
M1	0	1	3
M2	1	2	9
	1	2	8
M3	1	1	6
	1	0	5
M4	1	0 5	4 5

Mortar for load bearing blockwork M3 (M4) (M2)
Mortar for grouted and reinforced blockwork M3 (M4)
Mortar for non-load bearing blockwork M3 (M4) (M2)
Mortar for bagging M3
2 *Grout f'c not less than 12 MPa (AS 3700 Section 10 7)*

203 Miscellaneous Materials

Comply with AS 3700 as follows

A Wall ties and accessories Clause 2 7 (ties must be stainless steel of appropriate class)
B Reinforcement refer to Structural Engineer's details
C Lintels and other steel in blockwork refer to Structural Engineer's details
D Caulking Elastomeric sealing compound coloured to match mortar for general caulking including movement control joints
Liquid polysulphide polymer equal to Thioseal 5000
Neutral silicone equal to Dow Corning 790
E Head restraint
100 x 100 x 6 mild 450 long steel angle masonry anchored to concrete soffit on either side of wall
Proprietary anchor equal to Brunswick Sales Pty Ltd Fax No (03) 388 0272 MFA4/1 or MFA4/M/B at 1000 maximum centres
F Damp-proof Courses to comply with AS 2904
G Flashings to comply with AS 2904
H Expansion joint material equal to Sikaflex 1A
I Control joint material equal to Sikaflex 1A

PART III EXECUTION

301 Mortar Mixing

Measure materials to ensure that the specified mix proportions are maintained AS 3700
Mix in a suitable mixing machine until a uniform blending of the components is achieved
Add water to create a mix that is as wet as can be conveniently used by the block layer
Except for the previously specified methyl cellulose water thickener use no chemical to affect the plastic or other properties of mortar or as a substitute for lime without the Architect's permission

302 Mortar Life

Re-tempering to replace water lost by evaporation is encouraged until initial set begins Reject mortar which has begun its initial set and do not re-temper

303 Preparation

Review the project with other trades in relation to ducts piping conduits thimbles sleeves etc or other item penetrating or to be built into blockwork and co-ordinate their installation
Obtain built-in items from their suppliers prior to starting blockwork
Clean the surface of concrete before laying blocks thereon
Set up pressed metal door frames plumb and level and brace as required Maintain bracing until walls are at least 1000 high and frame grouting has set

304 Laying

General Comply with applicable provisions of AS 3700 Set out blockwork so as to reduce cutting to a minimum and in facework, to avoid irregular or broken bond
Make cuts in facework with a masonry saw
Carefully position openings for other trades to eliminate cutting
Build in accordance with the dimensions thicknesses and heights shown on drawings, plumb, level and in the designated position within the tolerances of AS 3700
Allow no part to rise more than 1000mm above adjacent unfinished work Rake back advanced work build blockwork in bond and avoid toothing wherever possible
Build in as necessary reinforcements arch bars lintels frames straps bolts lugs wall ties metalwork damp-proof courses and flashings etc
Re-lay, in fresh mortar, blocks moved after initial laying
Keep mortar stains to a minimum and protect horizontal ledges finished sills and the like from mortar droppings as work proceeds
Before mortar sets hard remove excess mortar Scrub blockwork within 24 hours of laying using a bristle brush plus detergent if necessary
Protect new and incomplete blockwork with coverings temporary bracing or the like - AS 3700

305 Jointing and Finishing

Joint thickness 10mm within the tolerances given in AS 3700
Joint finish Blockwork for render cut off flush
Face blockwork ironed
Bagged finish Spread the mortar on exposed external/internal surfaces with a brush, sponge float rough cloth or other suitable device and then rub to achieve a uniform texture approved by the Architect
Protect adjacent surfaces as necessary and promptly remove bagging mortar spilt, splashed or otherwise lodged on them
Carry out bagging as the work proceeds

306 Bond Beams

Provide bond beams to block walls where required by the Structural Engineer s details
Where possible form bond beams continuous with lintels Reinforce with mild steel rods bent as required to follow wall pattern Lap a minimum of 400mm at joints and corners and tie with 18 swg wire
Provide clear space between rods and block shell and fill block with concrete as specified compacted into the block and finished flush at top Where block cavity leaves insufficient space for concrete infilling grout with 1 2 5 cement sand mortar

307 Lintels, Concrete Masonry

Build block lintels occurring to heads of openings in block walls Form with standard bond beam blocks of a thickness to suit the leaf and extend a minimum of one full block on either side of jamb or further as required to suit bonding Allow for cutting of blocks needed to suit height of openings
Reinforcement Reinforce with structural grade mild steel bar in accordance with the following schedule

Width of Bond Beam/Lintel	**Span Reinforcing**
90mm	Maximum 1000mm 1/12mm bar
140mm	Maximum 1800mm 1/16mm bar

Bond beam grout fill with 30MPa concrete

Where block lintels abut walls or columns support on mild steel angle bracket welded or bolted to wall or column

308 Bonding and Tying

Build work in stretcher bond
Space wall ties in accordance with AS 3700
Keep cavities clean and free from mortar droppings
Fix to concrete or steel columns and at junction with concrete walls with frame ties built at least 250mm into block joint and fix to the structure as close as possible to the course line

309 Door Frames

Build in door frames as the work proceeds Generally allow for lugs at 400 to 450mm centres except FU door frames which have lugs to sizes and centres required by the fire test report pertaining to the particular type of door Grout solid cavities behind frames

310 Incidental Work

Chases Refer to AS 3700 and, as far as possible provide for chases to be made as the work rises No horizontal chase may exceed 1200mm in length and no vertical chase may be closer than 600mm to an element providing lateral support No chase may be more than 1/3 of the thickness of the wall
Perform miscellaneous incidental blockwork as required throughout and for other trades Make good after other trades

311 Field Quality Control

Tests
Have the following tests performed in a laboratory NATA registered for the particular test
Supply copies of the resulting test certificates to the Architect

TEST	***TEST METHOD***
For Mortar Sampling method	Refer Structural Engineer
For Blockwork Compressive strength	Refer Structural Engineer

312 Cleaning of Facework

Take care to keep walls clean constantly Should further cleaning be necessary, use hydrochloric acid not stronger than 5% treating only a small area at one time Wet the wall prior to applying the acid work from the top down and thoroughly wash off after brushing Do not leave acid solution on wall at stoppage of work

313 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect
On completion clean up mortar droppings debris, etc remove scaffolding make good put-log holes and blemishes and leave work in a first class condition
Protect facework surfaces where necessary to avoid damage during other building operations

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO THE STRUCTURAL ENGINEER'S DETAILS & SPECIFICATION)

Supply fabricate and install a complete structural steel system including but not limited to

A Steelwork shown on the Architect/Engineer's Drawings specified herein or as described in his instructions issued during the currency of the work It includes surface treatment, storage, delivery to the site steel to steel connections and their fastenings steel to concrete and their fastenings, miscellaneous attachments and anchor bolts

B Erection of the steelwork shown on the Architect/ Engineer's Drawings and includes off-loading, erection field welding, making steel to steel connections, connection to anchor bolts, permanent grouting and repairs to surface treatment

102 Related Work

Co-ordinate and co-operate with the following trades

103 Quality Assurance

Do work in accordance with the Drawings and Specifications which form part of this contract, and further details and/or instructions issued by the Architect/Engineer during the currency of the works
Submit evidence of experience appropriate to the class of work required Install under the direct supervision of a capable Foreman, experienced in the class of work under construction

104 References

Conform to the latest edition including amendments of the following Australian Standards (except where varied by this Specification or the Contract Drawings)

AS/NZS 1554		Structural Steel Welding
		AS/NZS 1554 1 2000 Welding of steel structures
		There are 5 other parts to this standard, 1983 - 2002
AS 1627		Metal finishing - Preparation and pretreatment of surfaces
		There are 7 parts to this standard, 1989 - 2002
AS/NZS 3678	1996	*Structural steel - Hot rolled plates floorplates and slabs*
AS/NZS 3679	1996	Structural steel
		There are 2 parts to this standard
AS/NZS 3750		Paints for steel structures
		There are 18 parts to this standard, 1994 - 2002
AS 4100	1998	Steel structures
		There is 1 supplement with this standard 1999
AS/NZS 4600	1996	Cold-formed steel structures
AS/NZS 4673	2001	Design of Cold-formed stainless steel structures
AS/NZS 4680	1999	Hot dipped galvanised (zinc) coatings on fabricated ferrous articles
HB48 - 1999		Steel structures design handbook

105 Delivery, Handling and Storage

Handle and store materials by methods and appliances that will not over-stress or deform the members Separate materials on site from surface of ground
Members bent or buckled from handling or storing will be liable to rejection
Supply bolts, nuts and washers in grit-free containers and stored in water-tight premises Reject burred damaged corroded or otherwise unserviceable bolts

PART II MATERIALS

201 Materials

General
Supply materials required to complete the works under this Section in accordance with the Contract Documents and within the tolerances specified Materials which do not comply will be rejected
Steel Supply
Unless otherwise shown on the Drawings, comply with AS/NZS 3678 and AS/NZS 3679 Do not use other types and grades of steel without written approval

202 Shop Drawings

Refer DOCUMENT 00800 Clause 27 Provide a complete set of Shop Drawings for required components

203 Fabrication

Fabricate finish in accordance with AS 4100

Do not exceed the end clearances shown on the Drawings Where these are not shown, ascertain the clearances used in the design of the connections

204 Connections

A General

Supply end cleats brackets and other connections, not specifically detailed on the Drawings to suit the location and forces shown thereon with gauge and edge distances in accordance with AS 4100

B Bolting General

Supply bolts in bearing of such lengths that no threaded portion crosses the interface of the parts joined Place at least one washer under the bolt head or nut whichever is to be rotated Provide taper washers where the part under the bolt head or nut is not perpendicular to the centre-line of the bolt

C Welding

Do manual welding in accordance with AS/NZS 1554

Do semi-automatic welding in accordance with AS/NZS 1554

D Miscellaneous Attachments

Allow for the drillings, cleat and other fitments indicated on the Contract Drawings or shown on other relevant Drawings and required by other trades

Be entirely responsible for supply of necessary information to the Steel Fabricator

205 Hot Dip Galvanising

Where scheduled or specified galvanised steel after chemical descaling in accordance with AS 1627 and AS/NZS 4680, so that rust, mill scale, oil grease and other foreign matter is removed leaving a clean surface of metal

Then immerse steel in a bath of molten zinc so that when withdrawn the zinc coating solidifies to a dry film thickness in compliance with AS/NZS 4680

Reinstate transport and erection abrasions site welds, etc by thoroughly wire brushing affected areas to achieve a clean sound substrate and patch coating with a Zinc-rich paint with a film thickness of 100 microns

206 Surface Treatment of Steel

Clean steelwork free from loose rust loose mill scale dirt oil and grease or by sand-blasting - Class 2 5 Apply a coat of inorganic zinc silicate, 100 microns thick Refer AS 1627

207 Inspection Before Delivery

Material and work is subject to inspection before painting and delivery Provide the necessary access and facilities

Where steel has been inspected at the shop before being delivered to the site such inspection does not relieve the Contractor of his responsibility to carry out the work in accordance with the Drawings and this Specification

PART III EXECUTION

301 Examination

Inspect site conditions both before fabrication and delivery of steel

Ensure that on delivery, materials can be directly installed

Report discrepancies immediately when they are found and obtaine instruction before continuing with the affected portion of the work

Start of work means total acceptance of conditions

302 Erection

Comply with the requirements of AS 4100

Adopt an erection procedure such that members can be placed and fixed in position without distortion
Make safe during erection, against wind and erection stresses and loading conditions including those due to erection equipment
Allow for the cost of temporary erection bracing required and of the Engineer s requirements in connection with such bracing

303 Grouting of Baseplates

Set plates to precise level at centre of footing for future baseplate placement
Set plate in high strength mortar
After placement of column base plates, grout fill the void completely
Trim the grout on completion

304 Inspection on Site

Advise Engineer and/or Architect when erected steel is ready for inspection

305 Adjustments

Following erection adjust the installation as required by Engineer
Touch up abraded or missing paint areas Refer next clause

306 Cleaning

Clean the installed steelwork and touch up with zinc rich primer paint of matching colour
Ensure that the touch up paint is compatible with the factory applied material

307 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope (REFER ALSO TO THE STRUCTURAL ENGINEER'S DETAILS & SPECIFICATION)

Design engineer, supply and install a complete cold formed metal framing including but not limited to

Loadbearing roof framing for structural plywood substrate with waterproof membrane roofing system

102 Related Work

Co-ordinate and co-operate with the tradesmen preparing floors, installing windows and doors and weatherproofing material including casting in of anchors where required

103 Quality Assurance

A Manufacturer Qualifications Not less than six (6) years continuous experience in the manufacture of the product types specified

B Installer Qualifications Installer is to have not less than three (3) years continuous experience in the erection of specified material

104 References

Comply with applicable portions of the following Australian Standards

AS 1170 Minimum design loads on structures *(known as the SAA Loading Code)*
- 1170 0 2002 Structural design actions – General principles
- 1170 1 2002 Structural design actions - Permanent imposed and other
- 1170 2 2002 Structural design actions - Wind actions
- 1170 3 1990 Snow loads
- 1170 4 1993 Earthquake loads

AS 3623 1993 Domestic metal framing

Comply with relevant Authority's requirement for fire-rated installation

105 Submissions Required Prior to Fabrication

Shop Drawings Refer DOCUMENT 00800 Clause 27 Provide Shop Drawings showing the following information where appropriate to the items

Layout (sectional plan and elevation of complete assembly)
Full size section of members
Methods of assembly type and location of exposed screws
Methods of installation including fixings anchorage flashings
Provision for expansion (thermal)
Junctions and trim to adjoining surfaces
Fittings and accessories

106 Delivery, Handling and Storage

Handle materials with care Do not store on site Install directly in place as instructed by manufacturer

Where possible deliver pre-assembled panels of framing , roof trusses etc, ready for immediate placement and connection

PART II MATERIALS

201 Acceptable Manufacturers

The following manufacturers of frames are acceptable LYSAGHT, ONE STEEL

Other manufacturers may be acceptable subject to approval by the Architect

202 Materials

Wall floor and roof framing components manufactured from corrosion resistant steel materials

Match components detailed on Drawings or an alternative approved in writing by the Architect

203 Installation Criteria

A Movement Permit free and noiseless movement of the components due to thermal effects structural effect wind pressure, effect of dead loads, without strain to the frames without buckling of components and without excessive stress to members or assemblies

B Contact with Other Materials Coat metal surfaces in contact with mortar, concrete, plaster, masonry wet-application of fire-proofing and absorbent materials with an anti-galvanic, moisture barrier material Isolate with inert material dissimilar metals for the prevention of electrolytic action and corrosion

204 Detail Design Provisions

A General The Architect's Drawings are to be considered essentially schematic except for profiles of exposed surfaces and panel arrangement where indicated If in the opinion of the Builder a change of profile is required in order to meet the specification arrange through the Architect for a review of the condition Design the assembly, reinforcing and anchorage to suit each specified condition in an acceptable manner complying with the requirements specified herein

B Tolerances Design frames to accommodate building tolerances and when completed within the following tolerances

1 Deviation from plumb level or dimensioned angle within 3mm per 3 5m of length of member or 6mm in total run in line

2 Deviation from theoretical position on plan or elevation including deviation from plumb level or dimensioned angle not to exceed 9mm total at location

3 Change in deviation not to exceed 3mm for 3 5m run in direction

205 Fabrication

Form junctions so that no fixings such as pins, screws pressure indentations and the like are visible on exposed faces Show on Shop Drawings fixings which will be exposed Cut edges, drill holes rivet joints and clean flat sheets neat, free from burrs and indentations Remove sharp edges without excessive deformation Fit mitred joints accurately to a fine hairline
Pre-assemble and match mark before delivery

PART III EXECUTION

301 Examination

Inspect site conditions before start of work on site before delivery of materials Ensure conditions are satisfactory for installation
Perform rectification required before delivery of materials
Start of work means total acceptance of conditions

302 Preparation

Prepare surfaces affected by the installation in accordance with material manufacturer's instructions

303 Frame Anchorage

Fabricator is required to supply the anchorage devices to the Builder for building in by others and check that devices are located as required to suit the requirements of the fabrication for positive and permanent fixing Insulation Isolate dissimilar metals at interfaces with bitumen based or nylon shim materials to prevent galvanic action
Make good concrete or masonry damaged during the installation of masonry anchors at no cost to the Proprietor

304 Installation Tolerances

Wall frames Vertical Permitted maximum tolerance is 3mm in 3500mm
Floor frames Horizontal Permitted maximum tolerance is 3mm in 3500mm
Except where otherwise directed
Secure in place in accordance with manufacturer's instructions

305 Cleaning

Remove rubbish and debris resulting from the fabrication and erection operations each day

306 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION

PART I GENERAL

101 Scope

Supply engineer and install required general and architectural metalwork items including but not limited to
Fixing brackets
Equipment supports
Timber post and pergola supports
Balustrades and handrails
Metal fence grille panels
Metal Entry gates
Mechanical ventilation grilles

102 Related Work

Co-ordinate and co-operate with the following Trade Sections
Concreter
Carpenter and Joiner
Bricklayer

103 Quality Assurance

Work of this Section will be performed by experienced craftsmen familiar with the quality required in this class of work

104 References

Comply with applicable portions of the following Australian Standards

AS/NZS 1554		Structural steel welding *There are 6 parts to this standard, 1983 - 2002*
AS 1627		Metal finishing - Preparation and pretreatment of surfaces *There are 7 parts to this standard, 1989 - 2002* 1627 6 2004 Chemical conversion treatment of metals
AS 1664	1979	Rules for the use of aluminium structures *(known as the SAA Aluminium Structures Code) There are 2 parts and 2 supplements to this standard*
AS/NZS 1734	1997	Aluminium and aluminium alloys - Flat sheet, coiled sheet & plate
AS/NZS 1866	1997	Aluminium and aluminium alloys - Extruded rod bar solid and hollow shapes
AS 4100	1998	Steel Structures *There is 1 supplement with this standard, 1999*
AS/NZS 4673	2001	Design of Cold-formed stainless steel structures
AS/NZS 4680	1999	Hot-dipped galvanised coatings on fabricated ferrous articles

Comply with requirements of statutory and local authorities

105 Shop Drawings

Comply with DOCUMENT 00800, Clause 27
Provide Shop Drawings for major items supplied hereunder
A Contract Drawings and details provided are indicative as to general and minimum requirements and do not show conditions
Develop details not shown and in conformity with the indicative details shown
B Take and confirm dimensions on site, before preparing Shop Drawings where possible
C Submit detailed Shop Drawings for fabrication and installation of major metalwork Show plans elevations and detailed sections indicate materials finishes types of joinery, fasteners, anchorages and accessory items Provide setting diagrams and full- scale templates of blocking, anchorages, sleeves and bolts installed by others

106 Samples

A Sample Welds If requested provide samples of weld types including samples of railings joined at right angles and at typical acute angles, welded and ground smooth, for approval If not acceptable, provide additional samples until approved Approved samples establish quality of similar work of this Section

B Check on Delivery Request Architect to check materials on delivery to site for quality, and materials not meeting the requirements of this Specification or equal to approved samples will be rejected Return rejected materials to the Fabricator at the Fabricator's expense

C Finish Provide samples of specified finishes when requested

PART II MATERIALS

201 Materials

a	Item	Internal Stair Balustrade and Handrail top bar and posts
	Material	304 stainless steel 50x10 solid sections intermediate posts 50x50 equal angle s s end posts as detailed
	Finish	electropolished
c	Item	External and Internal balustrades infill
	Material	4mm dia multi strand s s wires with swaged ends & 75x10 dia s s tension fixings
	Finish	stainless steel
g	Item	Pool Fence Panels
	Material	50x10 and 10 dia double hot dipped galvanised mild steel sections as detailed
	Finish	paint finish selected colour
i	Item	Floor Threshold Angles
	Material	extruded 50x50 aluminium angles as detailed
	Finish	natural
m	Item	Internal Stairs Hand rail Fixing Brackets
	Material	Aluminium stair rail bracket by Halliday&Baillie HB 500
	Finish	Pearl Chrome Finish

202 Finish

Unless specified otherwise materials exposed to weather maybe either

Mild steel - hot dipped galvanised after fabrication or chromate pre-treated followed by polyester powder coating

Finish internal steel after fabrication with zinc rich organic primer, or with inorganic zinc silicate paint

Comply with relevant codes of practice or Manufacturers' recommendations

Stainless steel – 316 grade, electropolished

203 Welding Steel

General Details of joints, the techniques of welding employed, the appearance and quality of welds made and the methods used to correct defective work, conform to requirements of AS/NZS 1554

Welds exposed to view continuous weld and grind smooth to Architect's approval

Concealed welds grind smooth before galvanising

Tack or skip welding at regular intervals very neat not permitted if material is to be hot dip galvanised

Remove weld spatter

Certification Only welders who have previously been qualified by tests may weld

Tack welding or skip welding will NOT be permitted where items are to be galvanised Weld continuously form joints and connections to exclude water and to permit draining during galvanising

Stainless steel welding refer AS/NZS 1554

204 Connection Design

General Design fabricated items so that possible work is done before delivery Fully protect for shipment Take possible care to prevent damage

A Welding External Items conform to the recommendations of AS/NZS 1554, noting particularly the design criteria

B Flanges Concealed where possible Sleeve connecting railings inside railing sections and secure with flush or set screws Except where access is impossible, connection screws and bolts will be on the underside of joints

C Fasteners on the top of railing sections will not be permitted

D Weld shop connections for steel fabrications and bolt field connections

E Provide smooth finishes to exposed surfaces with sharp well-defined lines and arrises Mill to a close fit machined joints Design necessary lugs brackets and similar items so that work can be assembled and installed in a neat, substantial manner

F Provide ample strength and stiffness by using appropriate metal thickness of assembly and supports

G Provide holes and connections as required to accommodate the work of other trades and for site assembly of metalwork Drill or punch and ream in the shop

205 Miscellaneous

Fasteners Provide required bolts, screws inserts fasteners, templates and other accessories required for a complete installation

Co-ordinate with other trades as to the proper fastening systems suitable for the substrates to which the item is to be secured Refer to Architect if in doubt

Fasten galvanised items with galvanised fasteners

PART III EXECUTION

301 Examination

Inspect site conditions before fabrication where possible and before delivery of materials Ensure conditions are satisfactory for installation Arrange for rectification required

Start of work means total acceptance of relevant conditions

302 Preparation

A Field measurements Do not delay job progress Allow for adjustments and fitting of the work in the field where taking of measurements might cause delay

B Co-ordination with work of others Furnish to each relevant trade foreman anchorages and setting Drawings diagrams templates and instructions for installation of items having integral anchors which are to be embedded in concrete or masonry construction Co-ordinate delivery of such items to the project site

303 Inspection and Reinstatement

A Check fabrications as they are unloaded at the project site for evidence of physical damage

Treat damaged fabrications as follows

1 Damage through galvanising Perform immediate inorganic zinc silicate paint or cold-galvanising repair Do not install until reinstated

2 Architectural metalwork Returned to shop for repair or replacement

B Verify anchors bolts and other required anchorage items for proper size and accurate location prior to erection

304 Installation

A Anchorage Except for anchorages furnished herein but placed by other trades set and secure necessary anchorages including concrete and masonry inserts, bolts, wood screws and other connectors as needed Perform cutting drilling and fitting as needed locating anchorages and holes to ensure proper positioning of completed work

B Fit During installation and assembly, form tight joints with exposed connections accurately fitted and reveals uniform Finish work accurately, plumb, level square and true in reference to adjacent construction Make tolerances conform to Australian Standards

C Finish Do not cut or abrade shop finishes which cannot be completely restored in the field The use of gas-cutting torch in the field for correcting fabrication errors will not be permitted under conditions Fabrications may be cut shorter with power hacksaws on site

Isolate dissimilar metals likely to be subject to moisture with inert materials not visible on completion of installation

305 External Railing and Stair Balustrades

Fabricate generally to detail, using 50dia Stainless steel top rails and 50x10mm intermediate posts, and 50x50 stainless steel angle end posts Where indicated install tensioned s s wires parallel to top rail at maximum 125 centres equally spaced, with ends fixed to flush button type s s end

connectors and concealed threaded tensioner maximum 75mm long, to each wire Fixing plates and baseplates to be concealed generally Coordinate with Concreter for setdowns where necessary

306 Internal Entry Stair and Apt E Living room Balustrades

Fabricate generally to detail using 50x10 stainless steel posts with rounded top edges (to form continuous flush surface with circular timber handrail) and pre-welded fixing plates for handrail attachment Where indicated install tensioned s s wires parallel to top rail at maximum 125 centres equally spaced with ends fixed to flush button type s s end connectors, and concealed threaded tensioner maximum 75mm long, to each wire Fixing plates and base plates to be concealed generally Coordinate with Concreter for set downs where necessary Pre-drill holes in posts fixing plates for fixing timber handrail (refer JOINER)

307 *Internal Stair Handrails*

Drill wall for stud positions to achieve handrail heights shown in details fix bracket to manufaturer s specifications (refer JOINER)

309 Pool Fence Panels and Gate

Fabricate generally to detail, using 50x10 galvanised m s flat surround with 10 dia m s rods at 125 maximum centres extending 100mm past top and bottom frame Fix to masonry walls or metal support posts using 20mm long x 30mm dia s s spacers

312 Timber Post support shoes

Fabricate generally to detail using 100x100 s s support plate welded to 100 high x 35 dia s s tube on 150 x 150 baseplate, with 75 x 100 x 3mm thick s s plate, pre-drilled for fixing Baseplate to be pre-drilled for fixing to concrete with masonry anchors

313 Threshold Angles

To all external door thresholds and elsewhere where indicated, install single length 50x50 aluminium angle weather bars Extend angle 150mm past extent of door opening Angles to be packed off concrete slab to finish 5mm above finished floor fixed using countersunk screws into masonry plugs Horizontal leg to face internal direction vertical leg to be externally covered in approved sealant continued at ends over first row of brickwork to provide continuity of support for waterproof membrane (refer MEMBRANES)

317 Field Quality Control

Where considered necessary by the Architect arrange for the manufacturer of products to instruct installers regarding correct installation

318 Protection

Cover Work Immediately following installation, wrap or cover architectural metalwork to avoid wear and tear of finish during subsequent construction

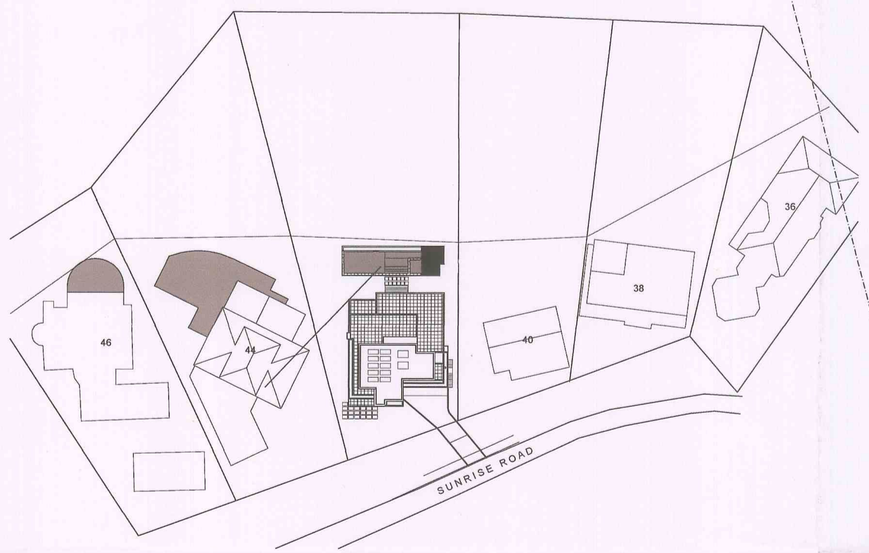
319 Cleaning

Clean materials installed to the satisfaction of the Architect
Remove temporary protective coatings

320 Completion

Complete contracted work in accordance with contract documents and written variation orders issued by the Architect

END OF SECTION



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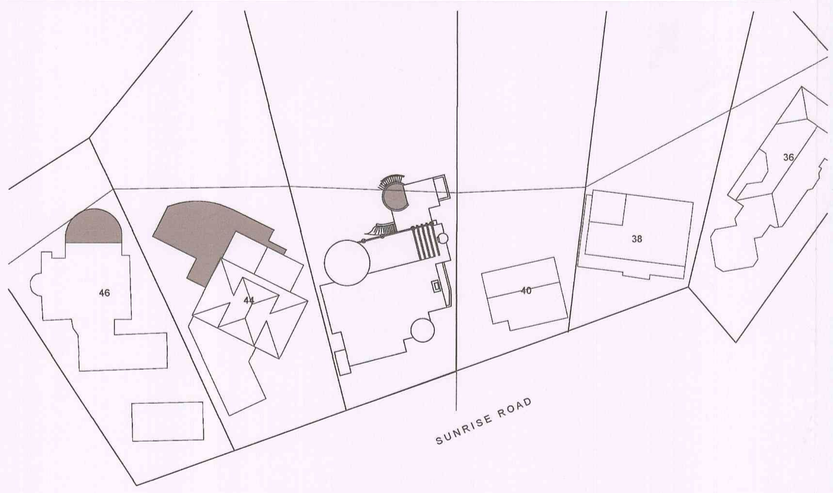

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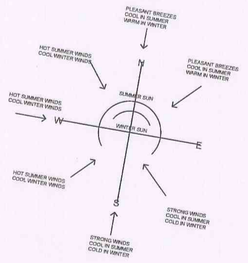
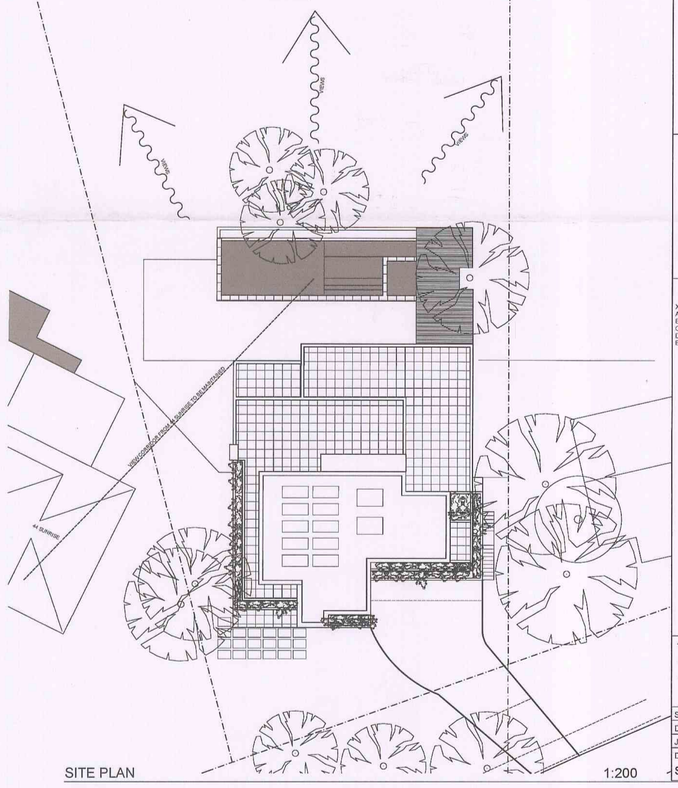




SITE PLAN 1:200

SUSAN ROTHWELL
° ARCHITECTS °
38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3165

N

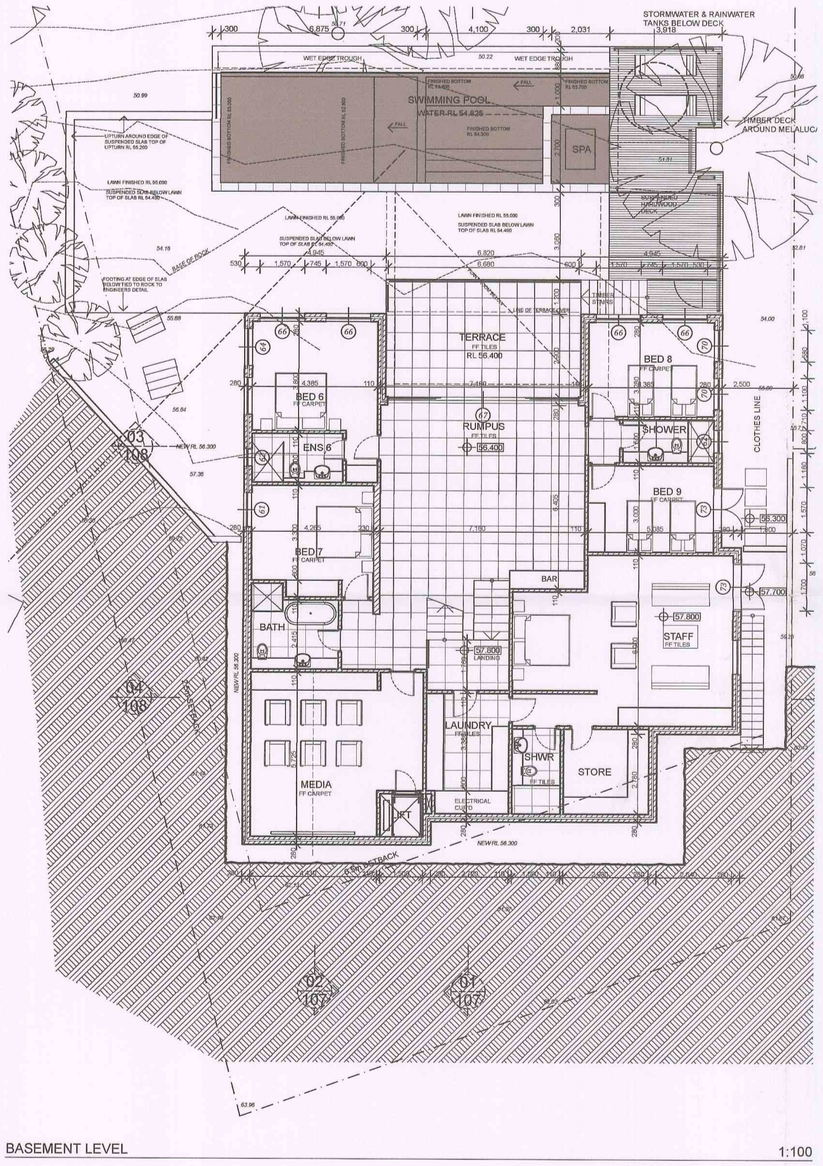
PROPOSED NEW RESIDENCE AT
42 SUNRISE RD, PALM BEACH
FOR
MRS. ROTHWELL

ISSUE
X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: UPDATED (05/09)

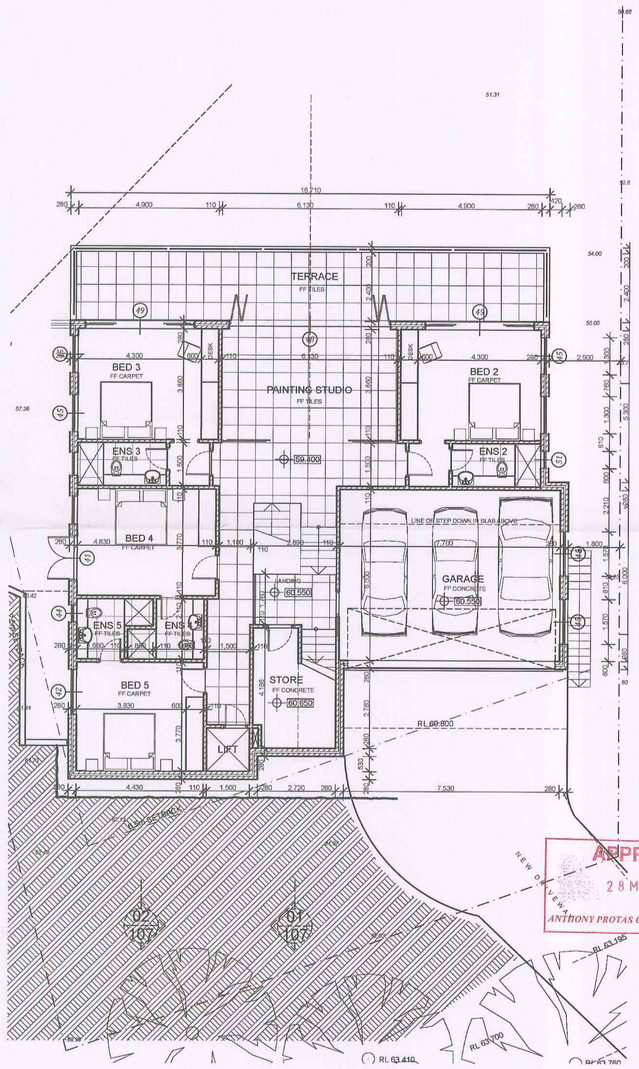
ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

TITLE
CONTEXT & SITE PLANS

SCALE (ON A2)	1:500 &1:200
DATE	MAY 2009
JOB NO.	sr42
DWG. NO.	sr42-101
ISSUE	E



BASEMENT LEVEL 1:100



LOWER GROUND FLOOR 1:100

SUSAN ROTHWELL
ARCHITECTS
38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

N

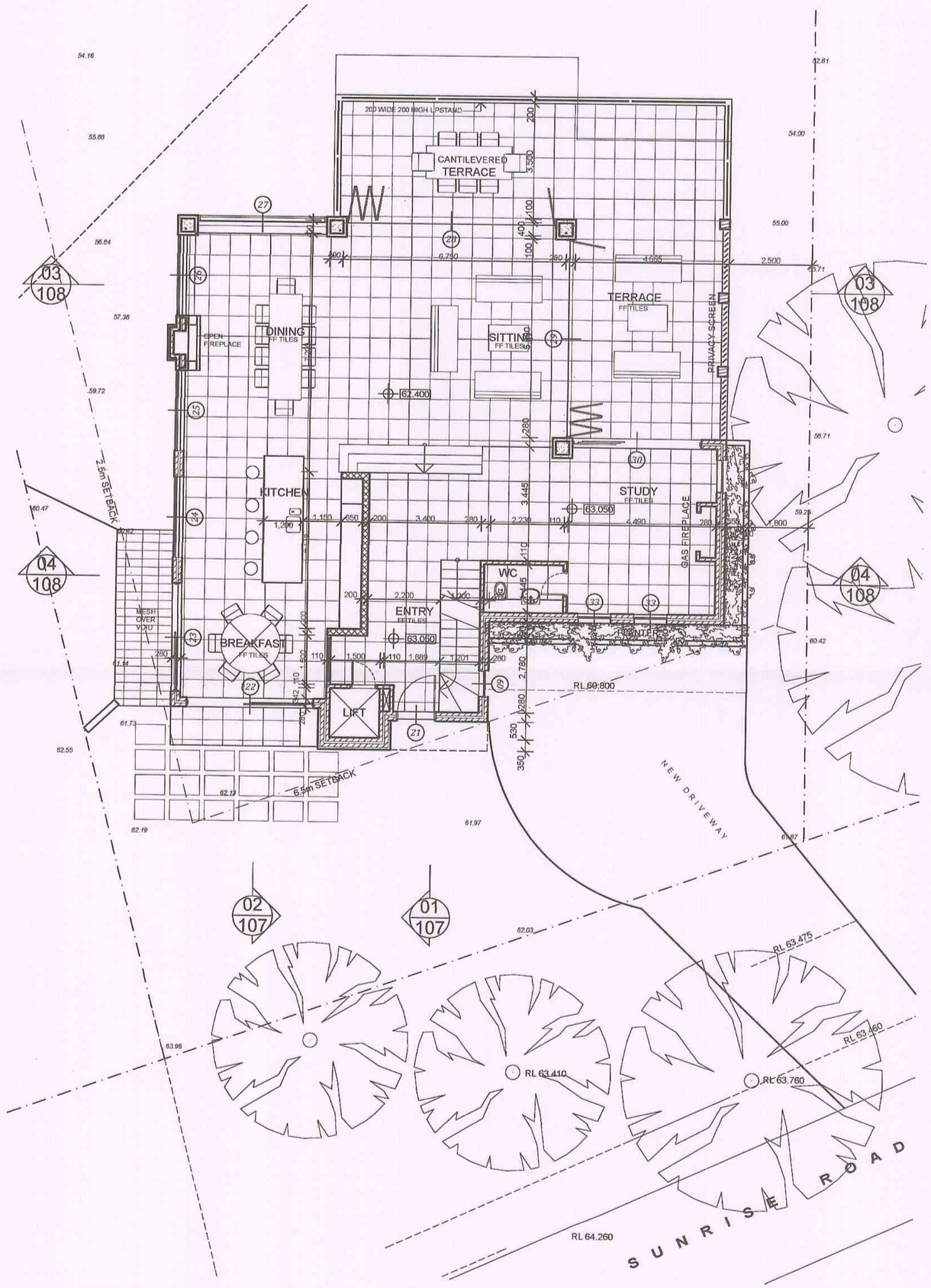
PROPOSED NEW RESIDENCE AT
42 SUNRISE RD, PALM BEACH
FOR
MRS. ROTHWELL

ISSUE
X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: UPDATED (02/09)

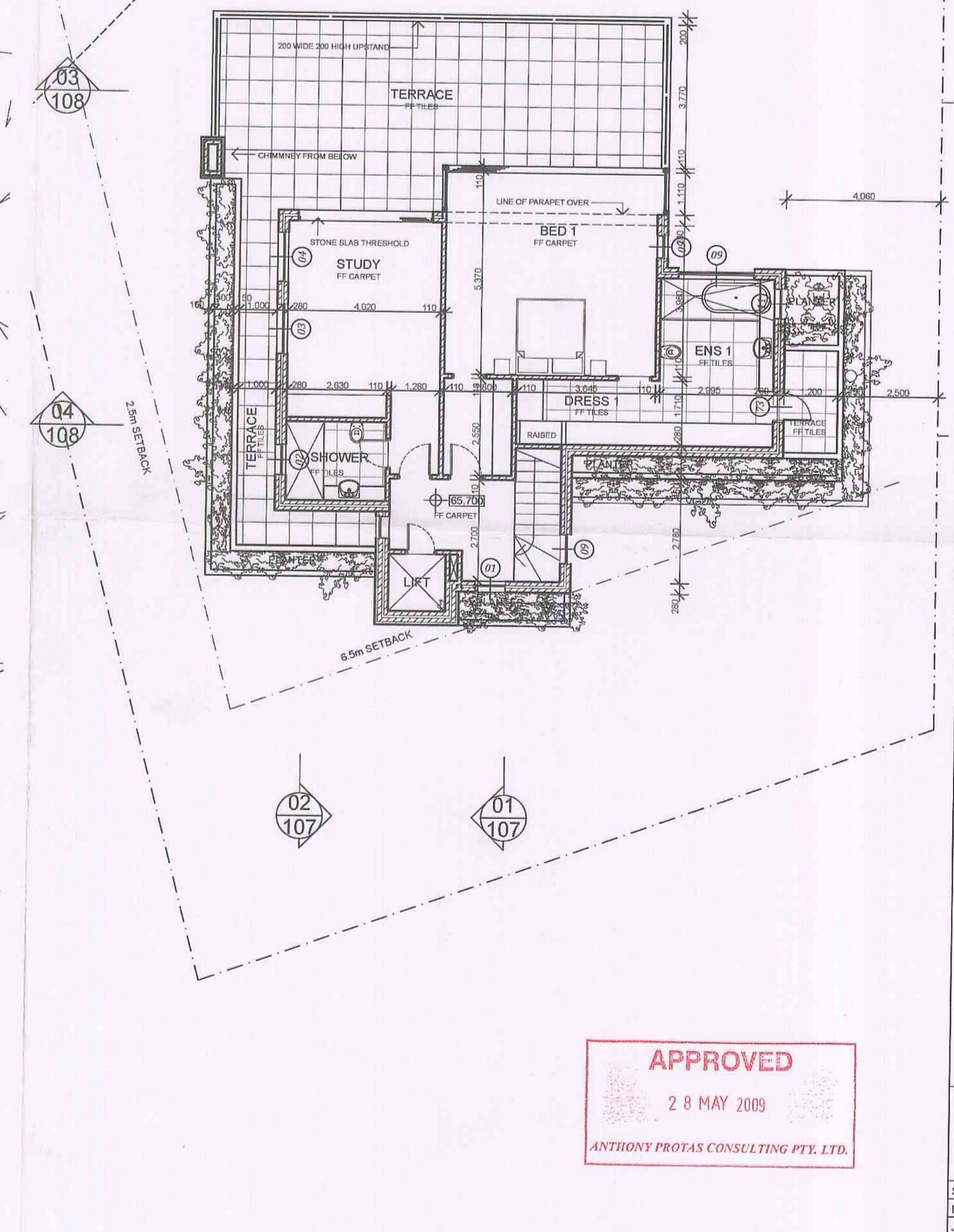
APPROVED
28 MAY 2009
ANTHONY PROTAS CONSULTING PTY. LTD.

TITLE
PLANS - BASEMENT & LOWER GROUND

SCALE (ON A2)	1:100
DATE	FEBRUARY 2009
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-102	F



GROUND FLOOR 1:100



FIRST FLOOR 1:100

APPROVED
2 8 MAY 2009
ANTHONY PROTAS CONSULTING PTY. LTD.

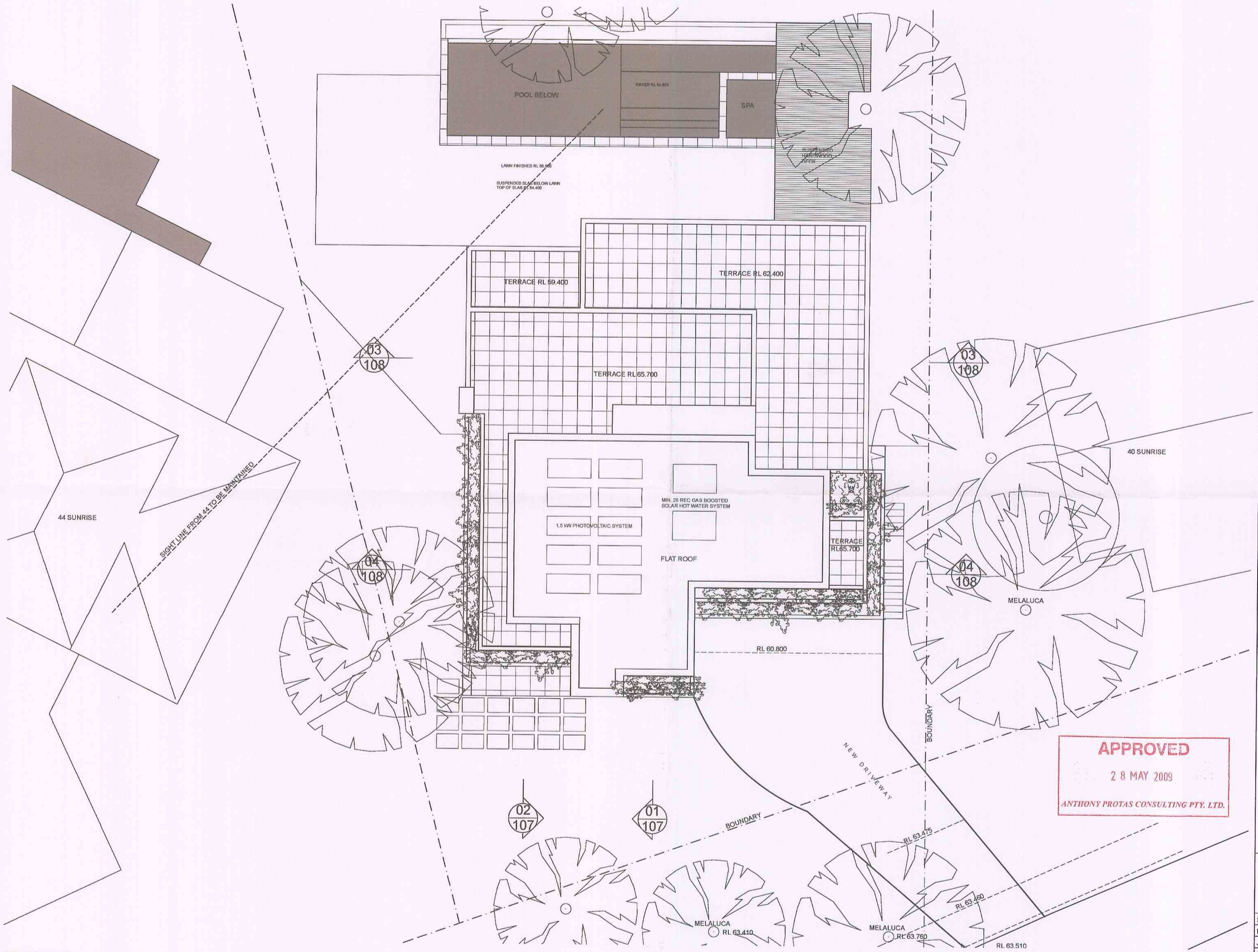
SUSAN ROTHWELL
° ARCHITECTS °
38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT
42 SUNRISE RD, PALM BEACH
FOR
MRS. ROTHWELL

ISSUE
X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: UPDATED (02/09)

TITLE
PLANS - GROUND & FIRST

SCALE (ON A2)	1:100
DATE	FEBRUARY 2009
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-103	F



APPROVED

2 8 MAY 2009

ANTHONY PROTAS CONSULTING PTY. LTD.

ROOF PLAN

1:100

SUSAN ROTHWELL
° ARCHITECTS °

38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT

42 SUNRISE RD, PALM BEACH

FOR

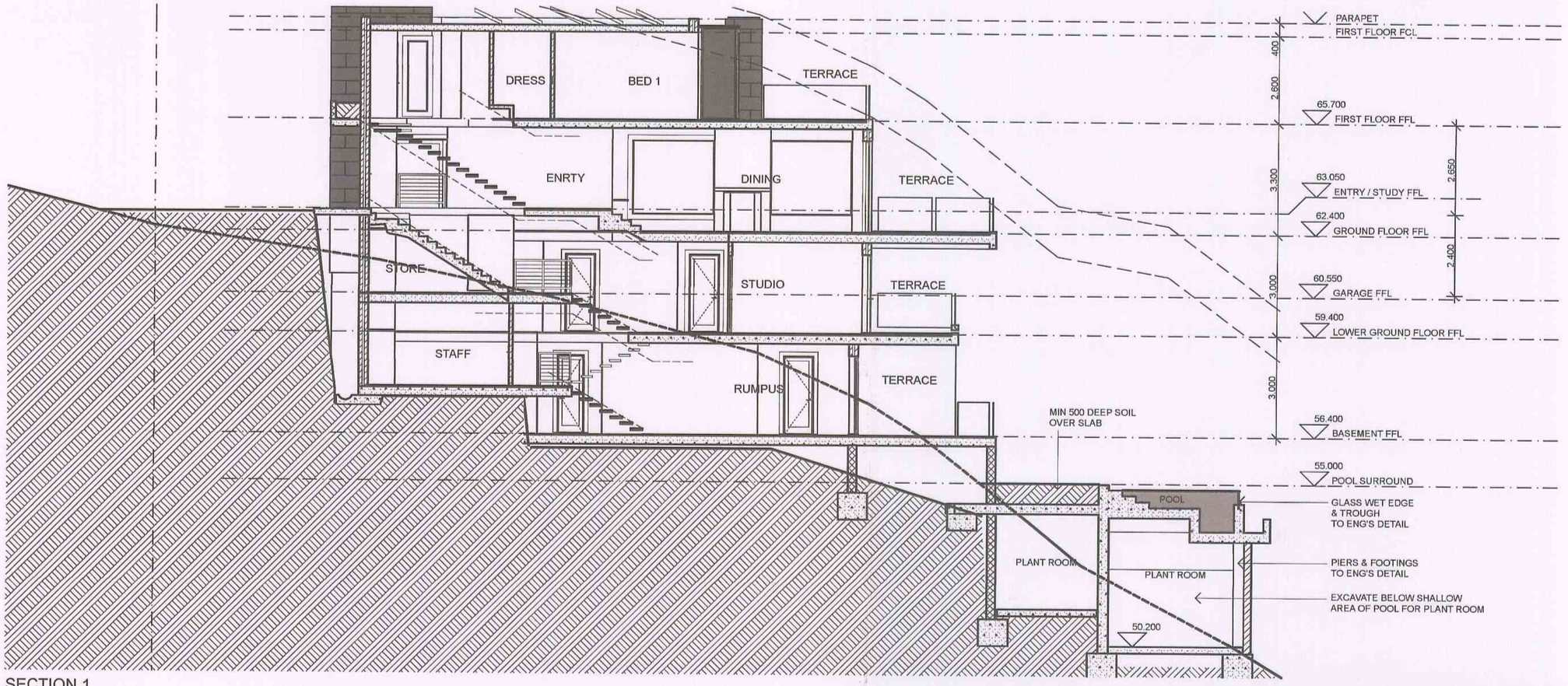
MRS. ROTHWELL

ISSUE

X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: UPDATED (02/09)

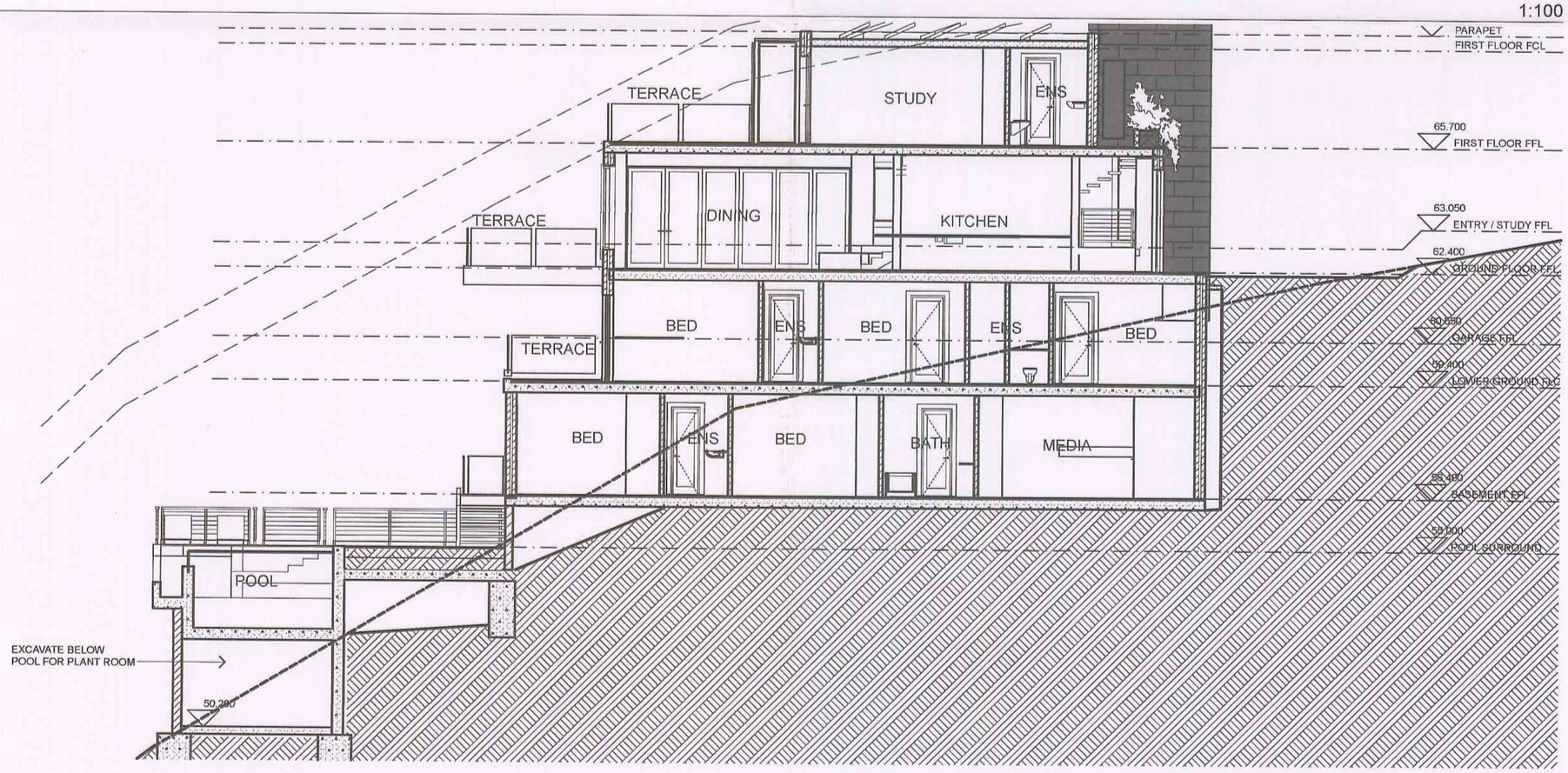
TITLE
PLAN - ROOF LEVEL

SCALE (ON A2)	1:100
DATE	FEBRUARY 2009
JOB NO.	sr42
DWG. NO.	sr42-104
ISSUE	F



SECTION 1

1:100



SECTION 2

1:100

SUSAN ROTHWELL
° ARCHITECTS °

38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT

42 SUNRISE RD,
PALM BEACH

FOR

MRS. ROTHWELL

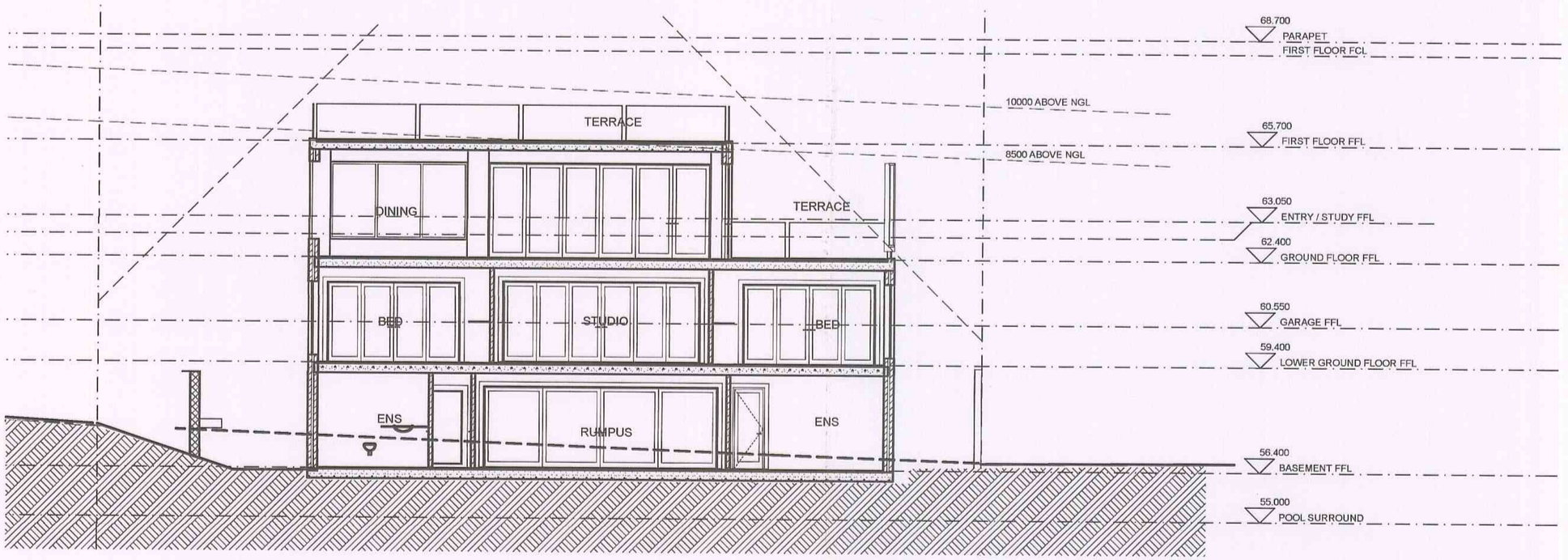
ISSUE

X: PRE DA
A: FOR DA (05/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: UPDATED (02/09)

APPROVED
2 8 MAY 2009
ANTHONY PROTAS CONSULTING PTY. LTD.

TITLE

SCALE (ON A2)	1:100
DATE	FEBRUARY 2009
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-107	F



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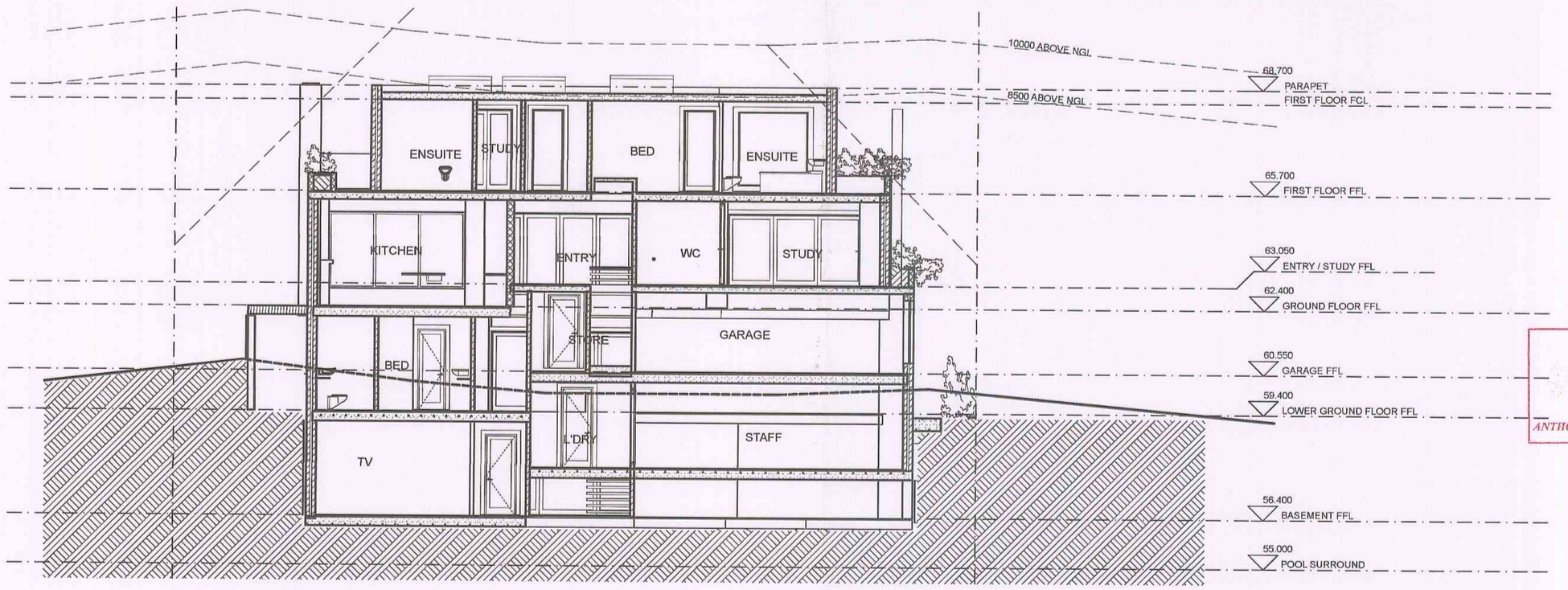
1:100



SECTION 4

1:100

APPROVED
2 8 MAY 2009
ANTHONY PROTAS CONSULTING PTY. LTD.

SUSAN ROTHWELL
° ARCHITECTS °

38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT

42 SUNRISE RD,
PALM BEACH

FOR

MRS. ROTHWELL

ISSUE

X: PRE DA
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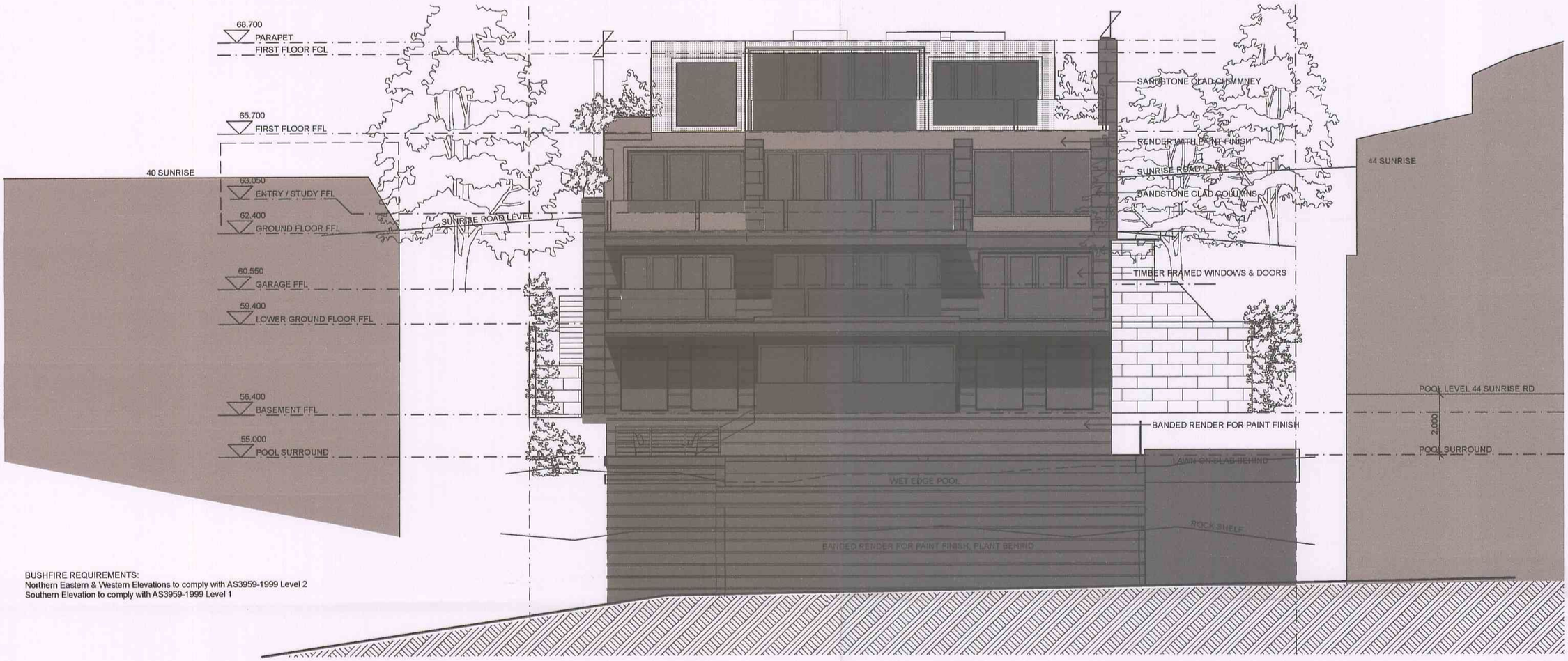
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)

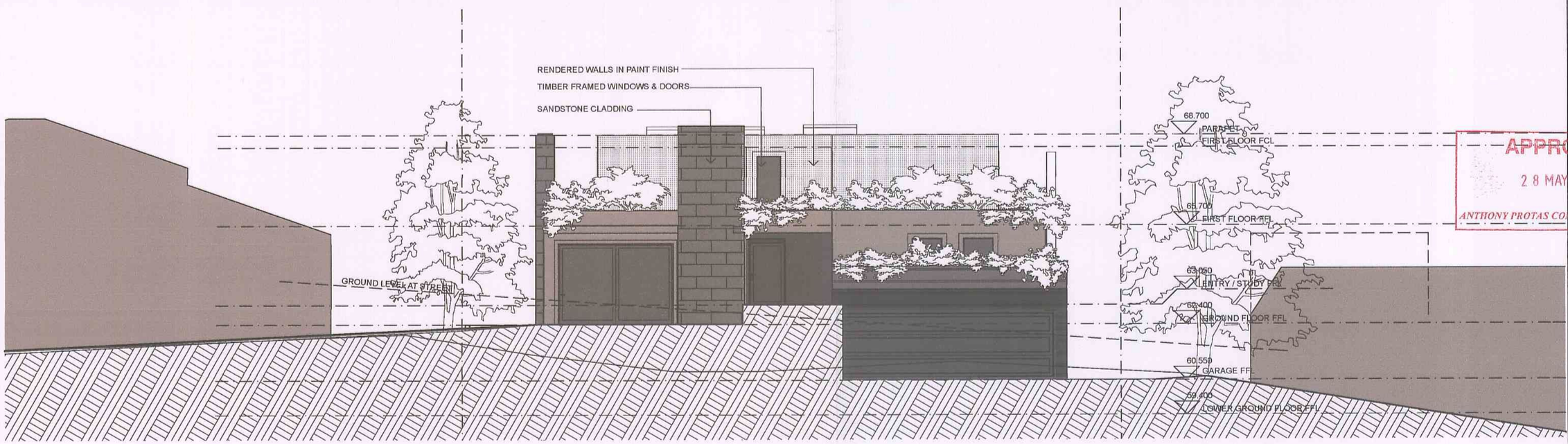
TITLE
SECTIONS

SCALE (ON A2)	1:100
DATE	OCTOBER 2008
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-108	E



BUSHFIRE REQUIREMENTS:
Northern Eastern & Western Elevations to comply with AS3959-1999 Level 2
Southern Elevation to comply with AS3959-1999 Level 1

NORTHERN ELEVATION 1:100



SOUTHERN ELEVATION 1:100

APPROVED
2 8 MAY 2009
ANTHONY PROTAS CONSULTING PTY. LTD.

SUSAN ROTHWELL
° ARCHITECTS °
38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT
42 SUNRISE RD, PALM BEACH
FOR
MRS. ROTHWELL

ISSUE
X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
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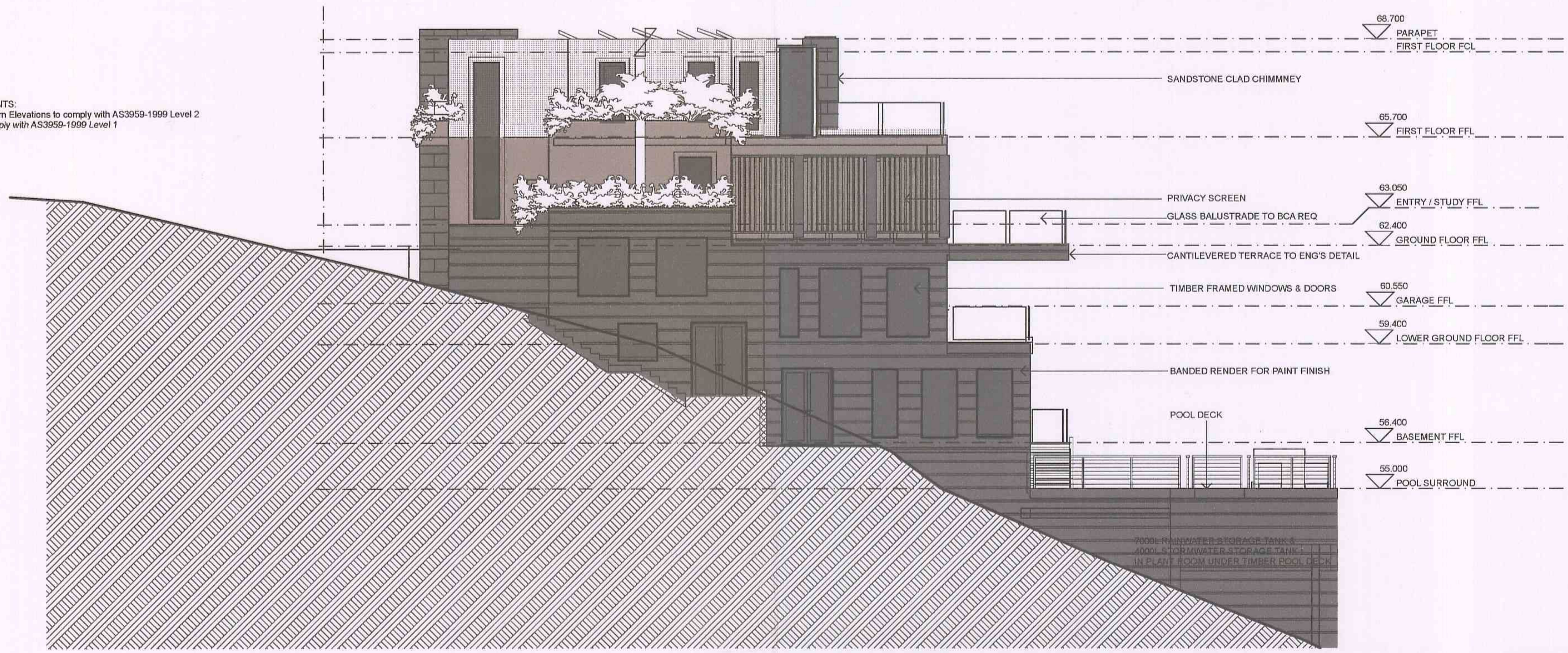
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: FOR CC (05/09)

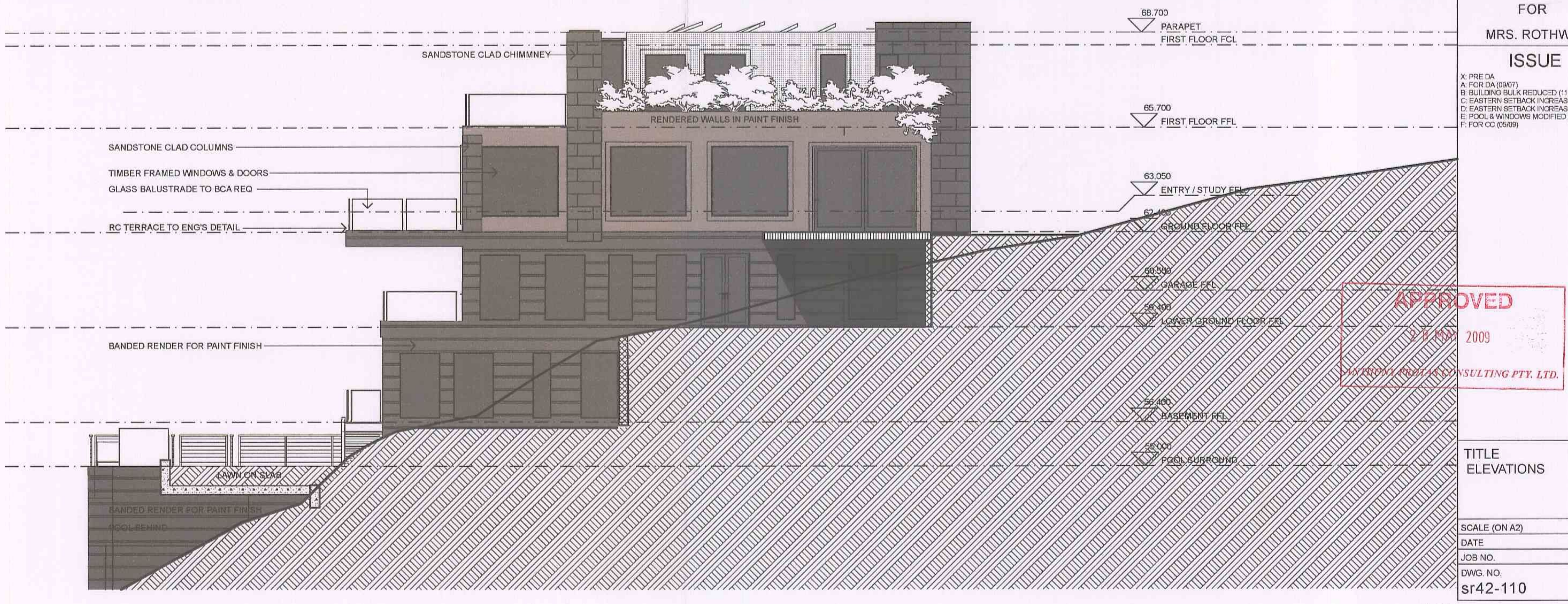
TITLE
ELEVATIONS

SCALE (ON A2)	1:100
DATE	MAY 2009
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-109	F

BUSHFIRE REQUIREMENTS:
Northern Eastern & Western Elevations to comply with AS3959-1999 Level 2
Southern Elevation to comply with AS3959-1999 Level 1



EASTERN ELEVATION 1:100



WESTERN ELEVATION 1:100

SUSAN ROTHWELL
ARCHITECTS

38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

PROPOSED NEW RESIDENCE AT

42 SUNRISE RD, PALM BEACH

FOR

MRS. ROTHWELL

ISSUE

X: PRE DA
A: FOR DA (09/07)
B: BUILDING BULK REDUCED (11/07)
C: EASTERN SETBACK INCREASED (12/07)
D: EASTERN SETBACK INCREASED (03/08)
E: POOL & WINDOWS MODIFIED (10/08)
F: FOR CC (05/09)

TITLE
ELEVATIONS

SCALE (ON A2)	1:100
DATE	MAY 2009
JOB NO.	sr42
DWG. NO. sr42-110	ISSUE F

6 - Melaleuca quinquenerva
7 - Glochidion ferdinandi
8 - Pittosporum undulatum
9 - Ficus rubignosa
} Existing trees to remain

Hardwood timber deck 55.000 AHD

Soft-leafed Buffalo lawn 55.000b AHD planted in 600 soil over slab

edge of slab

POOL

SPA

Stone flagging

Soft leafed Buffalo lawn

Stone flagging

Sandstone flagging driveway

Stone retaining wall

Sandstone stepping stones ~ 1200x800

Soft leafed Buffalo lawn

1,2,3,4&5 - Melaleuca quinquenerva existing trees to remain

Trees

Sp - Syzigium paniculatum 40 Ltr (65)
Pa - Plumeria acutifolia 40 Ltr (2)

Shrubs

Wf - Westringia fruticosa 300 ø pot (10)
Ga - Gardinia augusta 300 ø pot (12)
A - Agave spp. 300 ø pot (10)

Ground covers

Vh - Viola hederaceae (40)

Climbers

B - Bougainvillea spp 40 Ltr. (17)
TJ - Trachelospermum jasminoides 300 ø pots (24)

1 1:100

SUSAN ROTHWELL
ARCHITECTS
38 SERPENTINE ROAD
GREENWICH N.S.W. 2065
TEL: 9439 2380 FAX: 9901 3185

N

PROPOSED NEW RESIDENCE AT
42 SUNRISE RD, PALM BEACH
FOR
MRS. ROTHWELL

ISSUE
X: PRE DA
A: FOR DA (09/07)
B: UPDATED (02/09)

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

TITLE
LANDSCAPE PLAN

SCALE (ON A2)	1:100
DATE	FEBRUARY 2009
JOB NO.	sr42
DWG. NO.	ISSUE
sr42-106	B

CONSTRUCTION NOTES

GENERAL

G1. These drawings shall be read in conjunction with all architectural and other working drawings, specifications and with such other written instructions as may be issued during the course of the contract.
G2. All workmanship and materials shall be in accordance with the requirements of the current edition of the SAA Codes and the By-Laws and Ordinances of the relevant Building Authority.
G3. Any conflict between these notes, the specification, the drawings or any other relevant documents shall be referred to the Engineer for decision prior to proceeding with the work.
G4. Dimensions shall not be obtained by scaling the drawings. For setting out dimensions and levels refer to architectural drawings.
G5. The Builder shall be responsible for the provision of all shoring to maintain the stability and integrity of excavations and adjacent structures.
G6. During construction it is the Builder's responsibility to maintain the structure in a stable condition and to ensure no part is overstressed.
G7. The design and drawings contained herein are copyright and may not be used or reproduced, in whole or in part, without the written permission of DUNCAN BRAY Pty Limited.

LOADINGS

L1. The structural elements shown on these drawings has been designed for the following superimposed live loads :

FLOORS	1.5 kPa
BALCONY & STAIRS	3.0 kPa
ROOF	0.25 kPa

L2. Wind loads are in accordance with AS1170.2 as follows :

Structural Importance Multiplier :	1	
Terrain Category :	3	
Basic Wind Speed :	V35 38	m/sec.
	V1000 46	m/sec.

FOUNDATIONS

F1. The minimum safe bearing capacity of foundation material shall be 600 kPa. - ROCK
F2. The slabs and footings shown on these drawings have been designed for Reactivity Class A to AS2870.
F3. Foundation material shall be approved by the Engineer prior to placing concrete.
F4. The bases of footing excavations shall be finished clean and horizontal.
F5. Founding levels where shown are for tender purposes only.
F6. Any proposed footing excavation near boundaries, other structures or services shall be approved by the Engineer.
F7. Subgrade shall be approved material compacted to 95% Standard Dry density determined by testing to AS1289-E1.1 u.n.o.

REINFORCED CONCRETE

C1. All workmanship and materials shall be in accordance with AS3600, the SAA standards cited in AS3600, the drawings and the specification.
C2. Concrete composition and minimum clear concrete cover to reinforcement shall be as follows:-

Element	AS3600 F'c MPa	Cover mm
SLABS ON GROUND	INT - 25	20 TOP
	EXT - 40	45
SUSPENDED SLABS	INT - 32	20 TOP
	EXT - 40	45

C3. All concrete shall be 80mm maximum slump, 20mm maximum aggregate with no admixtures or fly ash, unless approved by the Engineer.
C4. Sizes of concrete are net, exclusive of applied finishes. Beam depths are written first and include slab thickness.
C5. Construction joints shall be properly formed and used only where shown or approved by the Engineer.
C6. No holes or chases shall be made in concrete members without the approval of the Engineer.
C7. Reinforcement is represented diagrammatically and is not necessarily shown in true projection.
C8. Welding or splices in reinforcement shall be used only in positions approved by the Engineer.
C9. The minimum clear spacing between conduits, cables, pipes and bars shall be as required by AS3600 but not less than three bar diameters. Conduits in slabs shall not be placed above top reinforcement or below bottom reinforcement.
C10. All reinforcing bars shall be grade D500N to AS4671 unless noted otherwise.
All fabric shall be grade 500L to AS4671 and shall be supplied in flat sheets.
The figures following the fabric symbol SL, RL or L is the reference number for fabric to AS4671.
S denotes hot rolled deformed bars Grade 230S.
R denotes hot rolled plain round bars Grade 230R.
C11. The Builder shall notify the Engineer a minimum of 24 hours before reinforcement has been completed. The Builder shall allow 2 hours after the completion of the reinforcement for the Engineer's inspection. Concrete shall not be ordered until reinforcement has been approved by the Engineer.
C12. The finished concrete shall be a dense homogeneous mass, completely filling the formwork, thoroughly embedding the reinforcement and free of stone pockets. All concrete shall be compacted with mechanical vibrators. Do not use vibrators to move concrete along the forms. Avoid over vibration that may cause segregation. All slabs shall be placed at the same time as beams of which they form a part. Keep on site, during concrete placement, standby vibrators in case of failure of unit in use. Slurry used to lubricate concrete pump pipes shall not be used in any part of the works.
C13. Concrete curing shall be in accordance with AS3600. Curing shall be commenced within two hours of finishing operations and shall be continued for a minimum of seven days by an approved proprietary compound or by keeping continuously wet.
C14. Formwork shall be designed and constructed in accordance with AS1509. Formwork shall not be stripped nor props removed without the approval of the Engineer.
C15. Formwork to beams and slabs spanning greater than 5m shall be precambered upwards by 1/500 of the clear span u.n.o.
C16. All unsupported bars shall be tied in transverse direction to N12-300, lapped 500 u.n.o.
C17. Fabric lap details shall be in accordance with fig.13.2.4 of AS3600.
C18. Hooks, laps and bends shall be in accordance with AS3600 u.n.o.

CONCRETE ROOF SLAB NOTES:

The slab shown on these drawings form the roof/ceiling to the areas below, and watertightness of these slabs is essential. the following procedure is to be followed to minimise cracking.

1. The builder is to ensure concrete is fully vibrated to ensure a very dense mix. Do not over-vibrate or vibrate horizontally as segregation will occur.
   A standby vibrator must be on site during concrete placement.
2. The slab is to be cured by full ponding; or is to be covered with waterproof membrane and sealed for 14 days. Air is not permitted to contact any concrete surface. This curing process is to commence within 4 - 6 hours of placing concrete on hot , windy days or within 8 - 12 hours of placing concrete on cooler days.

STEELWORK

S1. Materials, fabrication and erection shall be in accordance with AS4100, the SAA Standards cited in AS4100 and the specification.
S2. Three copies of all workshop drawings shall be submitted to and approved by the Engineer prior to fabrication.
S3. All welds shall be 6mm continuous fillet from E41XX Electrodes, all bolts M20 4.6/S and all cleats and gussets 10mm plate u.n.o.
S4. For bolts, the following notation is used:
4-M16 4.6/S denotes 4 x M16 commercial grade bolts snug tight.
6-M20 8.8/TF denotes 6 x M20 high strength structural bolts fully tensioned in a no slip joint.
8-M24 8.8/TB denotes 8 x M24 high strength structural bolts fully tensioned in a bearing joint.
S5. Mating surfaces of TF connections shall be left unpainted and free of mill scale and rust.
S6. Bolts in TF and TB connections shall be tightened using the part turn method or load indicating washers. Calibrated torque wrenches shall not be used. A hardened washer shall be used under the bolthead or nut, whichever is rotated. The re-use of fully tensioned bolts is prohibited.
S7. The Builder shall provide all cleats and drill all holes necessary for fixing steel to steel or timber.
S8. Steel beams and trusses spanning greater than 5m shall be fabricated with an upward precamber of 1/500 span u.n.o.
S9. Structural steelwork shall be prepared to class 2 and painted with Zinc Chromate Primer to a thickness of 70 micrometres u.n.o.
S10. All exposed steelwork shall be hot-dipped galvanised.
S11. Steelwork built into masonry shall be hot-dipped galvanised.
S12. Provide fire protection to all steelwork as required.
S13. All cold formed sections shall confirm to AS1538 and be roll-formed from steel strip, minimum yield stress 450MPa, 300 g/m^{2}minimum zinc coating mass u.n.o.

MASONRY

M1. All workmanship and materials shall be in accordance with AS3700, the SAA Standards cited in AS3700 and the specification.
M2. Where masonry supports concrete slabs or beams, the top course shall be laid frogs down and covered with 2 layers of approved slip joint material.
M3. Walls shown shaded on plan are load bearing. Non-load bearing walls under slabs shall be separated from the slab by 15mm of approved compressible material. Where masonry abuts slab downturns, provide 15mm gap between brickwork and side of downturn.
M4. Masonry supported by concrete slabs or beams shall not be erected until formwork and props have been removed.
M5. Brick strength shall be f'uc= 30 MPa u.n.o.
M6. Hollow concrete masonry shall be f'uc= 15MPa u.n.o.
M7. Masonry mortar shall be classification M3 u.n.o.
M8. Chases shall not be cut into load-bearing masonry without the approval of the Engineer.
M9. Movement control joints shall be provided vertically for full height of wall at 8 metre maximum centres. Joint shall be 15mm minimum with an approved compressible filler.
M10. Hollow walls shall be constructed to full height or maximum 3m before filling cores. Cleanout openings shall be provided at the base of all cores to be filled.
M11. Hollow core filling concrete shall be F'c 20 MPa, 10mm aggregate, 230 slump. UNO.
M12. Blockwork retaining walls shall be constructed using "double U blocks".

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

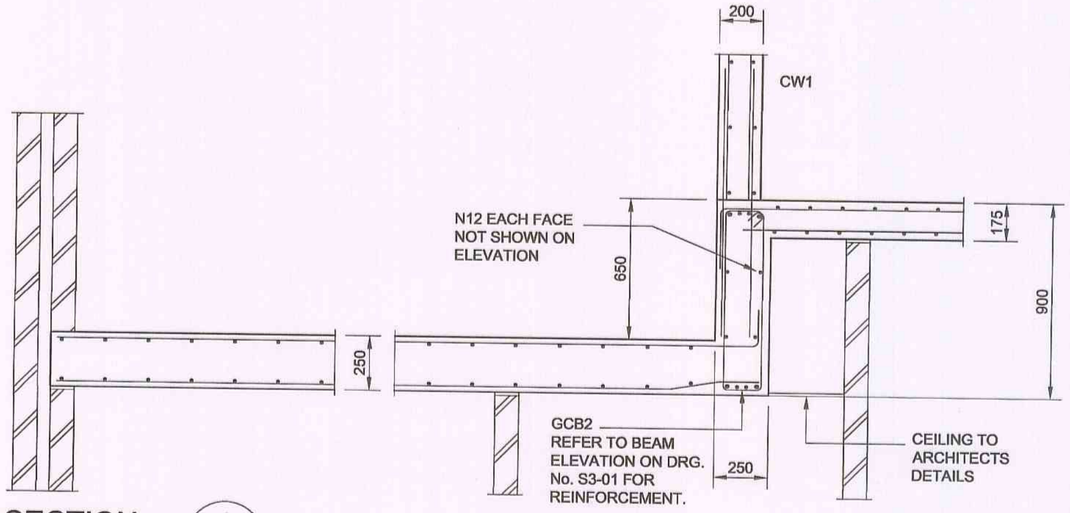
Drawing Title
GENERAL AND CONSTRUCTION NOTES

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:100	AST (08 - 099)
Project No.	Drawing. No.
SB3758	S0-01 C1

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



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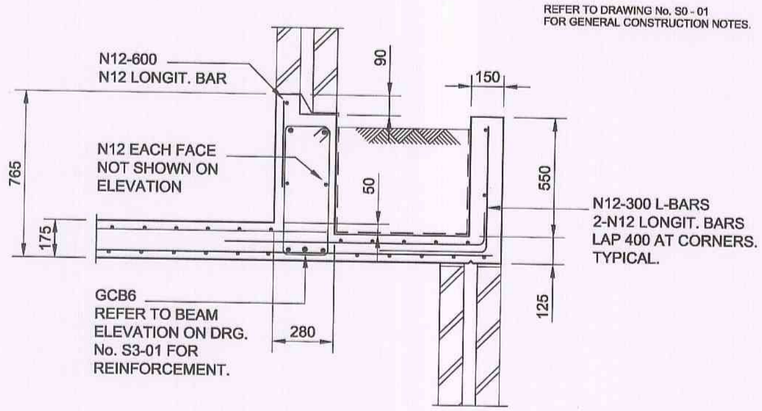

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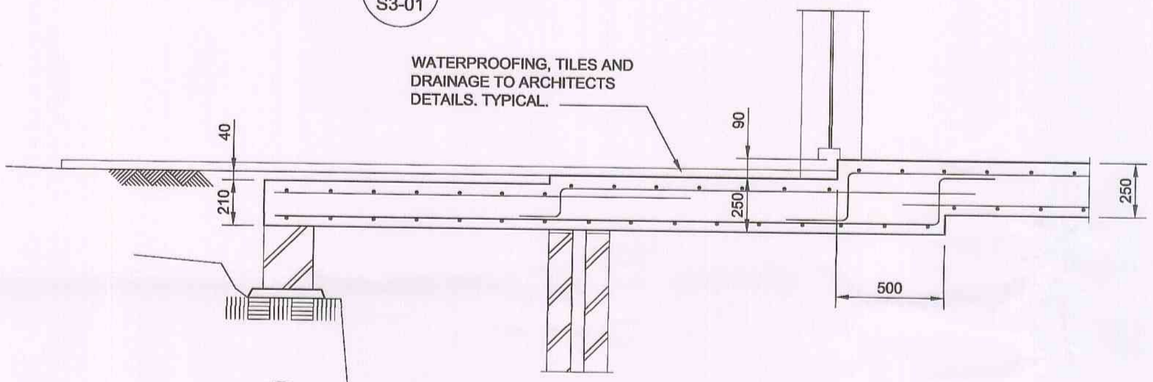

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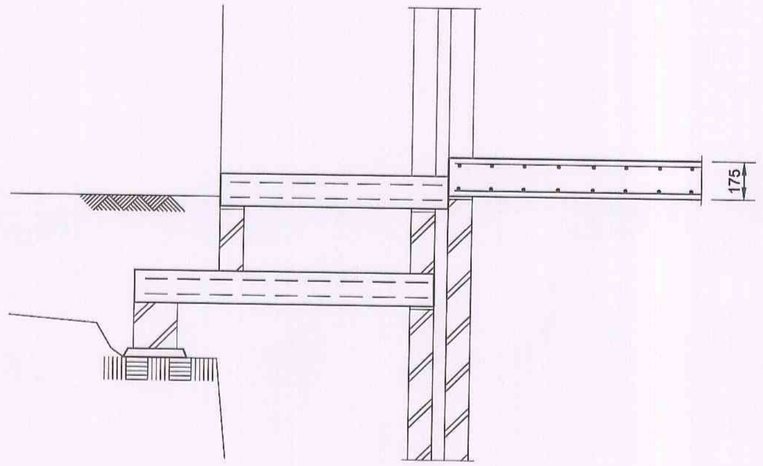
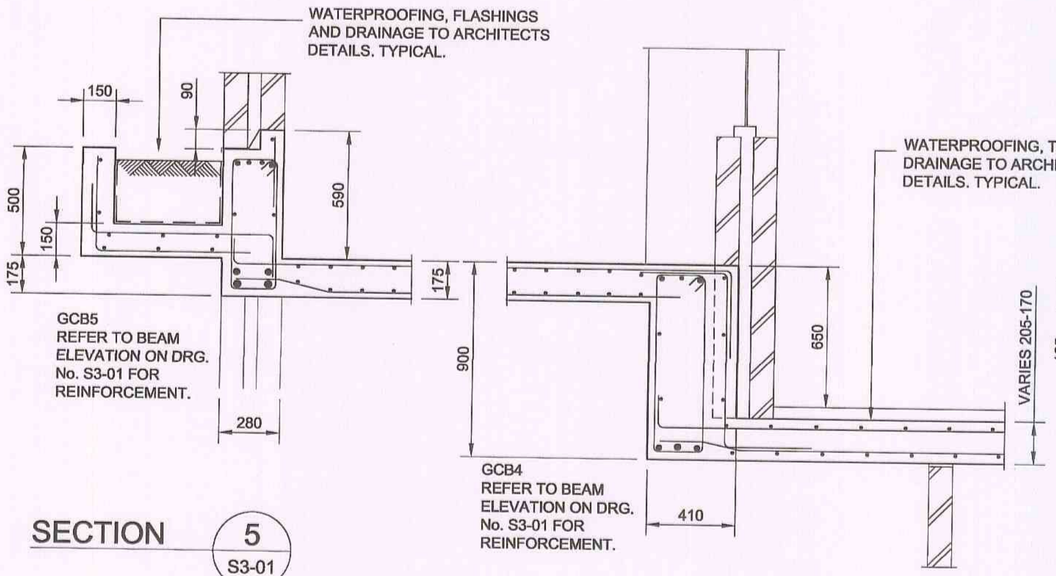


SECTION 4 S3-01



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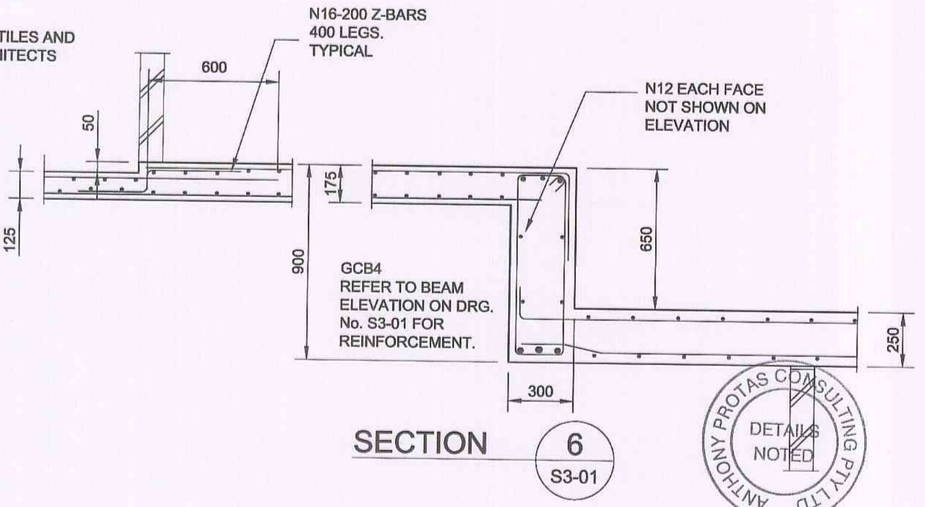


SECTION 6 S3-01

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C2	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

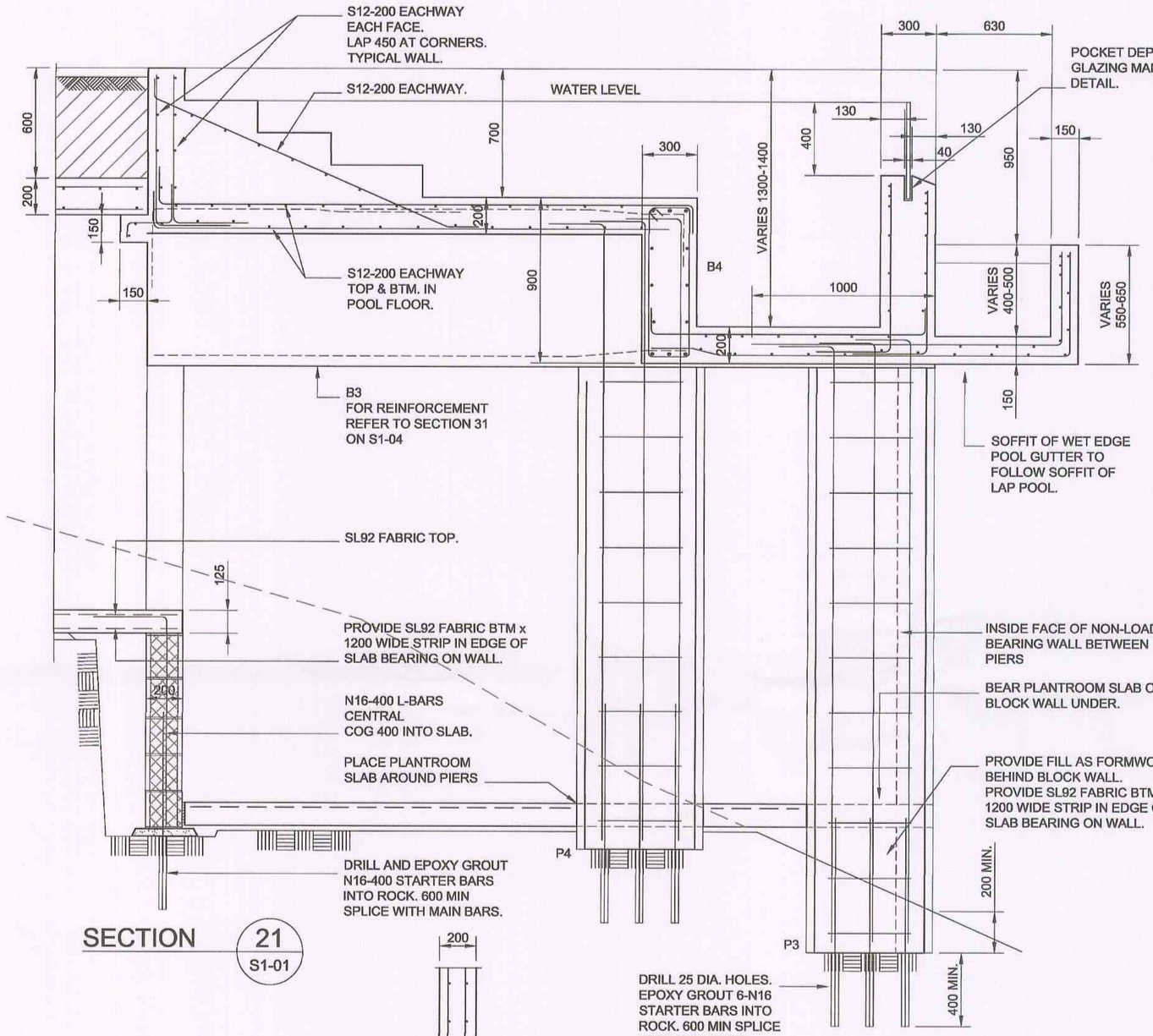
Architect
SUSAN ROTHWELL

Drawing Title
GROUND FLOOR SLAB SECTIONS
SHEET 1

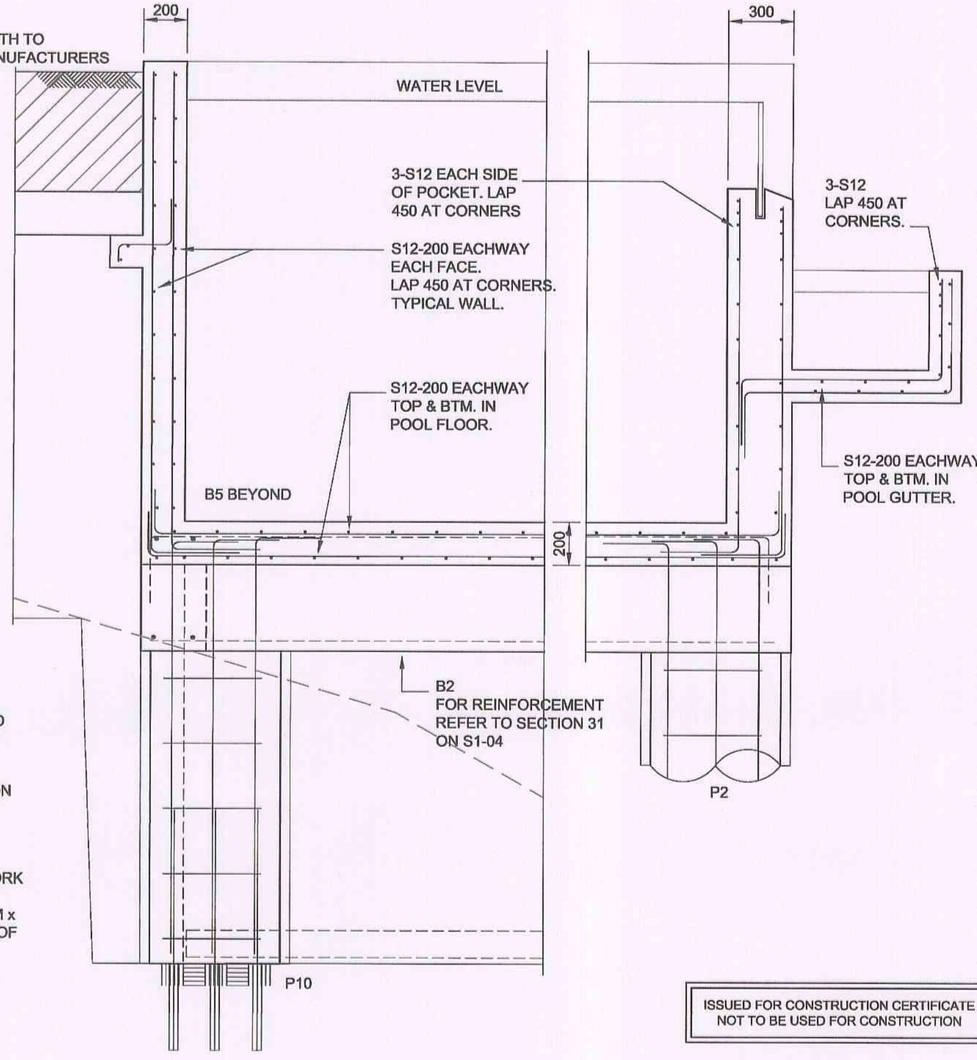
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing No.
SB3758	S3-02 C2

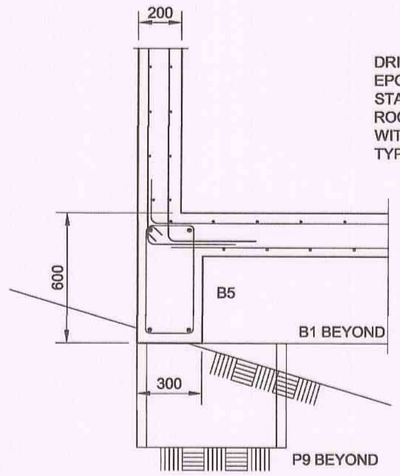
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



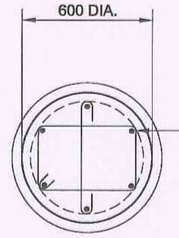
SECTION 21 S1-01



SECTION 22 S1-01



SECTION 23 S1-01



TYPICAL CONCRETE
PIER P1-10 DETAIL

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.0
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.0
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	08.1

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

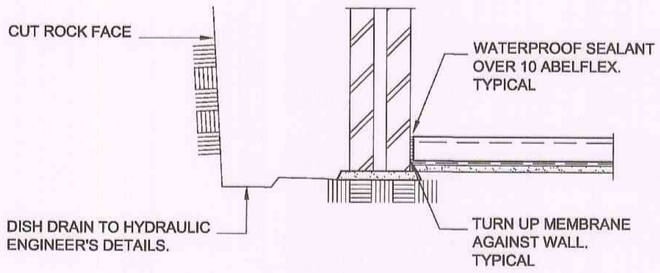
Architect
SUSAN ROTHWELL

Drawing Title
BASEMENT FLOOR SLAB SECTIONS
SHEET 2

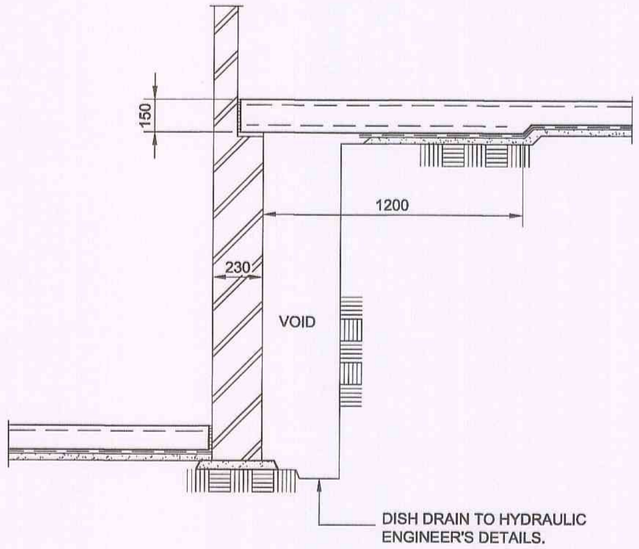
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S1-03 C1

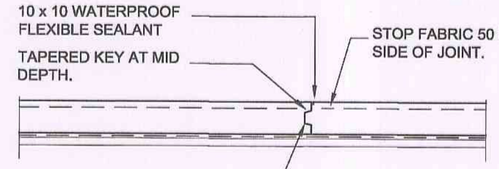
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



SECTION 1 / S1-01

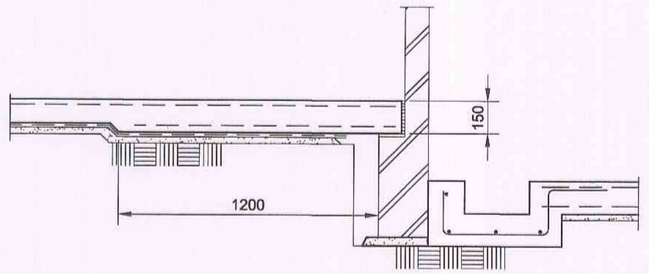


SECTION 2 / S1-01

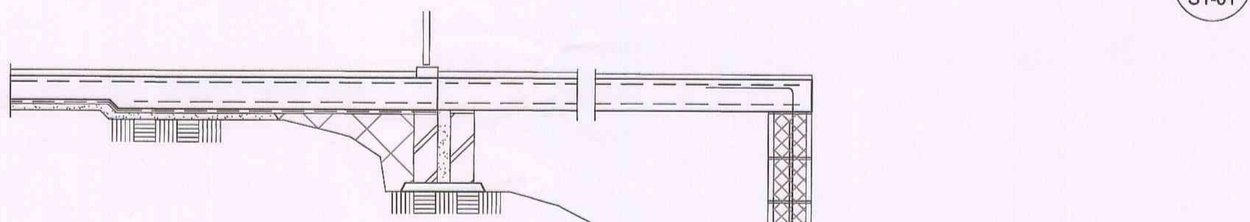


TYPICAL KEYED JOINT DETAIL

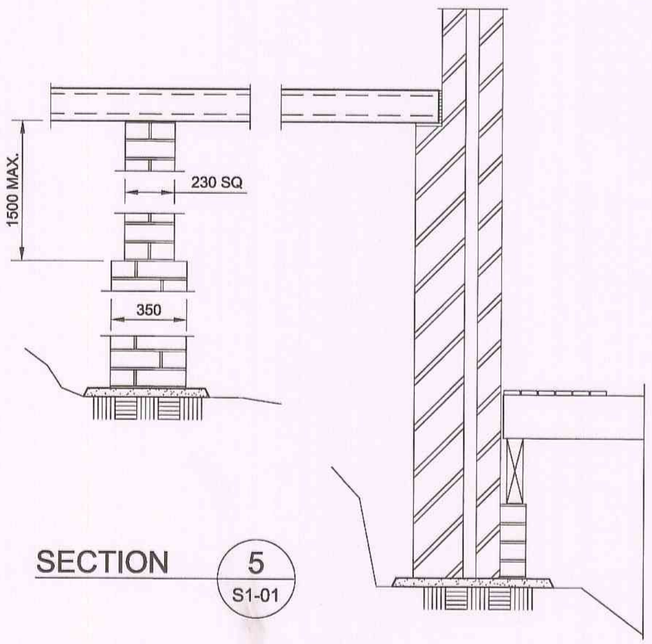
DENOTED KJ ON PLAN



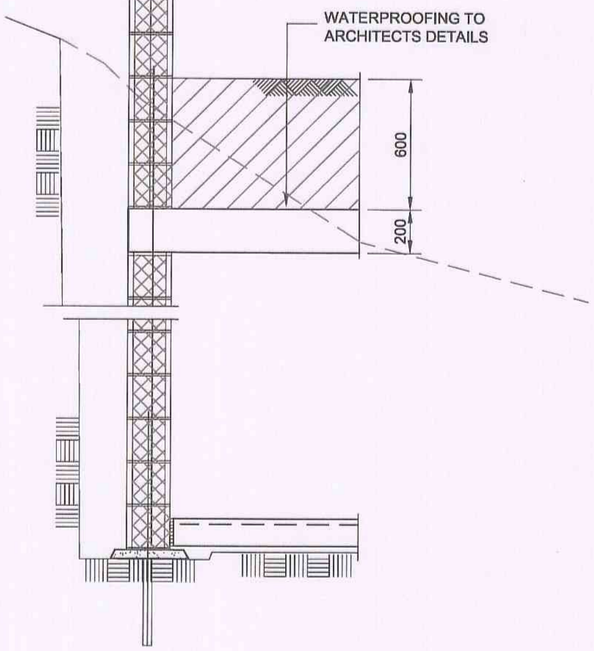
SECTION 3 / S1-01



SECTION 4 / S1-01



SECTION 5 / S1-01



ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C2	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE, NOT FOR CONSTRUCTION.	08.12.08

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

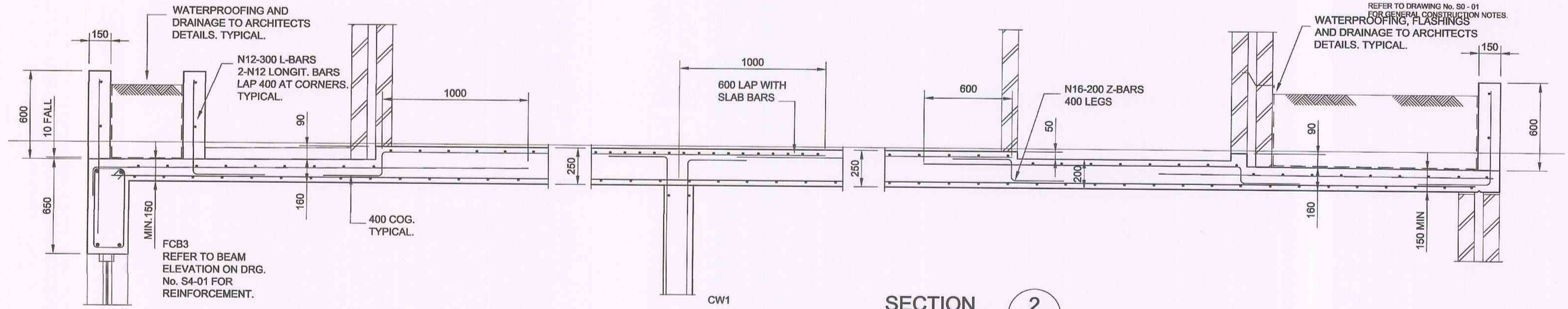
Architect
SUSAN ROTHWELL

Drawing Title
BASEMENT FLOOR SLAB SECTIONS
SHEET 1

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

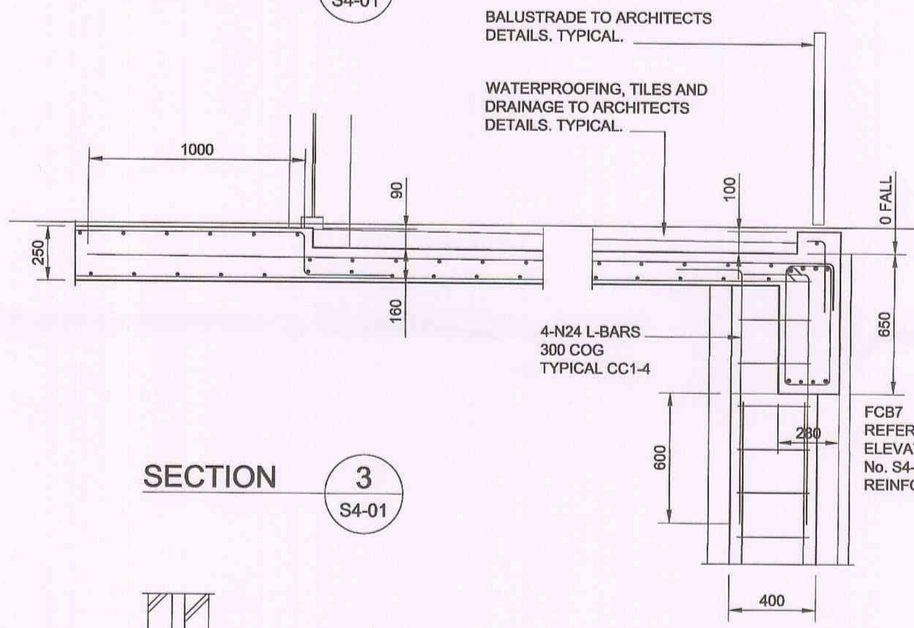
Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing No.
SB3758	S1-02 C2

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

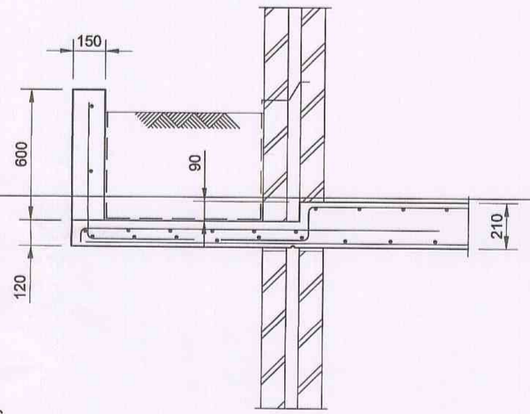


SECTION 1 S4-01

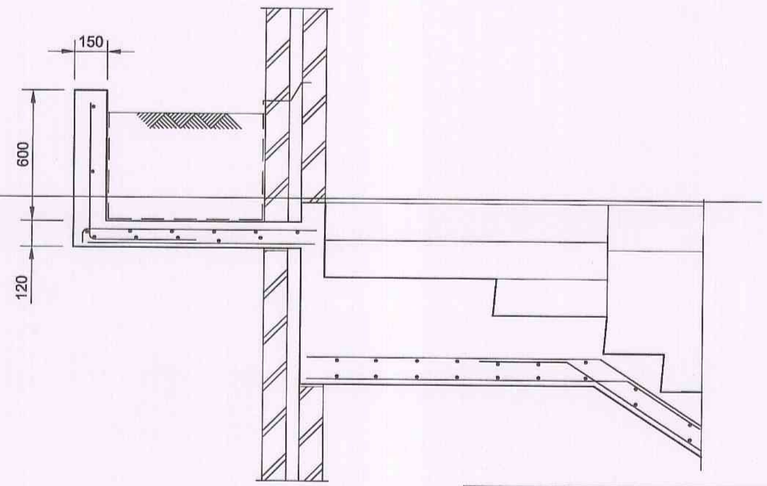
SECTION 2 S4-01



SECTION 3 S4-01

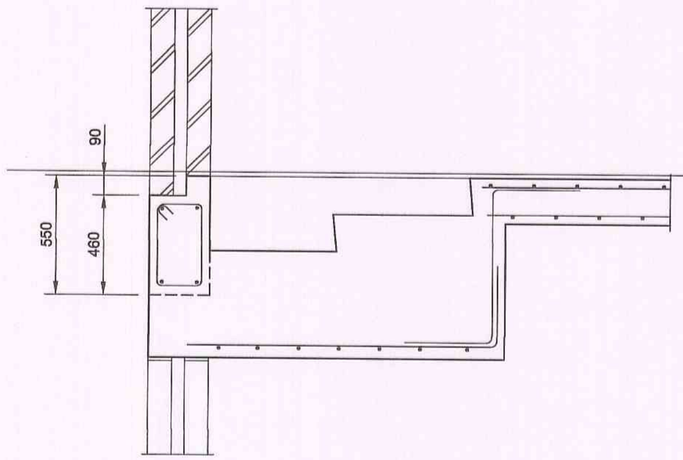


SECTION 4 S4-01

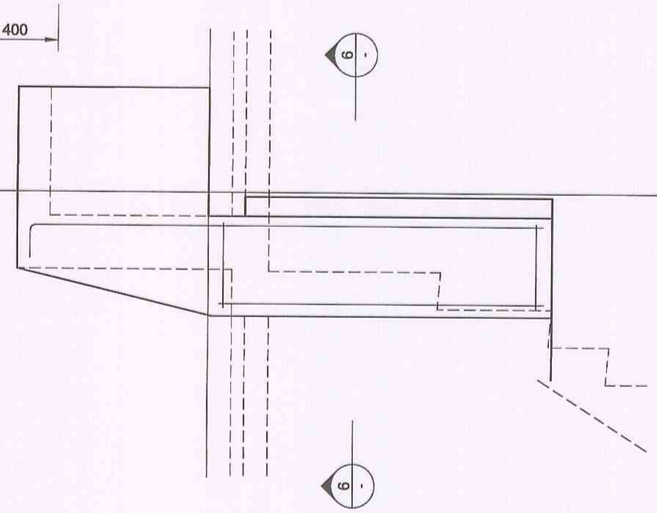


SECTION 5 S4-01

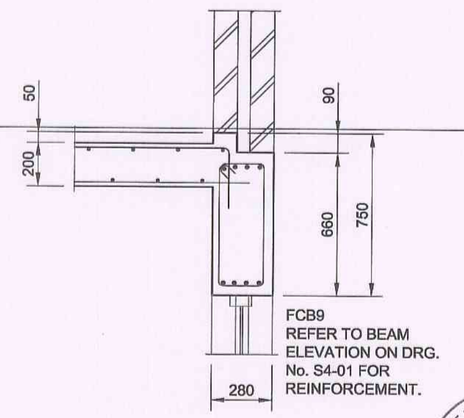
ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION



SECTION 6 S4-01



ELEVATION BEAM F-1B



SECTION 7 S4-01

No.	Amendment	Date
C2	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

Drawing Title
FIRST FLOOR SLAB SECTIONS
SHEET 1

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
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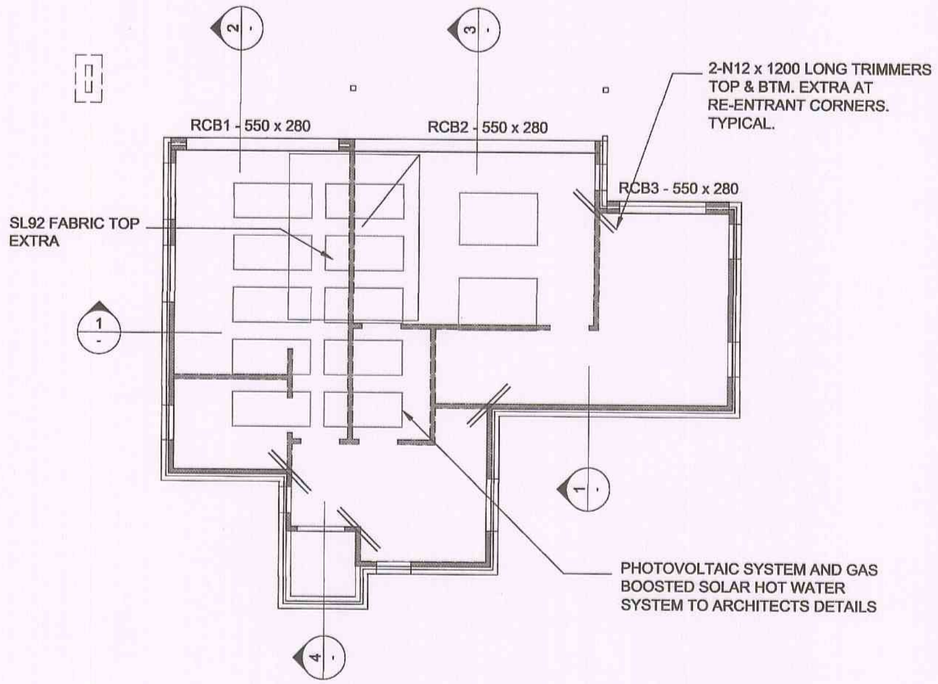
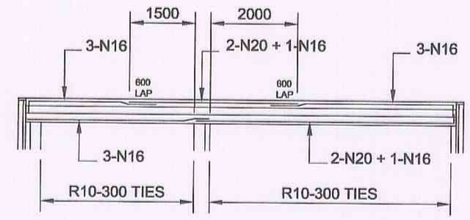
1:100	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S4-02 C2

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED



ROOF SLAB PLAN

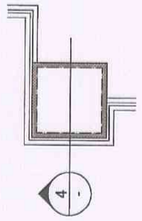
SLAB TO BE 175 MINIMUM THICK REINFORCED WITH SL92 FABRIC TOP AND BOTTOM THROUGHOUT.
LAP FABRIC 400 MINIMUM.
PROVIDE EXTRA FABRIC AND BARS AS SHOWN ON PLAN.
WATERPROOFING AND DRAINAGE TO ARCHITECTS DETAILS.
REFER TO DRAWING No. S0 - 01 FOR CONCRETE ROOF SLAB NOTE.



ELEVATION
RCB1 - 550 x 280
RCB3 SIMILAR

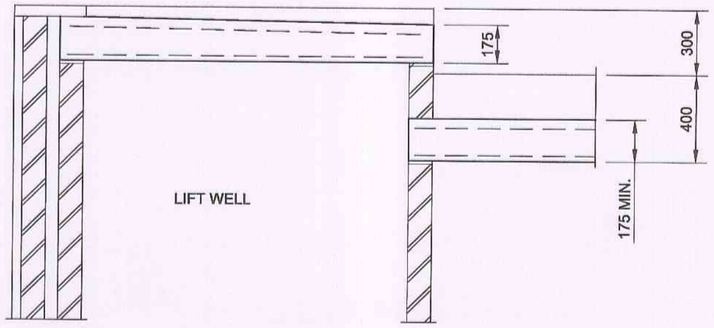
ELEVATION
RCB2 - 550 x 280

REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.

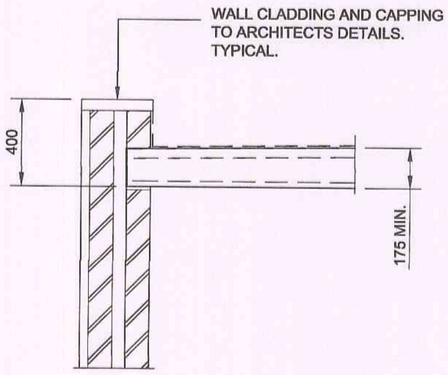


LIFT ROOF SLAB PLAN

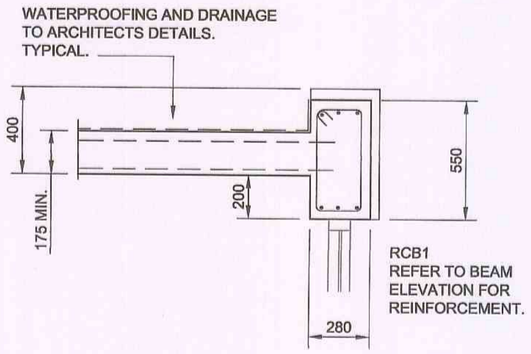
SLAB TO BE 175 MINIMUM THICK REINFORCED WITH SL92 FABRIC TOP AND BOTTOM THROUGHOUT.
WATERPROOFING TO ARCHITECTS DETAILS.



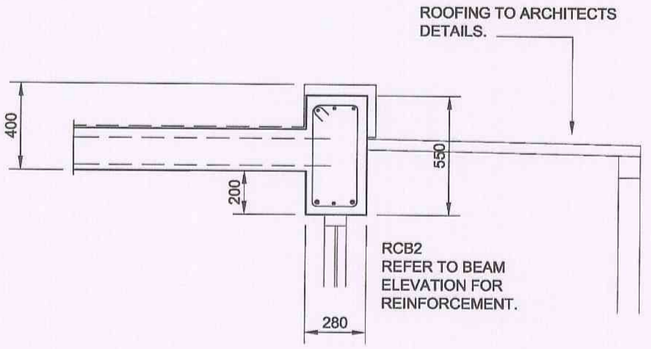
SECTION 4
SCALE 1:20



SECTION 1
SCALE 1:20



SECTION 2
SCALE 1:20



SECTION 3
SCALE 1:20

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

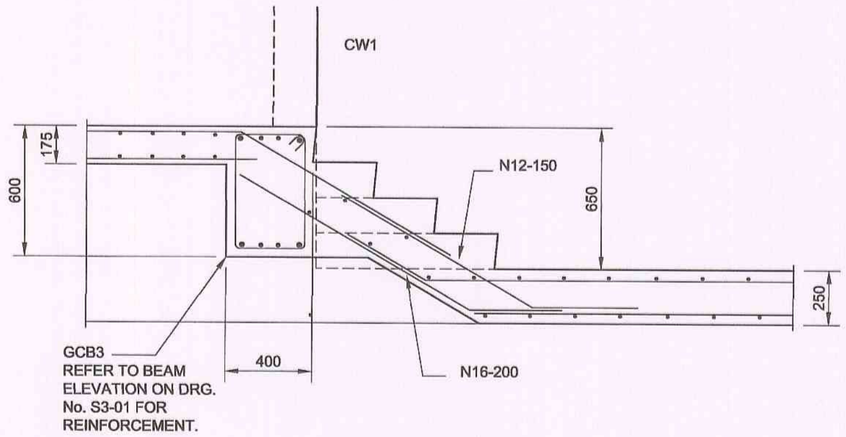
Architect
SUSAN ROTHWELL

Drawing Title
ROOF SLAB PLAN & LIFT ROOF SLAB PLAN

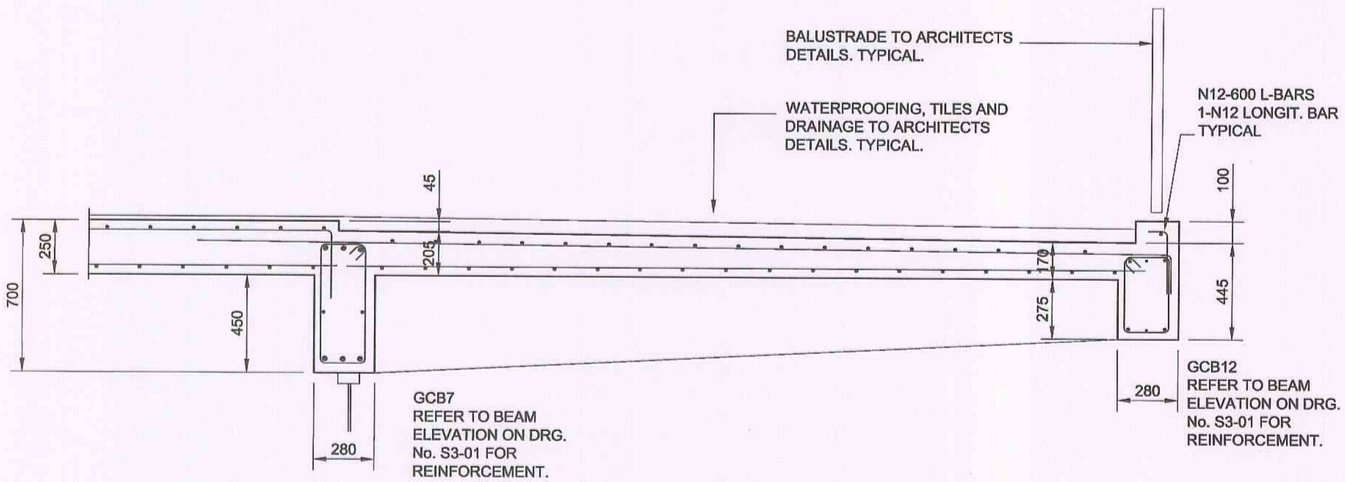
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:100, 1:20	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S5-01 C1

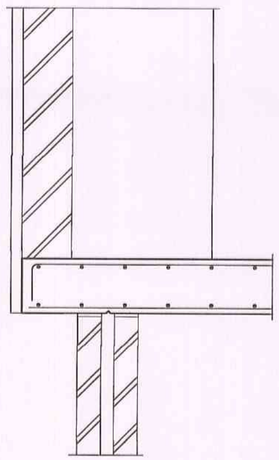
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



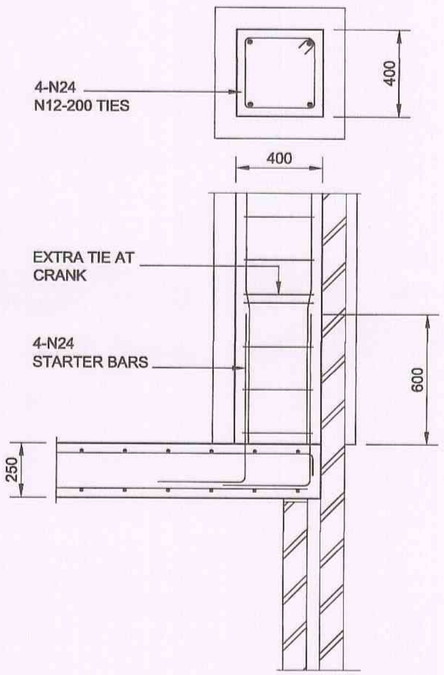
SECTION 21 S3-01



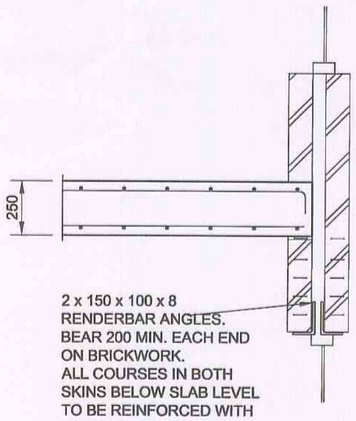
SECTION 22 S3-01



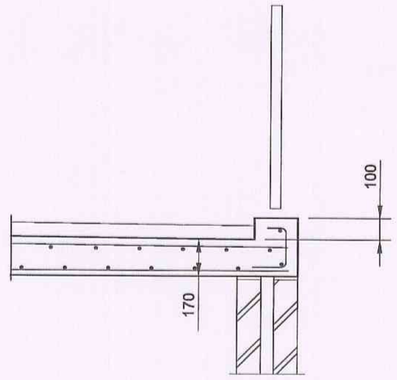
SECTION 23 S3-01



SECTION 24 S3-01



SECTION 25 S3-01



SECTION 26 S3-01

ISSUED FOR CONSTRUCTION CERTIFICATE
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No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
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P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

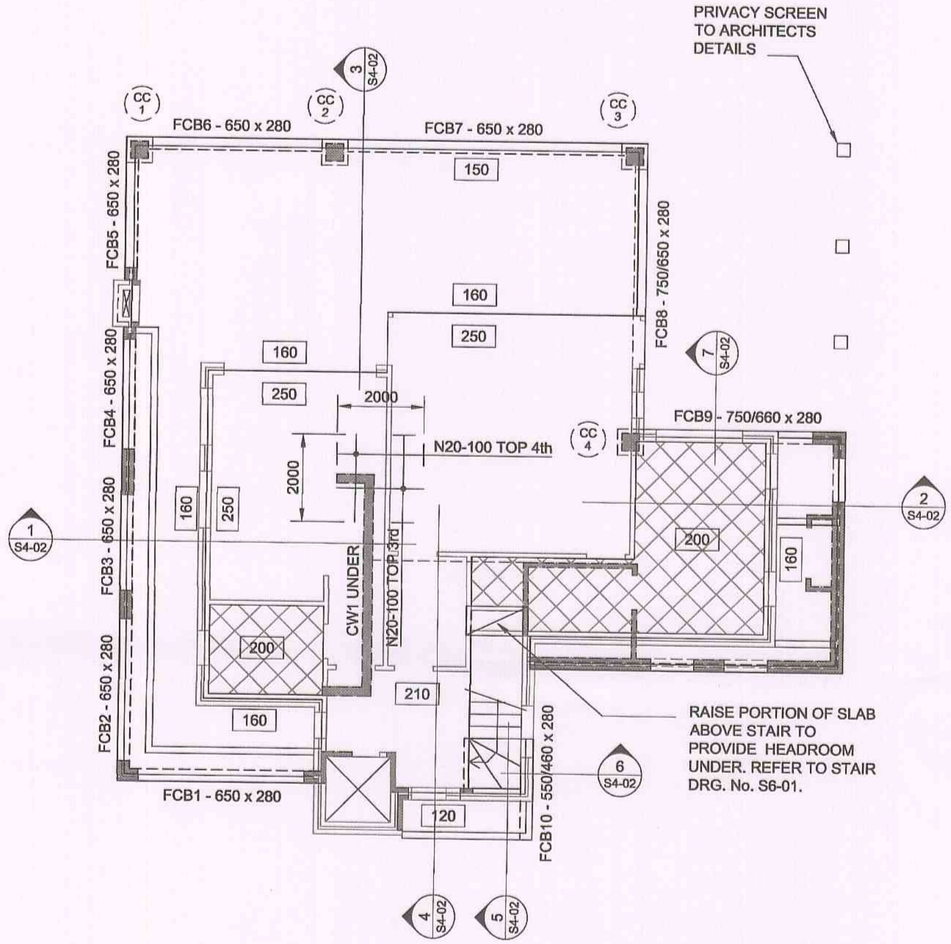
Architect
SUSAN ROTHWELL

Drawing Title
GROUND FLOOR SLAB SECTIONS
SHEET 2

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S3-03 C1

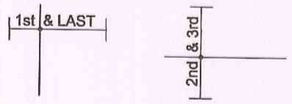
ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED



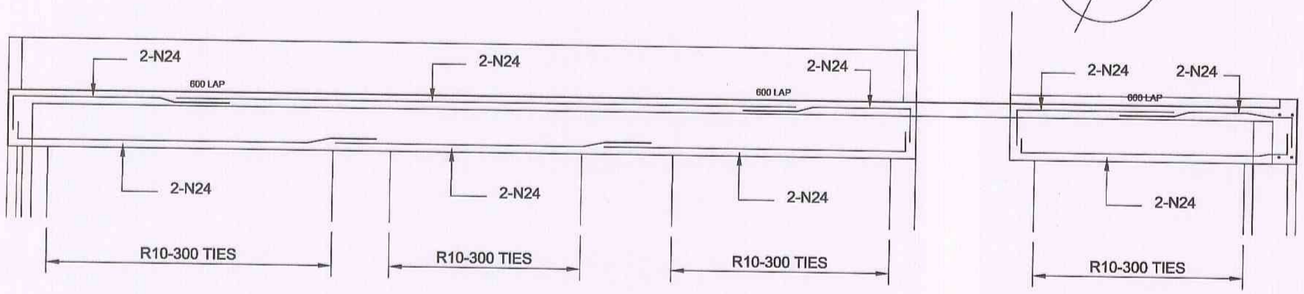
FIRST FLOOR PLAN

SLAB THICKNESS TO BE AS SHOWN ON PLAN AND SECTIONS.
SLABS TO BE REINFORCED WITH N16-200 EACHWAY TOP & BOTTOM EXCEPT WHERE SHOWN ON PLAN.
WATERPROOFING AND DRAINAGE TO ARCHITECTS DETAILS.
REFER TO DRAWING No. S0 - 01 FOR CONCRETE ROOF SLAB NOTE.

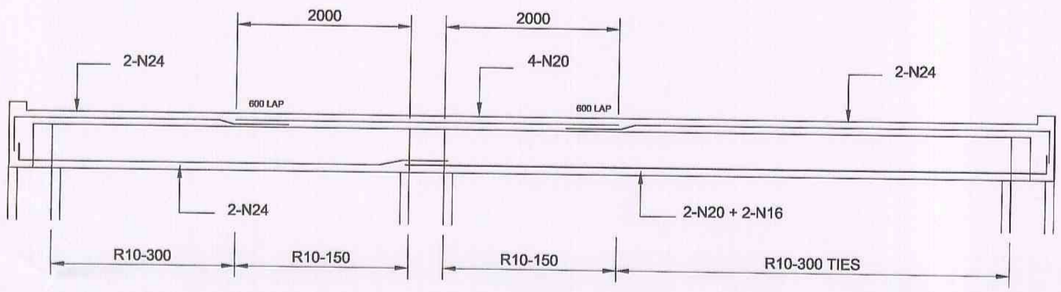
BAR LAYING SEQUENCE DIAGRAM



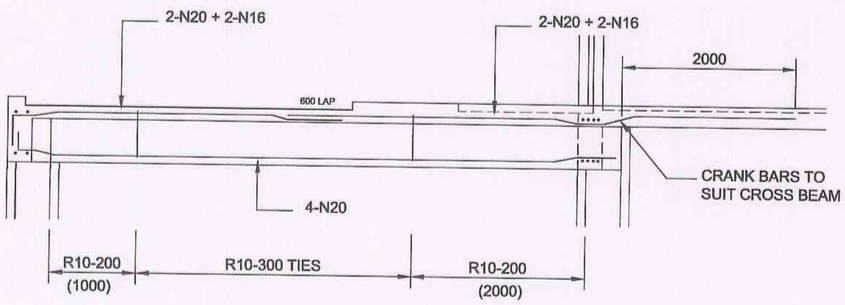
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



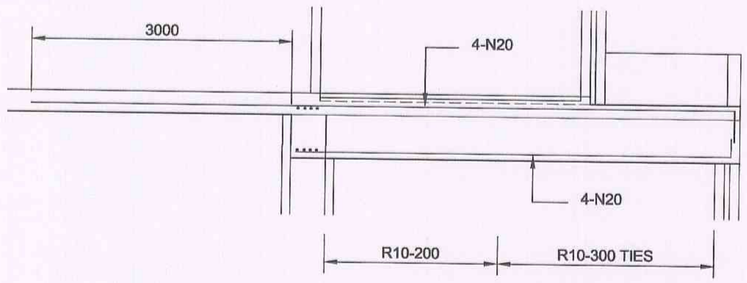
FCB2 - 650 x 280 FCB3 - 650 x 280 FCB4 - 650 x 280 FCB5 - 650 x 280
FCB1 - SIMILAR



FCB6 - 650 x 280 FCB7 - 650 x 280



FCB8 - 650 x 280



FCB9 - 750/660 x 280

BEAM SCALES ARE 1:50
ALL COGS SHOWN TO BE 300 U.N.O.
REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
LENGTHS SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS OR SITE MEASUREMENTS. DO NOT SCALE THE DRAWING.
CRANK COLUMN OR BEAM BARS TO ACCOMMODATE INTERSECTIONS.
FOR BEAM SECTIONS REFER TO DRAWING NO. S4-02

ISSUED FOR CONSTRUCTION CERTIFICATE
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Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

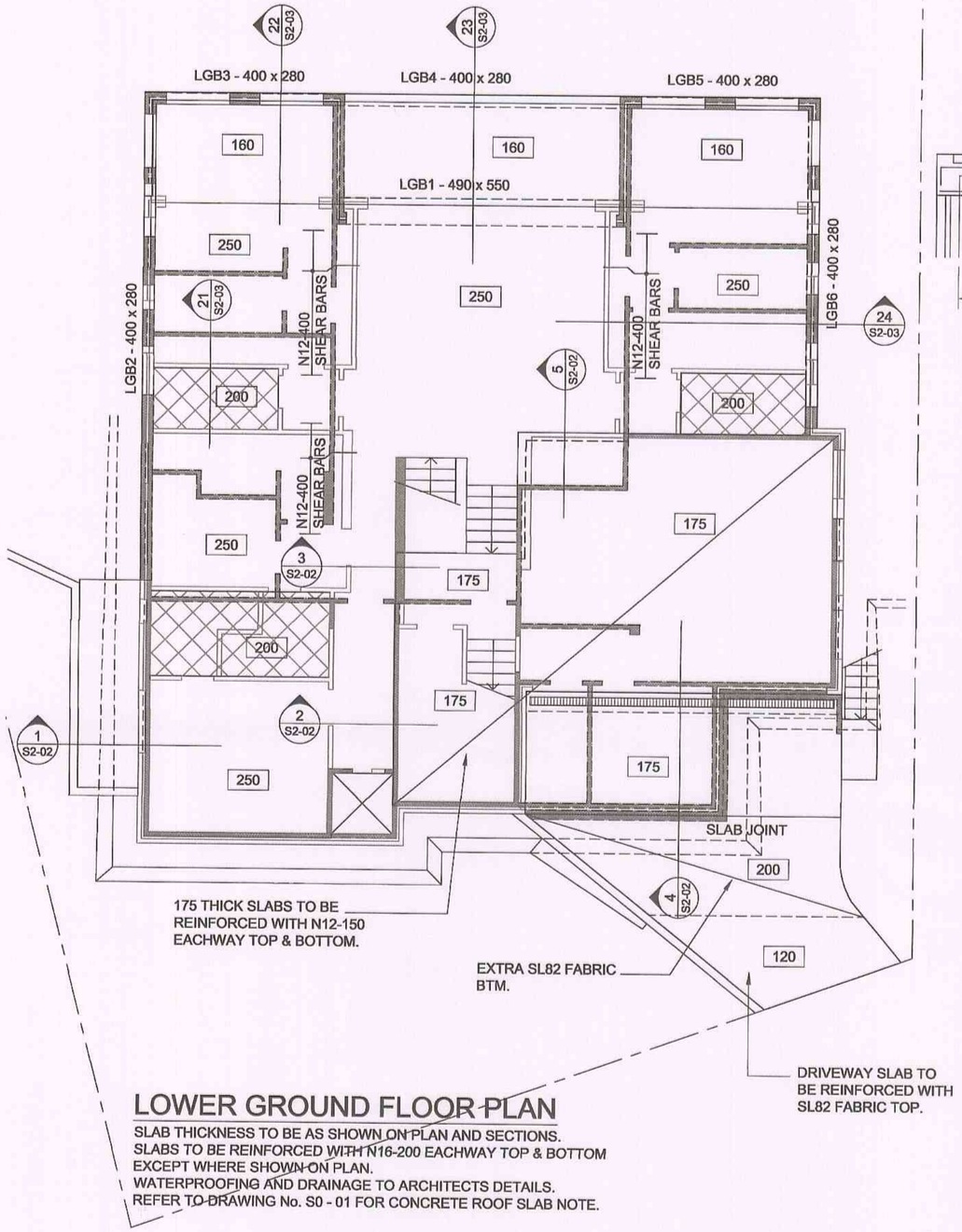
Architect
SUSAN ROTHWELL

Drawing Title
FIRST FLOOR SLAB PLAN

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

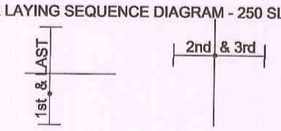
Date	Checked
11.07.2008	
Scale	Drawn
1:100	AST (08 - 059)
Project No.	Drawing No.
SB3758	S4-01 C2



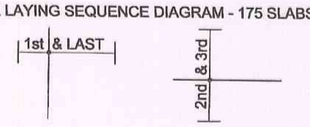
LOWER GROUND FLOOR PLAN

SLAB THICKNESS TO BE AS SHOWN ON PLAN AND SECTIONS.
SLABS TO BE REINFORCED WITH N16-200 EACHWAY TOP & BOTTOM EXCEPT WHERE SHOWN ON PLAN.
WATERPROOFING AND DRAINAGE TO ARCHITECTS DETAILS.
REFER TO DRAWING No. S0 - 01 FOR CONCRETE ROOF SLAB NOTE.

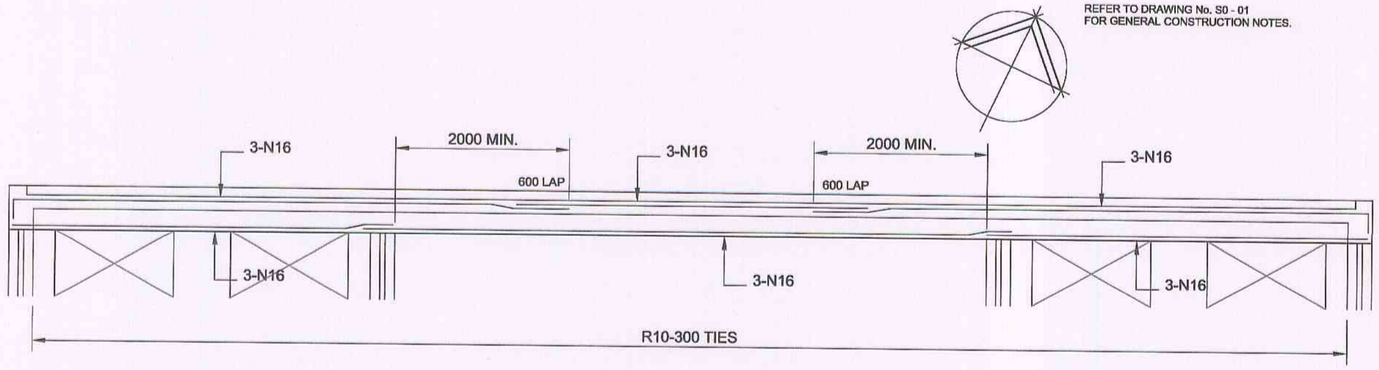
BAR LAYING SEQUENCE DIAGRAM - 250 SLABS



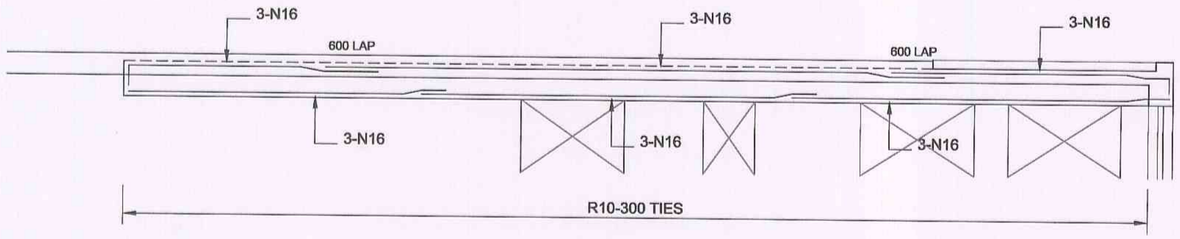
BAR LAYING SEQUENCE DIAGRAM - 175 SLABS



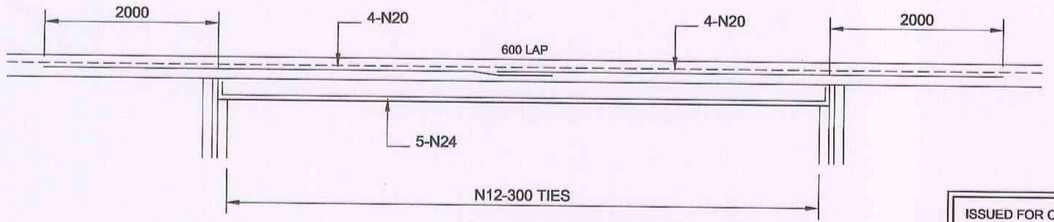
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



LGB3 - 400 x 280 LGB4 - 400 x 280 LGB5 - 400 x 280



LGB2 - 400 x 280
LGB6 - SIMILAR



LGB1 - 490 x 550

BEAM SCALES ARE 1:50
ALL COGS SHOWN TO BE 300 U.N.O.
REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
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CRANK COLUMN OR BEAM BARS TO ACCOMMODATE INTERSECTIONS.
FOR BEAM SECTIONS REFER TO DRAWING NO. S2-02 & 03.

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

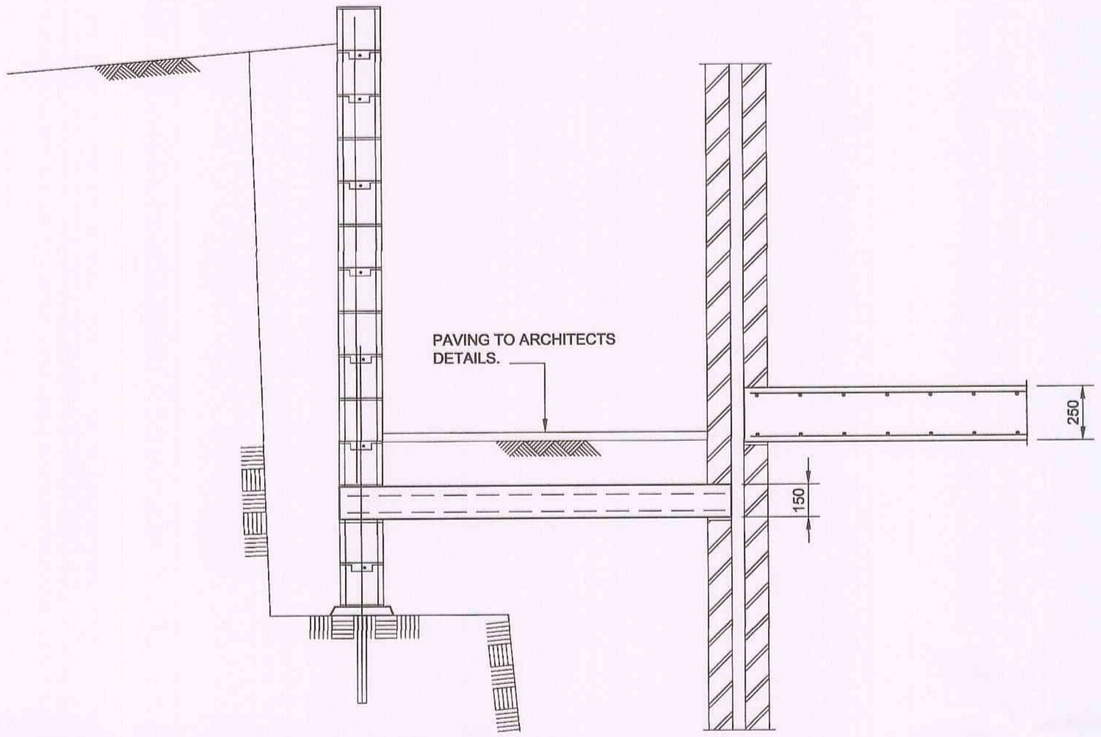
Architect
SUSAN ROTHWELL

Drawing Title
LOWER GROUND FLOOR SLAB PLAN

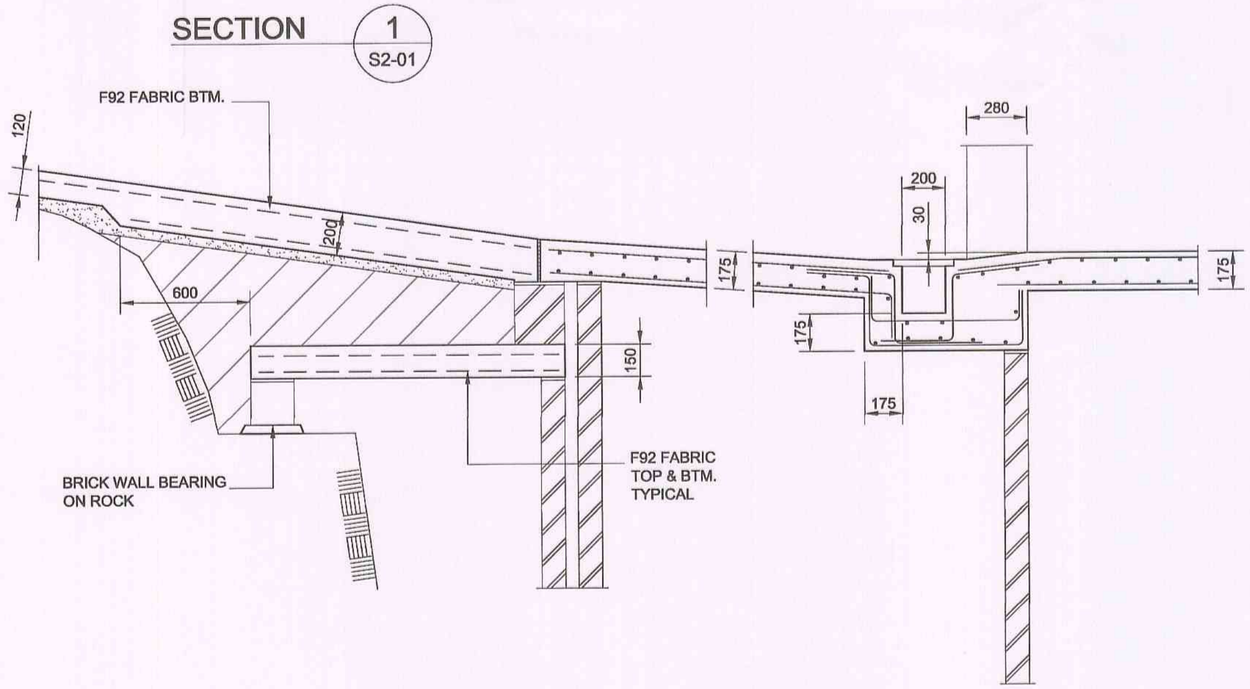
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:100	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S2-01 C1

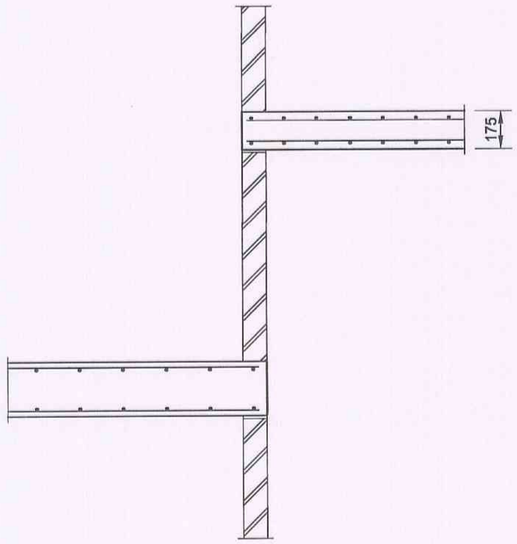
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



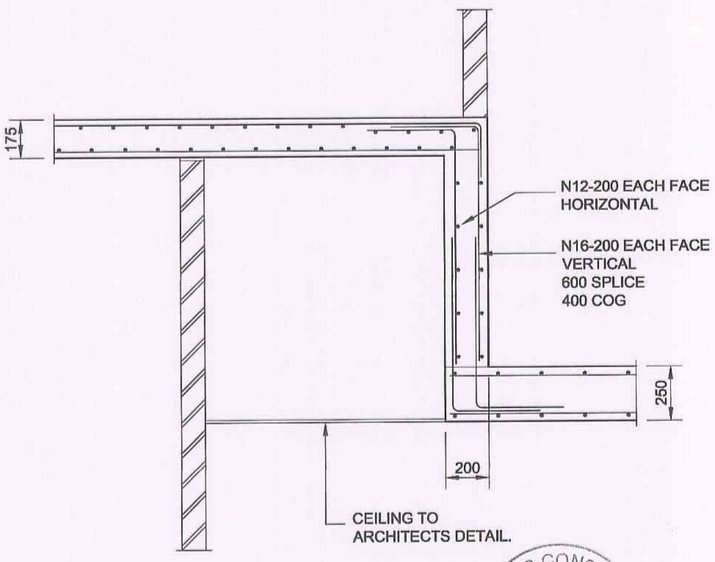
SECTION 1 / S2-01



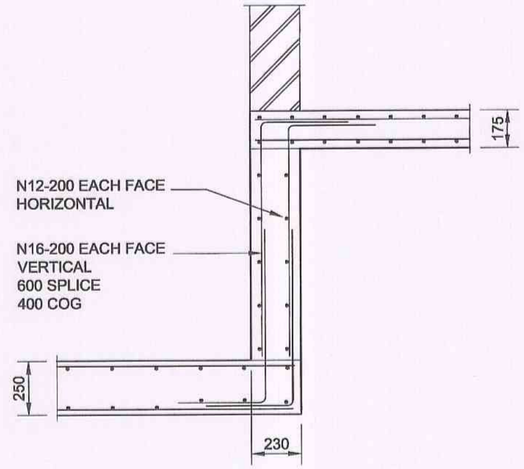
SECTION 4 / S2-01



SECTION 2 / S2-01



SECTION 5 / S2-01



SECTION 3 / S2-01

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

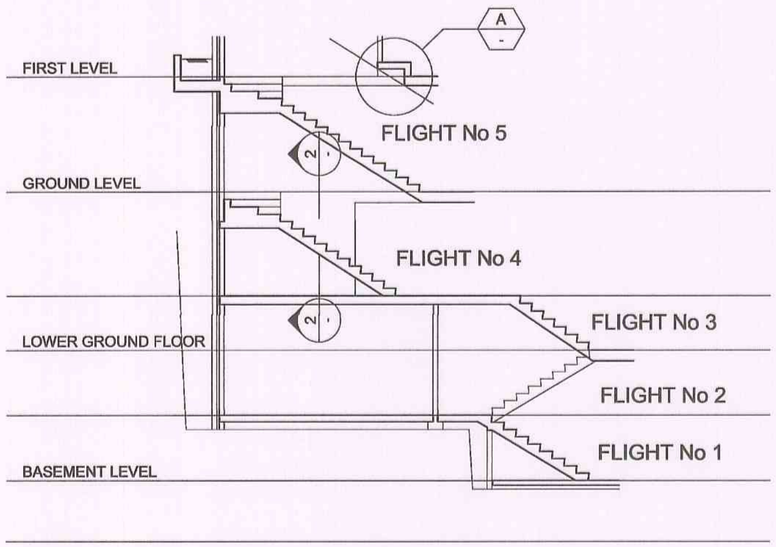
Drawing Title
LOWER GROUND FLOOR SLAB SECTIONS

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

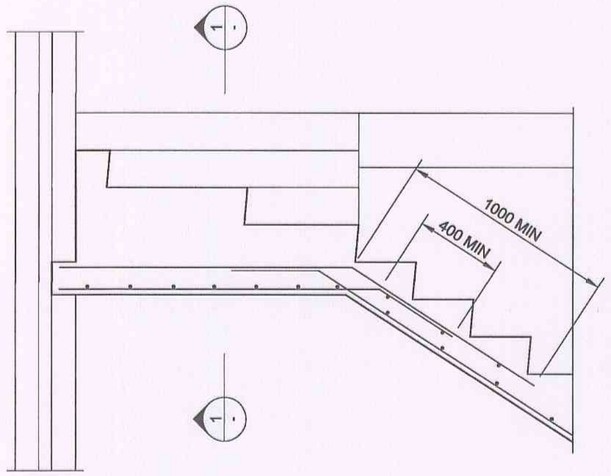
Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (06 - 069)
Project No.	Drawing. No.
SB3758	S2-02 C1

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

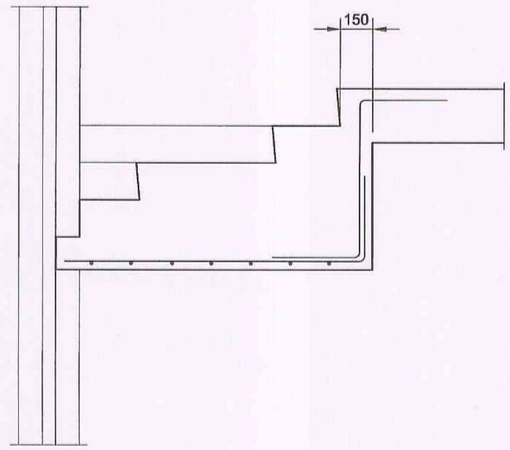
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



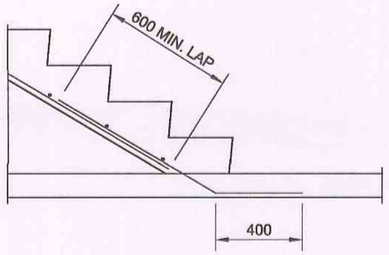
MAIN INTERNAL STAIR ELEVATION



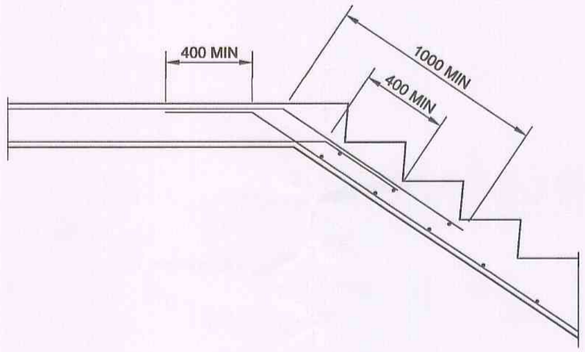
STAIR FLIGHT 4 & 5



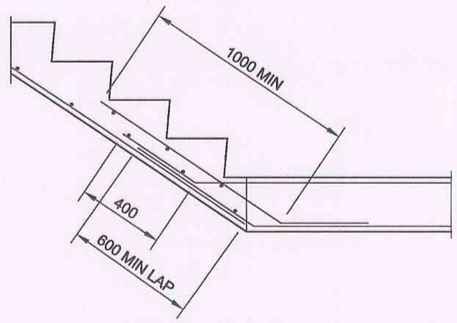
SECTION 1 -



STAIR FLIGHT 1 & 4



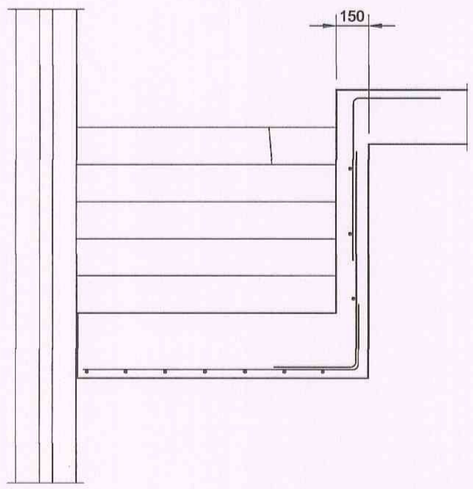
STAIR FLIGHT 1, 2 & 3



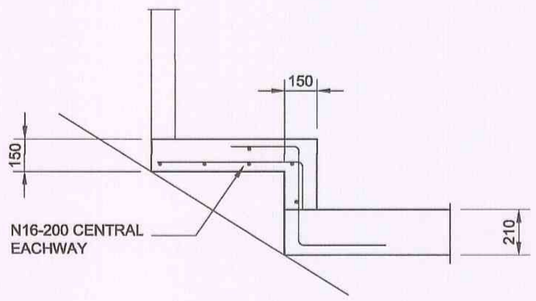
STAIR FLIGHT 2, 3 & 5

STAIR REINFORCEMENT SCHEDULE	
STAIR	REINFORCEMENT
No. 1, 2 & 3	7-N12 MAIN BARS
No. 4 & 5	7-N16 MAIN BARS

ALL STAIRS TO HAVE N12-300 CROSS BARS TOP & BTM AS REQUIRED.



SECTION 2 -



DETAIL A -

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

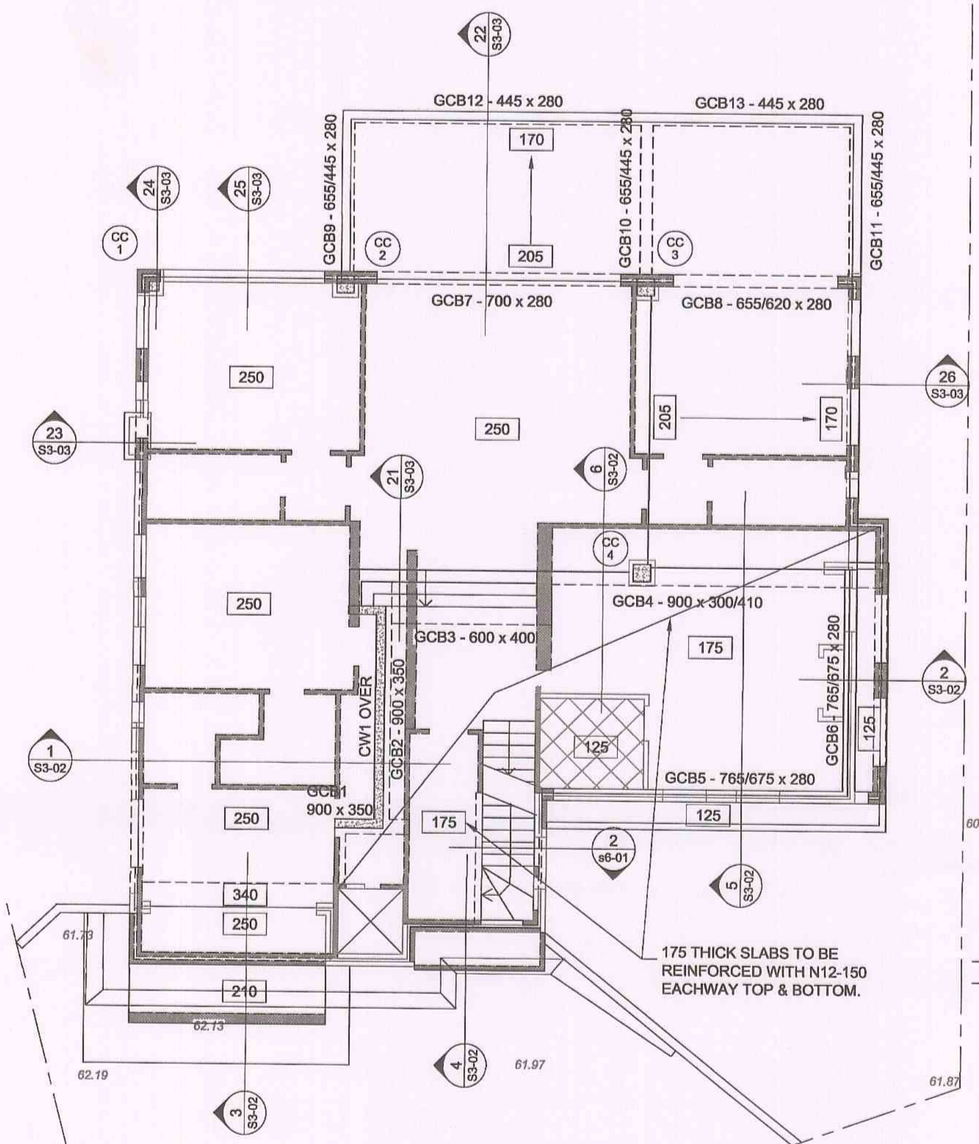
Drawing Title
STAIR DETAILS

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:100, 1:20	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S6-01 C1

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

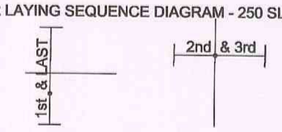
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



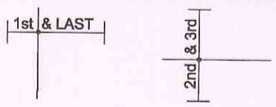
GROUND FLOOR PLAN

SLAB THICKNESS TO BE AS SHOWN ON PLAN AND SECTIONS.
SLABS TO BE REINFORCED WITH N16-200 EACHWAY TOP & BOTTOM EXCEPT WHERE SHOWN ON PLAN.
WATERPROOFING AND DRAINAGE TO ARCHITECTS DETAILS.
REFER TO DRAWING No. S0 - 01 FOR CONCRETE ROOF SLAB NOTE.

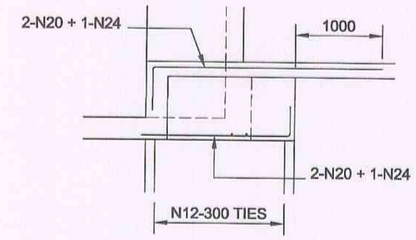
BAR LAYING SEQUENCE DIAGRAM - 250 SLABS



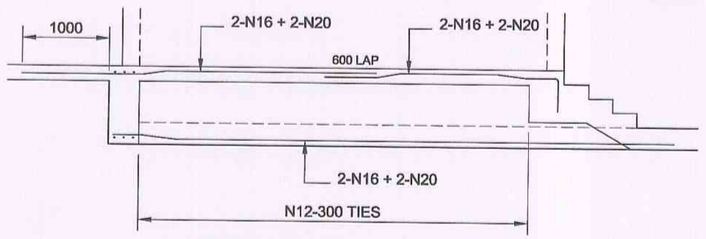
BAR LAYING SEQUENCE DIAGRAM - 175 SLABS



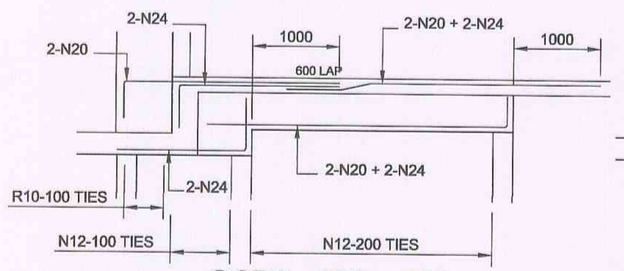
BEAM SCALES ARE 1:50
ALL COGS SHOWN TO BE 300 U.N.O.
REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
LENGTHS SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS OR SITE MEASUREMENTS. DO NOT SCALE THE DRAWING.
CRANK COLUMN OR BEAM BARS TO ACCOMMODATE INTERSECTIONS.
FOR BEAM SECTIONS REFER TO DRAWING NO. S3-02



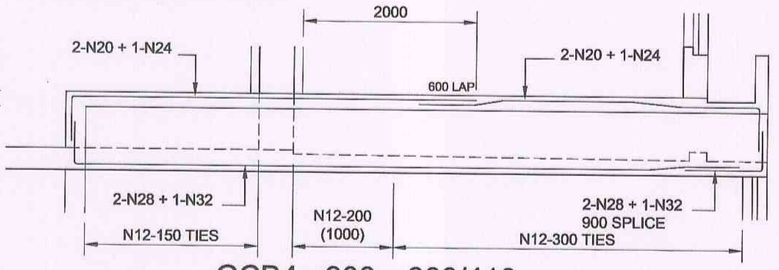
GCB1 - 900 x 350



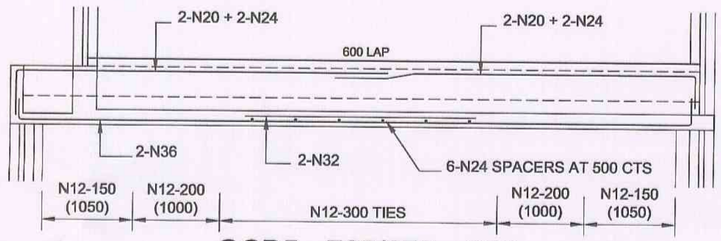
GCB2 - 900 x 350



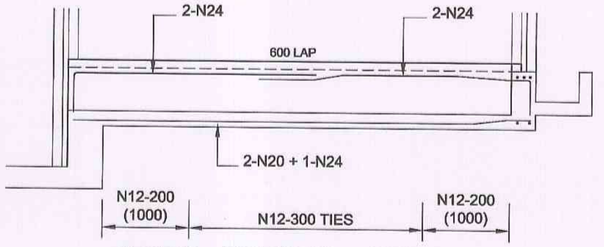
GCB3 - 600 x 400



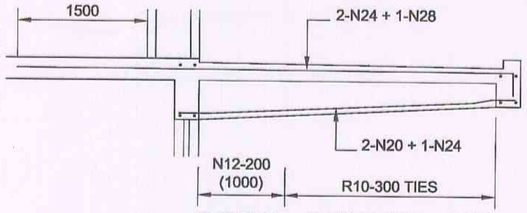
GCB4 - 900 x 300/410



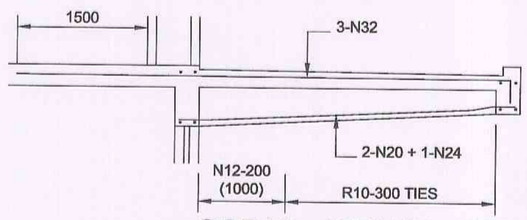
GCB5 - 765/675 x 280



GCB6 - 765/675 x 280

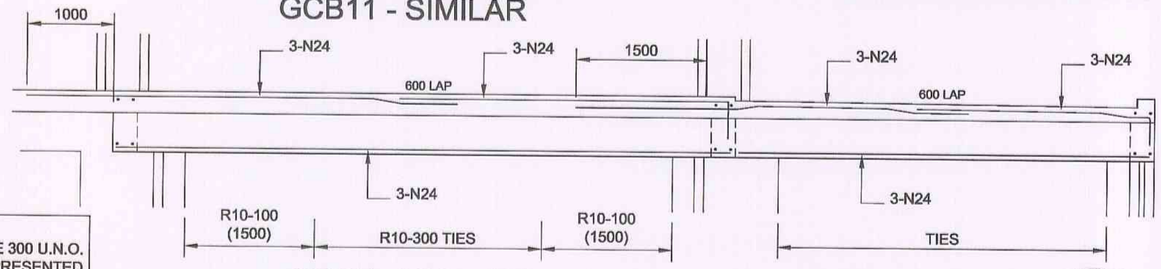


GCB9 - 655/445 x 280
GCB11 - SIMILAR

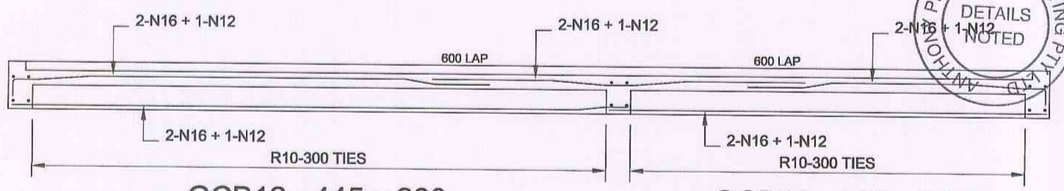


GCB10 - 655/445 x 280

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION



GCB7 - 700 x 280
GCB8 - 655/620 x 280



GCB12 - 445 x 280
GCB13 - 445 x 280

C2	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	
No.	Amendment	Date

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

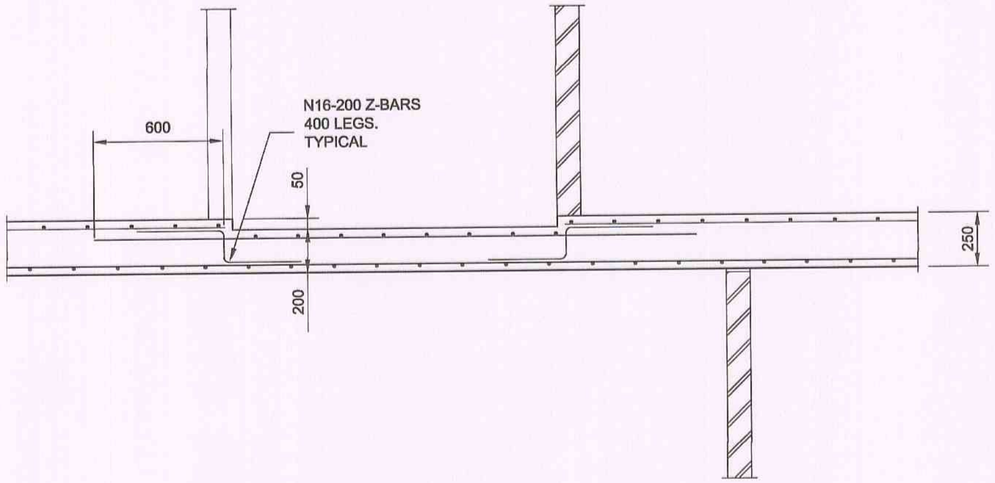
Drawing Title
GROUND FLOOR SLAB PLAN

AUTHORISED PROFESSIONAL CONSULTING PTY LTD
DETAILS NOTED

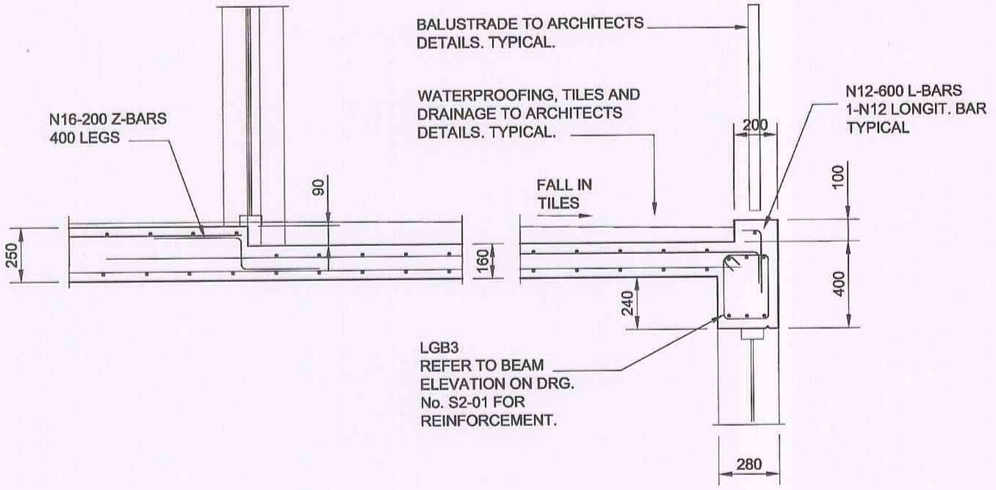
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

Date	Checked
11.07.2008	
Scale	Drawn
1:100	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S3-01 C2

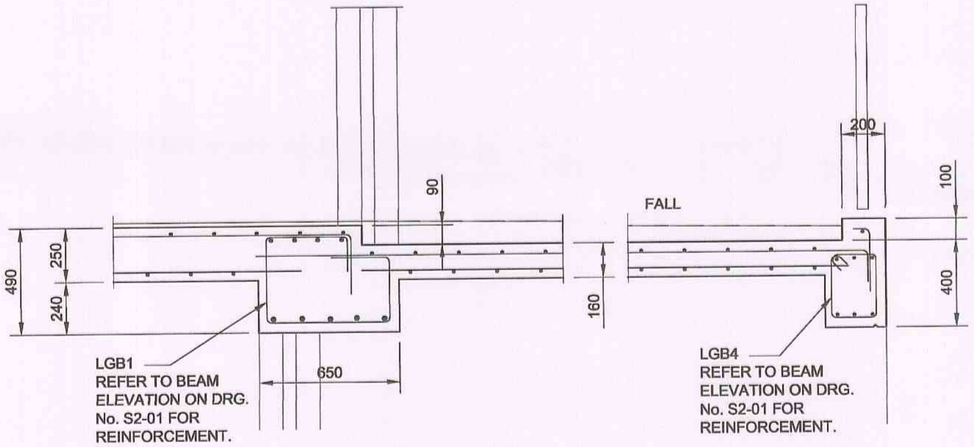
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



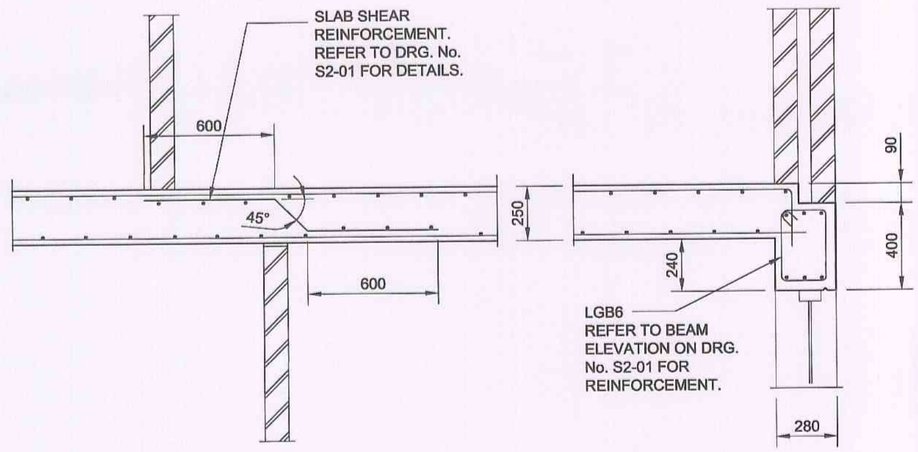
SECTION 21 S2-01



SECTION 22 S2-01



SECTION 23 S2-01



SECTION 24 S2-01

PRELIMINARY ISSUE
NOT FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

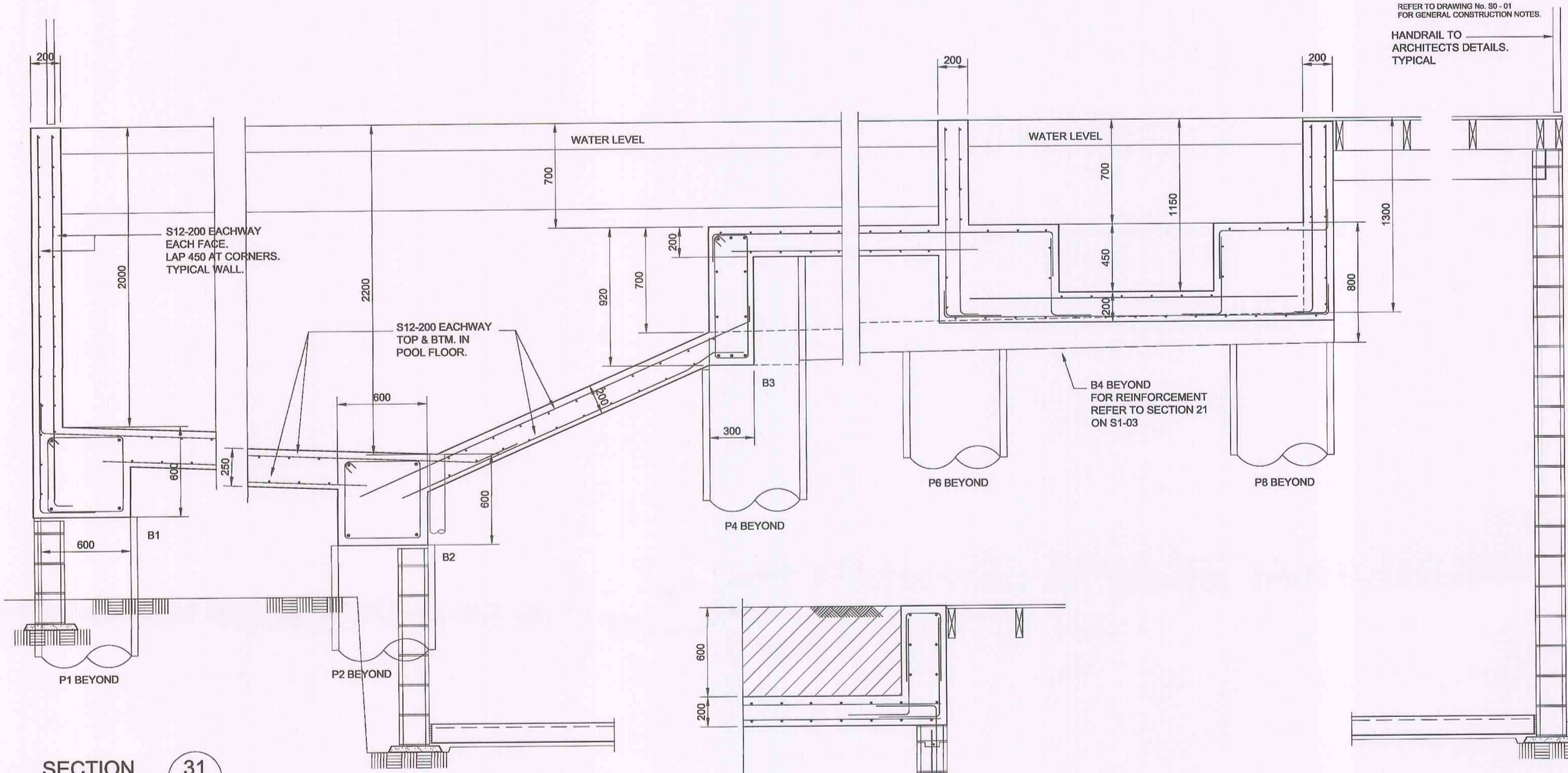
Drawing Title
LOWER GROUND FLOOR SLAB SECTIONS
SHEET 2

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

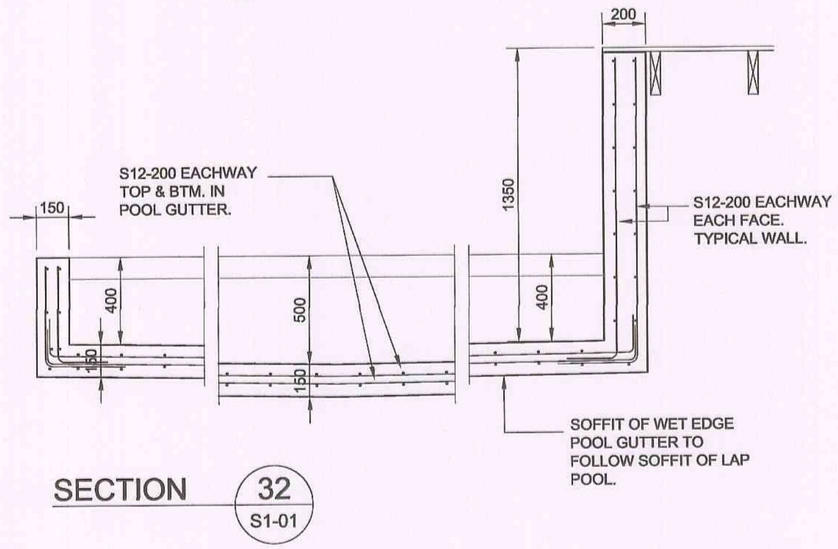
Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 058)
Project No.	Drawing. No.
SB3758	S2-03 C1

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

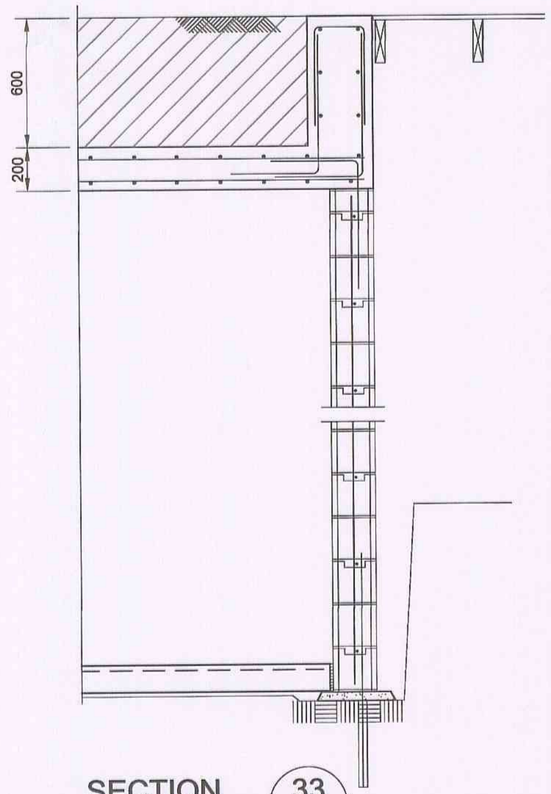
REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



SECTION 31 S1-01



SECTION 32 S1-01



SECTION 33 S1-01

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.0
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.0
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	08.1

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

Drawing Title
BASEMENT FLOOR SLAB SECTIONS
SHEET 3

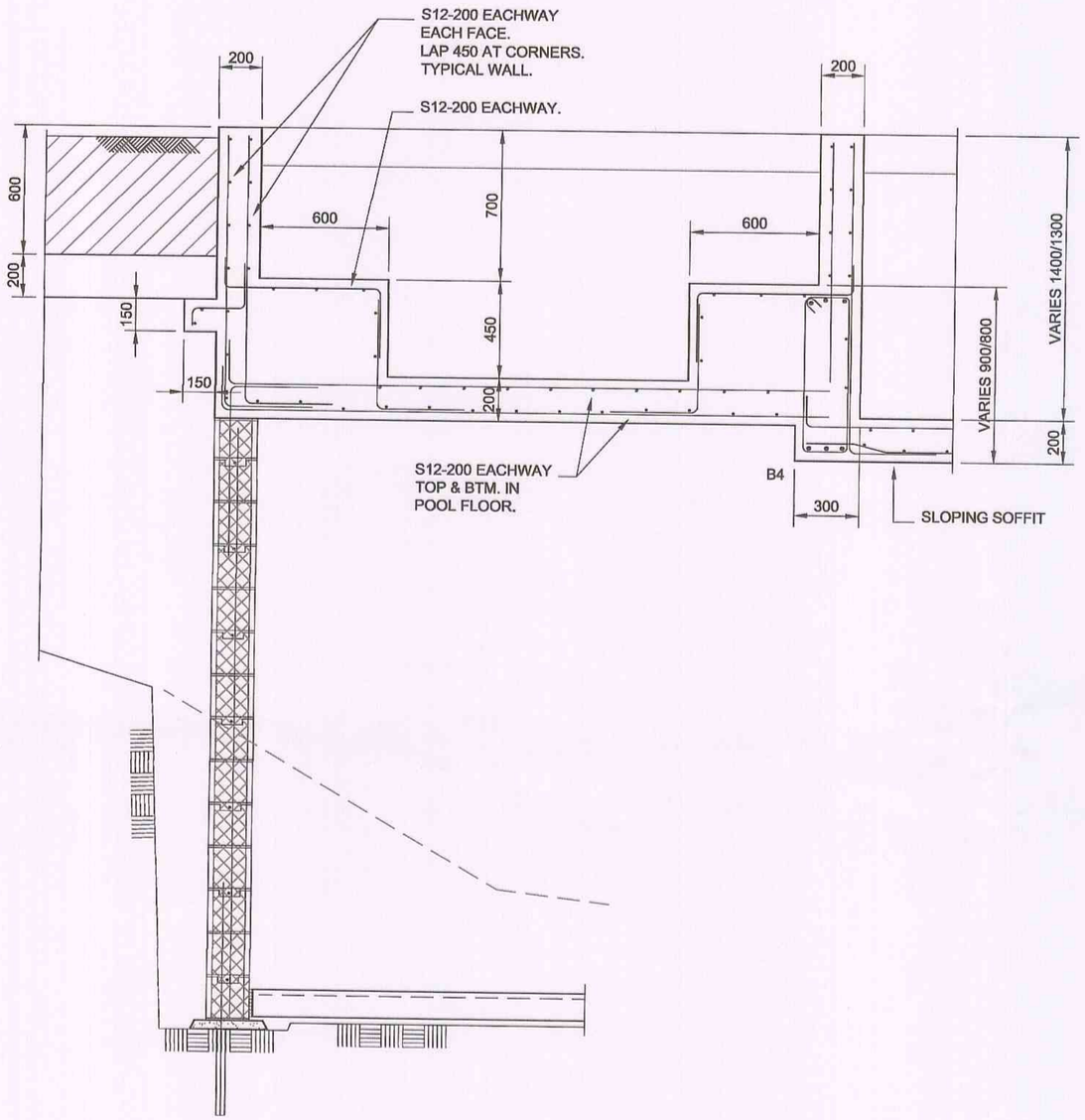
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

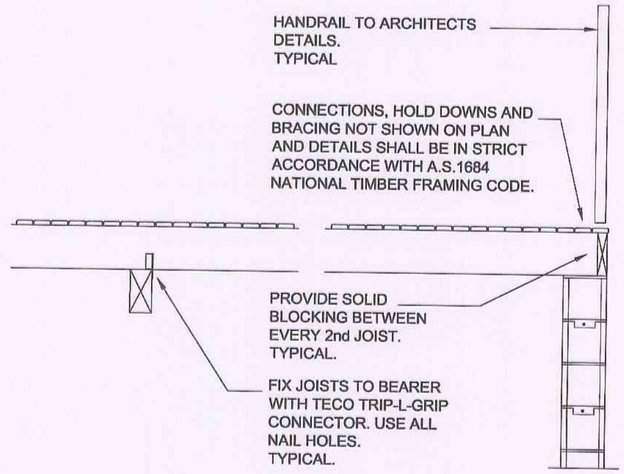
ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing. No.
SB3758	S1-04 C

REFER TO DRAWING No. S0 - 01
FOR GENERAL CONSTRUCTION NOTES.



SECTION 41 S1-01



SECTION 42 S1-01

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

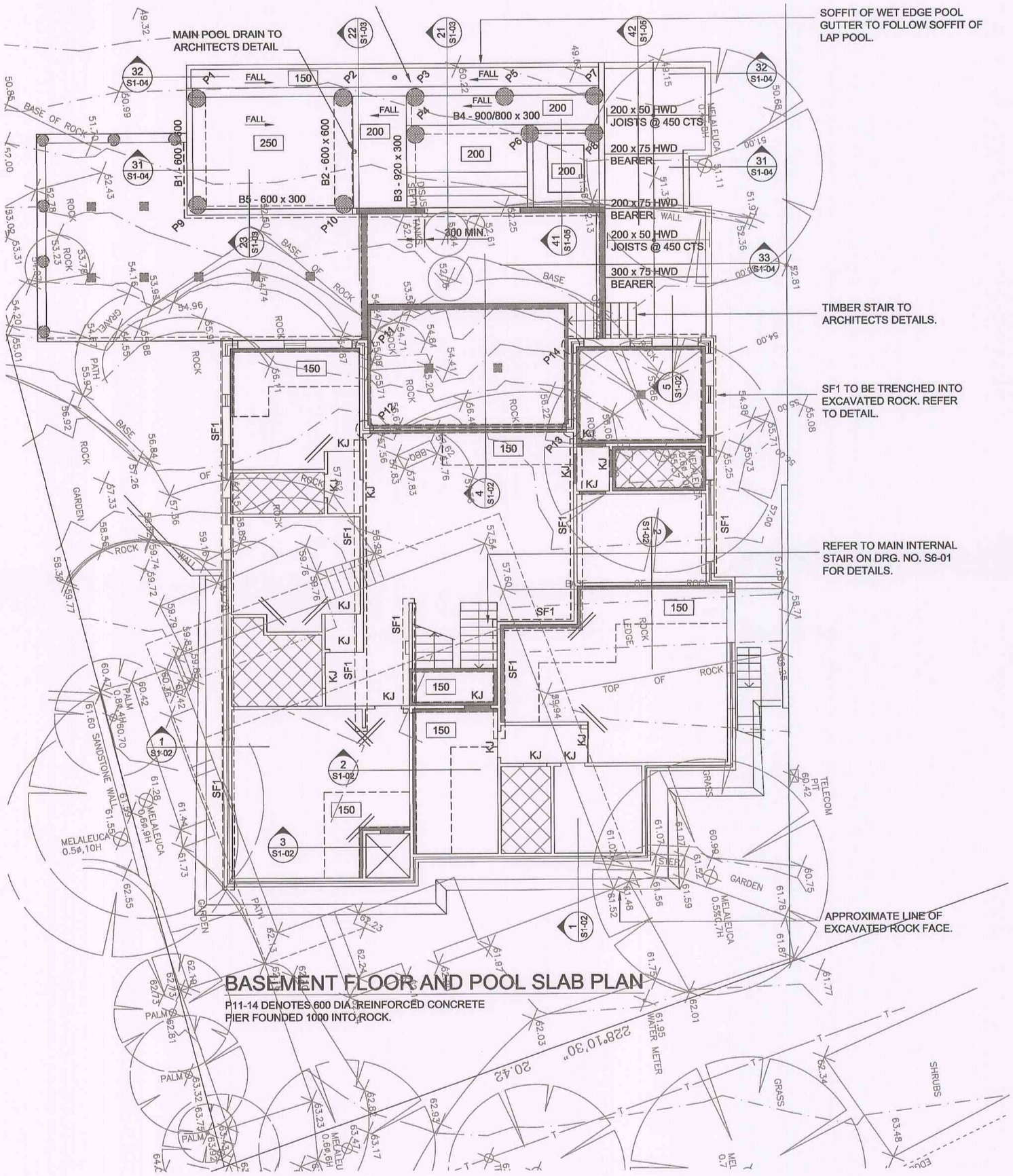
Client
MRS ROTHWELL

Architect
SUSAN ROTHWELL

Drawing Title
BASEMENT FLOOR SLAB SECTIONS
SHEET 4

Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

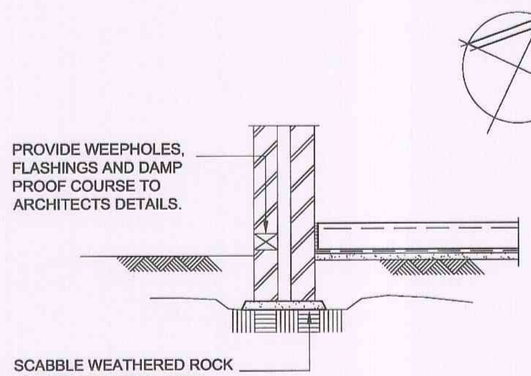
Date	Checked
11.07.2008	
Scale	Drawn
1:20	AST (08 - 059)
Project No.	Drawing No.
SB3758	S1-05 C1



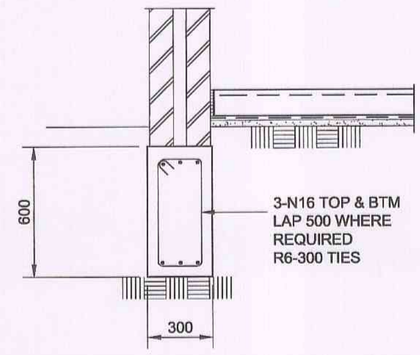
BASEMENT FLOOR AND POOL SLAB PLAN

P11-14 DENOTES 600 DIA. REINFORCED CONCRETE PIER FOUNDED 1000 INTO ROCK.

REFER TO DRAWING No. S0 - 01 FOR GENERAL CONSTRUCTION NOTES.



TYPICAL DETAIL BRICKWORK BUILT DIRECTLY ON ROCK



TYPICAL STRIP FOOTING SF1 DETAIL

ISSUED FOR CONSTRUCTION CERTIFICATE
NOT TO BE USED FOR CONSTRUCTION

No.	Amendment	Date
C2	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	26.03.09
C1	RE-ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	11.03.09
C	ISSUED FOR CONSTRUCTION CERTIFICATE ONLY	25.02.09
P	PRELIMINARY ISSUE. NOT FOR CONSTRUCTION.	08.12.08

Project
PROPOSED RESIDENCE
42 SUNRISE ROAD
PALM BEACH NSW

Client
MRS ROTHWELL

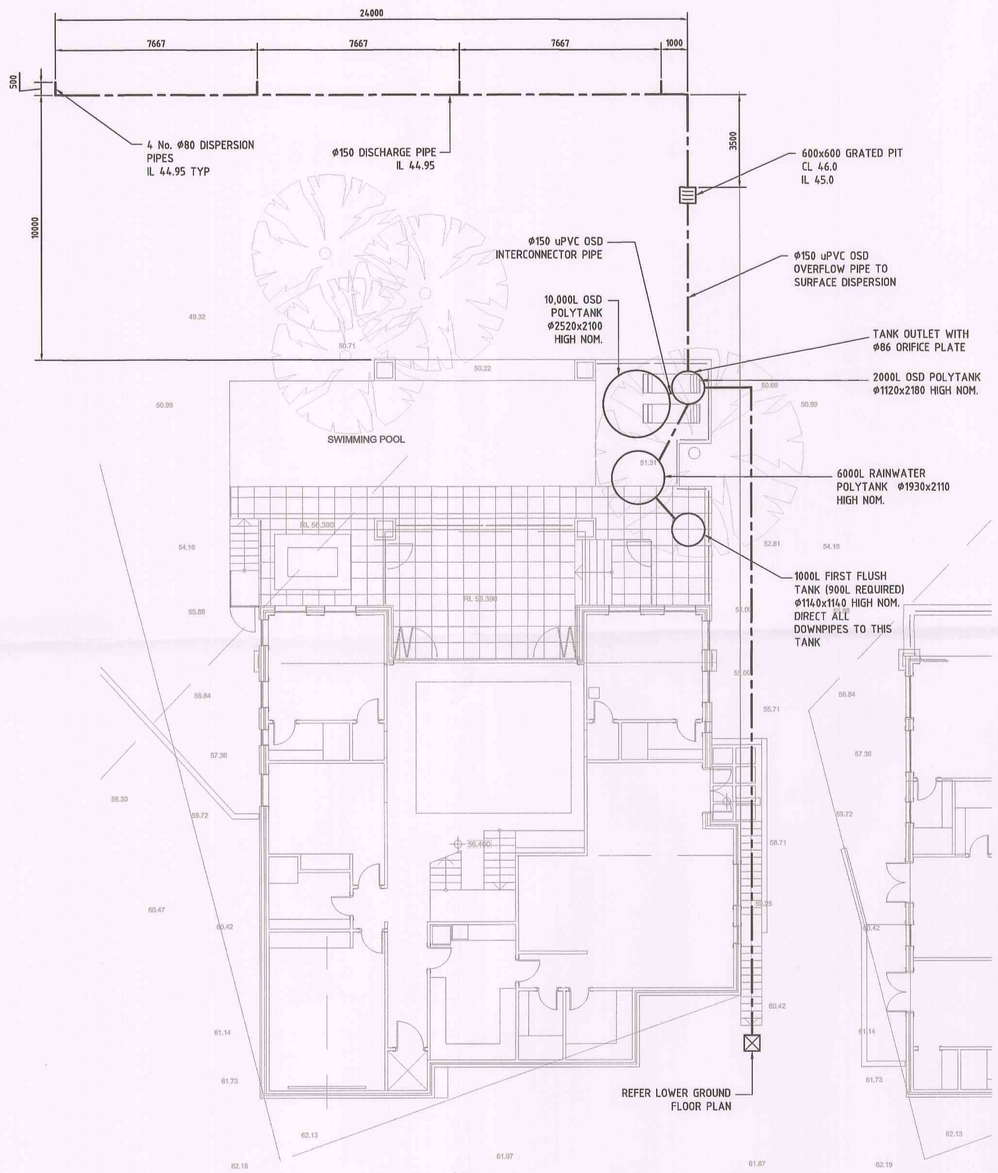
Architect
SUSAN ROTHWELL

Drawing Title
BASEMENT FLOOR SLAB & POOL PLAN

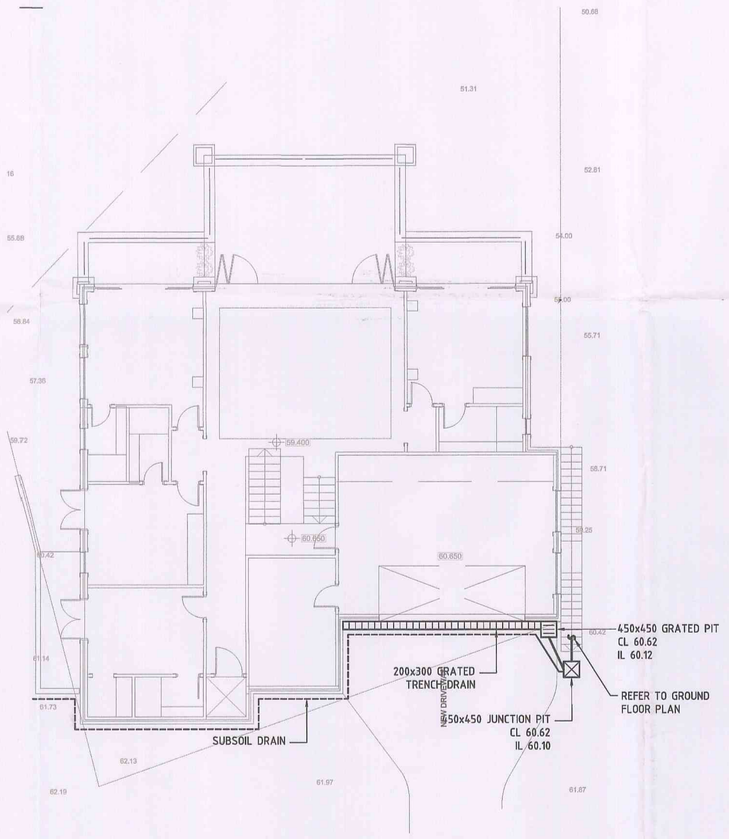
Duncan Bray Pty Ltd
Consulting Engineers
80 Great Buckingham Street
REDFERN NSW 2016
Telephone 02 9319 1067 Fax 02 9319 0750
Email duncbray@tpg.com.au

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

Date	Checked
11.07.2008	
Scale	Drawn
1:100	AST (08 - 050)
Project No.	Drawing. No.
SB3758	S1-01 C2



GROUND FLOOR PLAN



LOWER GROUND FLOOR PLAN

TANK NOTES

MAJOR STORM OUTLET FLOW 22L/s

TOTAL PER DISPERSION PIPE =5.5L/s

FOR ø80 PIPE, SUPPLY PIT DEPTH=0.2m FOR 5.5L/s

MAJOR STORM FLOW FROM EXISITNG DWELLING

(ASSUMING No OSD TANK OR RAINWATER TANK)

IS APPROXIMATELY 33L/s

LEGEND

ø100 @ 1%	STORMWATER PIPE, SIZE AND GRADE
SSD	SUB-SOIL DRAINAGE LINE
SWP 450 x 450	GRATED STORMWATER PIT AND SIZE
	TRENCH DRAIN
DP	DOWNPIPE
CO	CLEAR OUT POINT
IL. 50.00	INVERT LEVEL
CL. 50.00	COVER LEVEL

STORMWATER NOTES

1. ALL PIPES TO BE ø150 uPVC AT MIN 1% GRADE U.N.O
2. ALL 225 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "X" APPROVED SPIGOT AND SOCKET FRC OR VCP PIPES WITH RUBBER RING JOINTS. (U.N.O.) ALL DOWNPIPE DRAINAGE LINES SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS. (U.N.O.)
3. EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
4. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
5. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
6. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
7. PRECAST PITS SHALL NOT BE USED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE SUPERINTENDANT.
8. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75mm THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200mm ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150mm LAYERS TO 98% STANDARD MAX. DRY DENSITY.
9. BEDDING SHALL BE (U.N.O.) TYPE H1, IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS
10. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
11. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED uPVC SEWER GRADE PIPE SHALL BE USED.
12. PROVIDE 3.0m LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.
13. RAINWATER & OSD TANKS SHALL BE INSTALLED ON CAST INSITU CONCRETE BASES TO STRUCTURAL ENGINEERS DETAILS

ANTHONY PROTAS CONSULTING PTY LTD
DETAILS NOTED

NOT FOR CONSTRUCTION

Issue	Description	Date	Drawn	Chkd
A	ISSUE FOR APPROVAL	04.09.07	HIH	BHJ

1cm at full size

North

Client: MR & MRS ROTHWELL

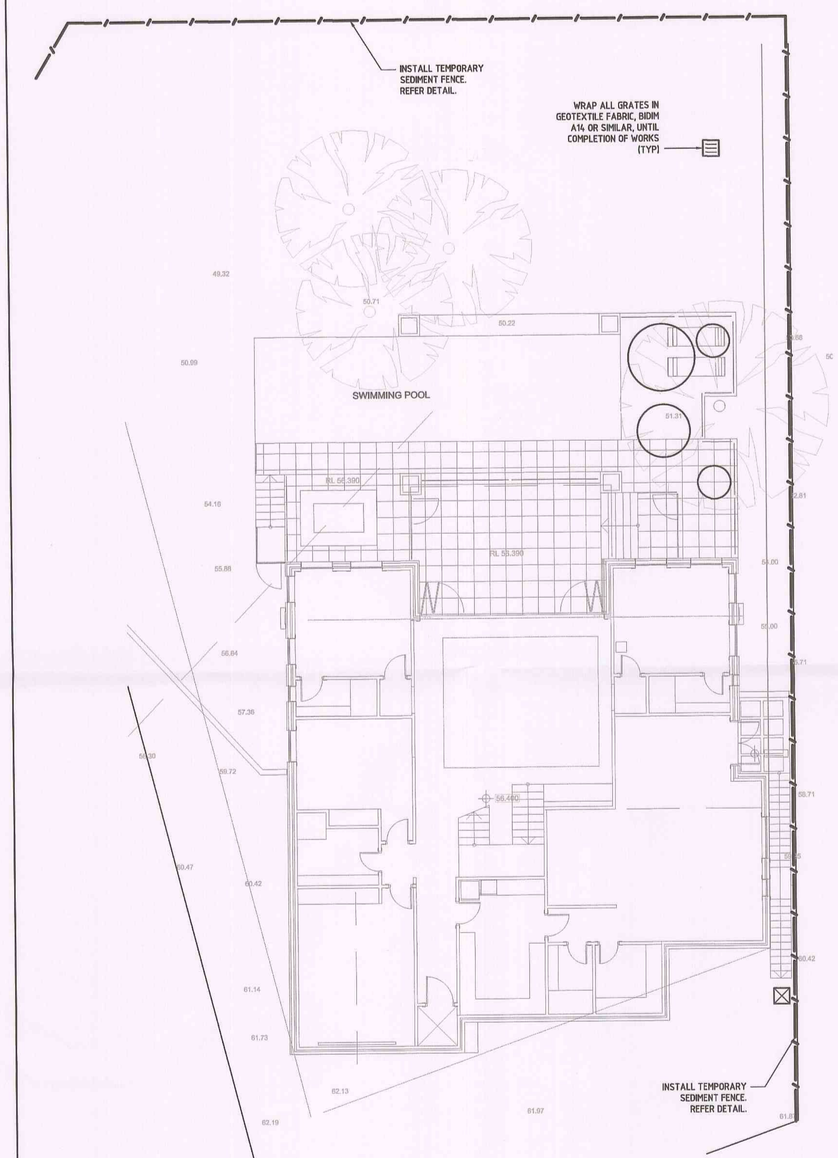
Architect: Susan Rothwell and Associates
38 Serpentine Road
Greenwich
PHONE : 9439 2380
FAX : 9901 3185

ACOR CONSULTANTS
ENGINEERS
MANAGERS
INFRASTRUCTURE
PLANNERS
Level 1, 24 Falcon Street
PO Box 622
Crows Nest NSW 2065
PH +61 2 9438 5098
fax +61 2 9436 5396
e-mail acor@acor.com.au

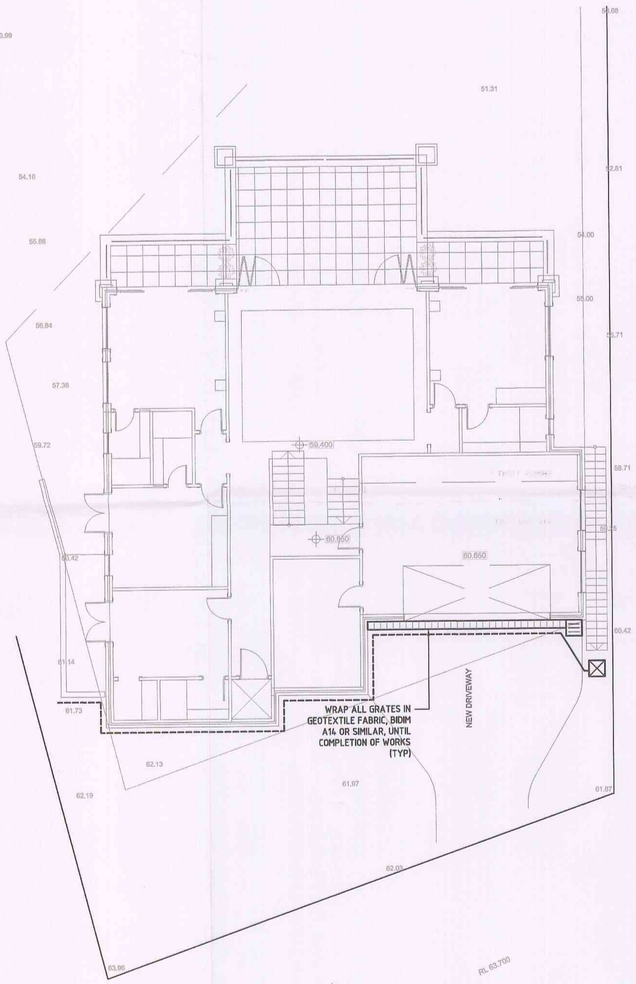
Project: PROPOSED NEW RESIDENCE
42 SUNRISE RD
PALM BEACH

Drawing Title: STORMWATER MANAGEMENT PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
H.I.H	SEP 2007	1:100		
Checked	Project No.	Dwg. No.	Issue
B.H.J	SY070315	C1.01	A



GROUND FLOOR PLAN



LOWER GROUND FLOOR PLAN

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

E1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.

E2. THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.

E3. ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE

E4. THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :

(a) INSTALL SEDIMENT FENCES

(b) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

E5. DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

E.6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING

E.7. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.

E.8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

E.9. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

E.10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

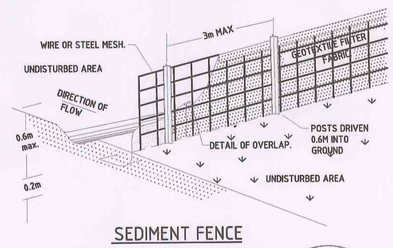
OTHER MATTERS

E.11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT WEIGHT WASTE MATERIALS AND LITTER.

E.12. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

SITE INSPECTION & MAINTENANCE

E.13. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.



SEDIMENT FENCE

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Architect: Susan Rothwell and Associates
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Greenwich
PHONE : 9439 2380
FAX : 9901 3185

ÂCOR CONSULTANTS
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MANAGERS
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PLANNERS
Level 1, 24 Falcon Street
PO Box 822
Crows Nest NSW 2065
PH +61 2 9438 5098
fax +61 2 9438 5398
e-mail acor@acor.com.au

Project: PROPOSED NEW RESIDENCE
42 SUNRISE RD
PALM BEACH

Drawing Title: SOIL EROSION AND SEDIMENT CONTROL PLAN

Drawn	Date	Scale	A1	Q.A. Check	Date
H.I.H	SEP 2007	1:100			
Checked	Project No.	Dwg. No.	Issue
B.H.J	SY070315	C2.01	A