Job No: 2003/215

Tuesday, 17 June 2003

Pittwater Council
PO Box 882
Mona Vale NSW 1660

Attention: General Manager

RE: 127-129 Barrenjoey Road, Mona Vale
DA No. N0986/02

Please find attached the information required to be submitted to Council prior to the Commencement of works. This information is to satisfy DA conditions B33, C6 (C6a & C6b), C18 and C22.

Should you have any queries, please contact our office.

Regards,

Peter Tran
Steve Watson & Partners

\\ZEUS\COMMON\Jobs\2003 Jobs\2003-215 127-129 Barrenjoey Road, Mona Vale\Certification\20030617letter Council issues prior to NOC.doc

LEVEL 22, 201 KENT STREET, SYDNEY NSW 2000
PO BOX N331, GROSVENOR PLACE NSW 1220
TEL +61 2 9247 1999 | FAX +61 2 9247 4244
www.swpartners.com.au
ABN 48 102 366 576

Job No: 2003/215

Tuesday, 17 June 2003

Pittwater Council
PO Box 882
Mona Vale NSW 1660

Attention: General Manager

RE: Construction Certificate No. 03/215/01
127-129 Barrenjoey Road, Mona Vale

Please find attached a copy of Construction Certificate 03/215/01 and required attachments issued by Steve Watson & Partners for the above mentioned development in accordance with Section 109C(1)(b) and 81A(2) of the Environmental Planning and Assessment Act 1979.

Please find attached a cheque in the amount of $26.00 payable for the registration of the Construction Certificate.

Regards,

Peter Tran
Steve Watson & Partners

S:\Jobs\2003 Jobs\2003-215 127-129 Barrenjoey Road, Mona Vale\Certification\20030617 CC attached letter to council.doc

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STEVE WATSON
& PARTNERS

Construction Certificate Checklist

Job: 127-129 BARRENJOEY RD, MONA VALE. **Job No:** 2003/215.

Council: PITTWATER COUNCIL. **DA No:** 986/02.

Prior to Construction Certificate

No.	Requirement	Status
1.	Are the CC plans consistent with the DA drawings?	Y
2.	Has the BCA assessment been completed and verified and any non-compliances resolved?	Y
3.	If the development involves alterations, additions or modifications to an existing building, with no change of use, will the fire protection and structural capacity not be reduced? (Cl 143(3) EPAR)	N
4.	If the development involves alterations, additions or modifications to an existing building, with a change of use, will the fire protection and structural capacity be appropriate to the new use and will the category 1 fire safety provisions comply? (Cl 143(1) EPAR) Category 1– EP1.3 – Hydrants; EP2.1 – Smoke detection in sleeping accomm. - EP1.4 – Sprinklers; EP2.2 – Smoke hazard management - EP 1.6 – Fire control room; EP3.2 – Emergency lifts	N/A
5.	Does the design / documentation provide sufficient detail to shown the intent to comply with the BCA?	Y
6.	Have 4 (5 required if Council not Consent Auth) copies of drawings been received?	Y
7.	Has the original CC forms been completed, signed and returned?	Y
8.	Has the proposed and existing fire safety schedule been provided?	Y
9.	If an alt sol is involved, has the report been provided and approved? (Has a Compliance Certificate been provided for the alt sol if required)?	N/A
10.	Has the alt sol been referred to the Brigade if required under 144 of the EPAR?	N/A
11.	Have Brigades comments been received regarding alt sol and incorporated into the CC?	N/A
12.	Have DA conditions required to be satisfied prior to CC been addressed?	Y
13.	Has evidence of Long Service Levy Payment been provided?	Y
14.	If the Approval is for **residential work** have the Home Building Act requirements been satisfied?	N/A
15.	For residential flat developments, has design verification been received as required under Cl 143A of the EPAR.	N/A

CONSTRUCTION CERTIFICATES CAN NOT BE ISSUED UNTIL THIS SHEET IS SIGNED BY STEVE WATSON

Assessment completed by: _____ (Sign) 15/06/03 (Dated)

Verified by Steve Watson: _____ (Sign) 18/6 (Dated)

STEVE WATSON
& PARTNERS

BUILDING REGULATIONS CONSULTANTS AND CERTIFIERS

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CONSTRUCTION CERTIFICATE

Construction Certificate No. 03/215/01

I, Steve Watson, certify that if the work 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.

Applicant	Name: **Dr Malcolm Charles Cooke** Address: **c/- MHDP, 271 Alfred Street** Suburb: **North Sydney** State: **NSW** Postcode: **2060**
Location of the Property	Address: **127-129 Barrenjoey Road** Suburb: **Mona Vale** State: **NSW** Postcode: **2103** Real Property Description: **Lot 1, DP No. 515041**
Building description	**Alterations, additions and part removal of the existing building including new walkways and landscaping.**
Building Code of Australia Classification	**Class 5 & 6**
Date of Receipt	Date Received: **13th June 2003**
Determination	**Approved** Date of Determination: **17th June 2003**
Development Consent	Development Consent Number: **986/02** Date of Determination: **25th March 2003**

Attachments

1. Plans and specifications endorsed by this certificate
2. Fire safety schedule

STEVE WATSON & PARTNERS
03/215/01
Construction Certificate
Steve Watson IE Aust #2030801

Steve Watson
Accreditation Body: **IEAust** Accreditation no: **2030801**

Date of Endorsement: **Tuesday, 17 June 2003**

Design documentation approved for Construction Certificate 03/215/01 for 127-129 Barrenjoey Road, Mona Vale.

Drawing No.	Drawing Title	Revision	Date	Drawn by
A 16	Site and Roof Plan	CC	November 2002	Mark Hurcum Design Practice Architects
A 17	Floor Plan	CC	November 2002	Mark Hurcum Design Practice Architects
A 18	Elevations	CC	November 2002	Mark Hurcum Design Practice Architects
A 19	Elevations and Section	CC	November 2002	Mark Hurcum Design Practice Architects

STEVE WATSON
& PARTNERS

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FIRE SAFETY SCHEDULE

Under Clause 168 of the Environmental Planning and Assessment Regulations 2000 a Construction Certificate for proposed building work cannot be issued until a Fire Safety Schedule specifying the fire safety measures (both current and proposed) that should be implemented in the building premises is issued.

A fire safety schedule:

(a) must deal with the whole of the building, not merely the part of the building which the construction certificate relates, and

(b) must include:
  (i) The fire safety measures currently implemented in the building premises, and
  (ii) The fire safety measures proposed or required to be implemented in the building premises, as are statutory fire safety measures, and

(c) must distinguish between:
  (i) the fire safety measures currently implemented in the building premises, and
  (ii) the fire safety measures proposed or required to be implemented in the building premises, and

(d) must identify each measure that is a critical fire safety measure and the intervals (being intervals less than 12 months) at which supplementary fire safety statements must be given to the Council in respect of each such measure, and

(e) must specify the minimum standard of performance for each fire safety measure included in the schedule.

Existing Fire Safety Schedule

Schedule to Application for Construction Certificate (To be filled out for an application except for, or in respect of, a class 1a or class 10 building) (for the whole building and the land on which it is situated)

Item No.	Existing Measure	Is this measure installed in the building?	Standard of performance. (eg. AS 2118)
1.	Access Panels, doors and hoppers to fire resisting shaft	Nil	
2.	Automatic fail safe devices	Nil	
3.	Automatic fire detection and alarm system	Nil	
4.	Automatic fire suppression system	Nil	
5.	Emergency lighting	Nil	
6.	Emergency Lifts	Nil	
7.	Emergency Warning and intercommunication system	Nil	
8.	Exit signs	Nil	
9.	Fire control centres and rooms	Nil	
10.	Fire dampers	Nil	
11.	Fire Doors	Nil	
12.	Fire Hydrant systems	Nil	
13.	Fire Seals (protecting openings in fire resisting components of the building)	Nil	
14.	Fire Shutters	Nil	
15.	Fire windows	Nil	
16.	Hose reel system	Nil	
17.	Light weight construction	Nil	
18.	Mechanical air handling systems	Nil	
19.	Perimeter vehicle access for emergency vehicles	Nil	
20.	Portable fire extinguishers	Nil	
21.	Safety curtains in proscenium openings	Nil	
22.	Smoke and Heat Vents	Nil	
23.	Smoke dampers	Nil	
24.	Smoke detectors and heat detectors	Nil	
25.	Smoke doors	Nil	
26.	Solid-Core doors	Nil	
27.	Stand-By Power Systems	Nil	
28.	Wall wetting sprinkler and drencher systems	Nil	
29.	Warning and operations signs	Nil	

Proposed Fire Safety Schedule

Schedule to Application for Construction Certificate (To be filled out for an application except for, or in respect of, a class 1a or class 10 building) (for the whole building and the land on which it is situated)

Item No.	Proposed Measure	Is this measure proposed to be installed building?	Standard of performance. (eg. AS 2118)
1.	Access Panels, doors and hoppers to fire resisting shaft		
2.	Automatic fail safe devices		
3.	Automatic fire detection and alarm system		
4.	Automatic fire suppression system		
5.	Emergency lighting	Yes	BCA Clause E4.2, E4.4 and AS/NZS 2293.1 – 1998
6.	Emergency Lifts		
7.	Emergency Warning and intercommunication system		
8.	Exit signs	Yes	BCA96 Clause E4.5, NSW E4.6, E4.8 and AS/NZS 2293.1 – 1998
9.	Fire control centres and rooms		
10.	Fire dampers		
11.	Fire Doors		
12.	Fire Hydrant systems		
13.	Fire Seals (protecting openings in fire resisting components of the building)		
14.	Fire Shutters		
15.	Fire windows		
16.	Hose reel system		
17.	Light weight construction		
18.	Mechanical air handling systems		
19.	Perimeter vehicle access for emergency vehicles		
20.	Portable fire extinguishers	Yes	BCA96 Clause E1.6 and AS 2444 - 2001
21.	Safety curtains in proscenium openings		
22.	Smoke and Heat Vents		
23.	Smoke dampers		
24.	Smoke detectors and heat detectors		
25.	Smoke doors		
26.	Solid-Core doors		
27.	Stand-By Power Systems		
28.	Wall wetting sprinkler and drencher systems		
29.	Warning and operations signs		

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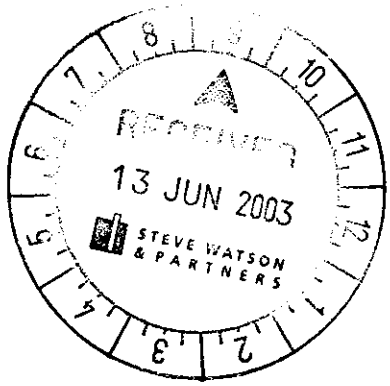
STEVE WATSON & PARTNERS



APPLICATION FOR CONSTRUCTION CERTIFICATE

PART 1 Application and Site Details

Applicant
It is important that we are able to contact you if we need more information.

Please give us as much detail as possible.

Mr Mrs Miss Ms Other (DR)

Surname (or Company): COOKE

Given names (or ABN): MALCOLM CHARLES

c/- MARK HURCUM DESIGN PRACTICE

Address: 271 ALFRED ST NORTH, NORTH SYDNEY

State: NSW Post Code: 2060

Phone: (02) 99555608 Fax: (02) 99555608

Mobile: — E-mail: —

Please ensure you sign the declaration on the back of this application

Owner's Consent
Every owner of the land must sign this form.

If the owner is a company, an authorised director must sign the form.

Surname (or Company): COOKE

Given names (or ABN): MALCOLM CHARLES

Address: 139 LAGOON STREET, NARRABEEN

State: NSW Post Code: 2101

Phone: (02) 9997 8511 Fax: (02) 9997 4402

Mobile: — E-mail: —

As owner of the land to which this application relates, I consent to this application. I also consent for SWP staff to enter the land to carry out inspections relating to this application.

Signature(s): [signature] Date: 10 / 06 / 03

Without the owner's consent, we will not accept the application. This is a very strict requirement for all applications. If you are signing on the owner's behalf as the owner's legal representative, you must state the nature of your legal authority and attach documentary evidence (eg. Power of attorney, executor, trustee , company director, etc)

Location of the Property
We need this to correctly identify the land.

Address: 127 - 129 BARRENJOEY ROAD, MONA VALE

NSW - Post Code: 2103

Real Property Description: LOT 1
(eg. Lot/DP/Section, etc) D.P. 515041

these details are shown on your rate notices, property deeds etc

PART 2 Work Description

Description of Work
Please describe briefly everything that you want approved.

Building Work

ALTERATIONS + ADDITIONS + PART REMOVAL OF THE EXISTING BUILDING INCL. NEW WALKWAYS + LANDSCAPING

Estimated Cost of Work *(inclusive of GST)*

$ 290,000 —

Development Consent	Development Consent No: 986/02 Date of Determination: 25/03/03
Building Code of Australia Classification	BCA Classification: CLASS 5+6 *This information is nominated on your development consent*
Builder Details *If known.* *To be completed in the case of residential building work.*	Owner-Builder Licensed Builder Name: CORFAX ENTERPRISES PTY LTD Licence/~~permit No.~~ 89655C

PART 3 Checklist

Where relevant, have you provided/completed the following:	Yes	Not Relevant
• 4 copies of plans, elevations and sections	✓	
• 4 copies of specifications	✓	
• 2 copies of compliance certificates relied upon		✓
• List of any existing and proposed fire safety measures (Refer to the Fire Safety Schedule)	✓	
• Evidence of Home Building Act requirements satisfied		✓
• Evidence that Long Service Levy has been paid	✓	
• Schedule to application for a construction certificate is completed	✓	-
• Owners consent	✓	-
• Applicants signature	✓	-

PART 4 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)	????? 1
Gross floor area of new building (m2)	????? 352
Gross site area (m2)	????? 840.6

Residential buildings only — N/A

Please complete the following details on residential structures:

Number of dwellings to be constructed ?????

Number of pre-existing dwellings on site ?????

Number of dwellings to be demolished ?????

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? Yes No
(NB dual occupancy = two dwellings on the same site)

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						

PART 5 Notes for Completing Application for a Construction Certificate

The following information must accompany applications for a Construction Certificate for Building Work

1. The ABS schedule is required to be completed for the purposes of providing information to the Australian Bureau of Statistics.

2. Copies of Compliance Certificates Relied upon.

3. Four (4) copies of all plans and specifications must be submitted with your application. Plans for the building must be drawn to a suitable scale and consist of a general plan and a block plan. The general plan of the building is to:
   a) Show a plan of each floor section.
   b) Show a plan of each elevation.
   c) Show the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground.
   d) Indicate the height, design, construction and provisions for fire safety and fire resistance.

4. Where proposed building work involves any alteration or addition to, or rebuilding of, an existing building the plan is to be coloured or otherwise marked to distinguish the prosed work to be approved.

5. Where the proposed building work involves a modification to previously approved plans and specifications the general plans must be coloured or marked up to adequately distinguish the modifications.

6. The specification is:
   a) To describe the construction and materials of which the building is to be built and the method of drainage, sewerage and water supply.
   b) State whether the materials proposed to be used are new or second hand and give particulars of any second hand materials used.

7. Where the application involves an alternative solution to meet the Performance Requirements of the BCA, the application must also be accompanied by:
   a) Details of the Performance Requirements that the alternative solution is intended to meet, and
   Details of the assessment methods used to establish compliance with those Performance Requirements.

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

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

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

10 The Development Approval conditions together with stamped approved DA drawings are to be provided for our assessment of the development and record purposes.

11 Under section 109F(1)(b) of the *Environmental Planning and Assessment Act 1979* a Construction Certificate cannot be issued until any long service levy payable 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) has been paid. The local council may be authorised to accept payment.

12 In the case of an application for a Construction Certificate for residential building work (within the meaning of the Home Building Act 1989) attach the following:
   a) In the case of work performed by a licensee under that Act:
      i) A statement detailing the licensee's name and contract licence number, and
      ii) documentary evidence that the licensee has complied with the applicable requirements of that Act*, or
   b) in the case of work done by an y other person:
      i) a statement detailing the persons name and owner-builder permit number, or
      ii) a declaration signed by the owner of the land, to the effect that the reasonable market cost of the labour and materials involved in the work is less than the amount prescribed for the purposes of the definition of owner-builder work in section 29 of that Act. *(If the building work is less than $5,000 provide a statement that states the proposed work is less than $5,000)*

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

PART 6 Declaration

ALL THE DETAILS SOUGHT IN THE CHECKLIST MUST BE PROVIDED.

THE COMPLETED CHECKLIST MUST BE SUBMITTED WITH THIS APPLICATION. FAILURE TO PROVIDE THE REQUIRED DOCUMENTATION OF AN ACCEPTABLE STANDARD WILL RESULT IN YOUR APPLICATION BEING RETURNED.

Declaration

If the applicant is a company or strata title body corporate, a director or authorised delegate must sign this declaration.

I apply for approval to carry out the development or works described in this application. I declare that all the information in the application and checklist is, to the best of my knowledge, true and correct.

I also understand that if the information is incomplete the application may be delayed or rejected or more information may be requested. I acknowledge that if the information provided is misleading any approval granted 'may be void'.

Signature Allied Cook Date: 12 / 06 / 03

CARFAX

Commercial Construction

Commercial Fitout

Project Management

Construction Management

17 June 2003

Steve Watson & Partners
Level 22
201 Kent St
SYDNEY NSW 2000

Attention: Mr Guiseppe Graziano

Project: 127 – 129 Barrenjoey Road, Mona Vale

We hereby notify that the photos taken of the road reserve and footpath area adjoining the above project are a true and accurate representation of the existing condition of the site as at the 16 June 2003.

If you wish to discuss this matter further please do not hesitate to contact the undersigned.

Yours sincerely

Paul Reimer
Carfax Enterprises Pty Ltd

Carfax Enterprises Pty Ltd
PO Box 88, Killara NSW 2071 Telephone 02 9499 2203 Facsimile 02 9498 1917 carfaxent@optusnet.com.au
ABN 43 082 682 782 Builders Licence No. 89655C

CARFAX

Commercial Construction

Commercial Fitout

Project Management

Construction Management

17 June 2003

Steve Watson & Partners
Level 22
201 Kent St
SYDNEY NSW 2000

Attention: Mr Guiseppe Graziano

Project: 127 – 129 Barrenjoey Road, Mona Vale

We hereby notify that the Building Setout and Erosion Controls required for the above project will be carried out in accordance with the Building Code of Australia, relevant Australian Standards and any condition of Development Consent.

If you wish to discuss this matter further please do not hesitate to contact the undersigned.

Yours sincerely

Paul Reimer
Carfax Enterprises Pty Ltd

Carfax Enterprises Pty Ltd
PO Box 88, Killara NSW 2071 Telephone 02 9499 2203 Facsimile 02 9498 1917 carfaxent@optusnet.com.au
ABN 43 082 682 782 Builders Licence No. 89655C

Pittwater Council

Component Certificate

DA No: N0986/02

CC No:

Property: 129 BARRENJOEY ROAD MONA VALE NSW 2103

Erosion Controls

ER-1

I Paul Reimer (Name) of Carfax Enterprises P/L (Business)

at PO Box 88, Killara NSW 2071 (Mailing Address)

being an:

☐ accredited certifier

☒ licensed builder

my qualifications being:

.....

.....

hereby certify that the **erosion and sediment controls** have been installed in accordance with the approved Erosion and Sediment Management Plan as nominated on the Development Consent/Construction Certificate or where not nominated, the requirements of the NSW Department of Conservation and Land Management's "Urban Erosion and Sediment Control" manual and the relevant conditions of Development Consent.

Further, I am appropriately qualified and experienced to provide the certification for this component of the project.

Signature ..... Date 17 June 2003

Landscaping by Design
Creating quality landscape constructions
Licence Number 138589C

16th June 2003

Leanne Smith
Carfax Enterprises Pty Ltd
PO Box 88
KILLARA NSW 2071

Dear Leanne,

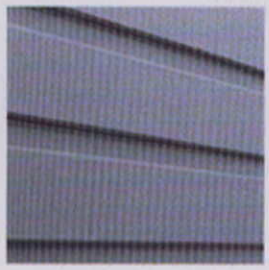
Landscaping By Design Pty Ltd has compiled the following information for landscape works at 127-129 Barrenjoey Road, Mona Vale.

Plant order: A full list of plants as per plant schedule on drawing number L2-186 has been submitted to Andreasens Green Wholesale Nursery, Kemps Creek. Delivery will take place when appropriate and all planting and landscape works will be carried out as per specifications and drawings L1-186 and L2-186.

Thankyou for the opportunity to carry out this project, please contact me with any questions relating to this information or fax any new details on 98172379. I look forward to hearing from you soon and working on this project.

Yours Sincerely
Landscaping By Design Pty Ltd

Michael Ryan. B.La.



WALLS

BLUE/GREY COLOUR

HIGHLIGHT
COLOUR

BLACKBERRY
FROST

WALLS

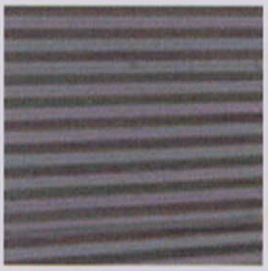
STONE COLOUR

COLUMN AND FASCIA
COLOUR

MARY JANES

WALLS

GUM GREY COLOUR



COLORBOND FINISH
METAL ROOF

WINDSPRAY

EXTERNAL FINISHES SCHEDULE

127 - 129 BARRENJOEY ROAD MONA VALE JUNE 2003

DESIGN PRACTICE


16/06/2003


16/06/2003


16/06/2003


16/06/2003


POWER BILT GOLF
FACTORY CLEARANCE CENTRE
AND SHOWROOM
16/06/2003


16/06/2003


16/06/2003


16/06/2003


16/06/2003


DRIVEWAY
16/06/2003


16/06/2003

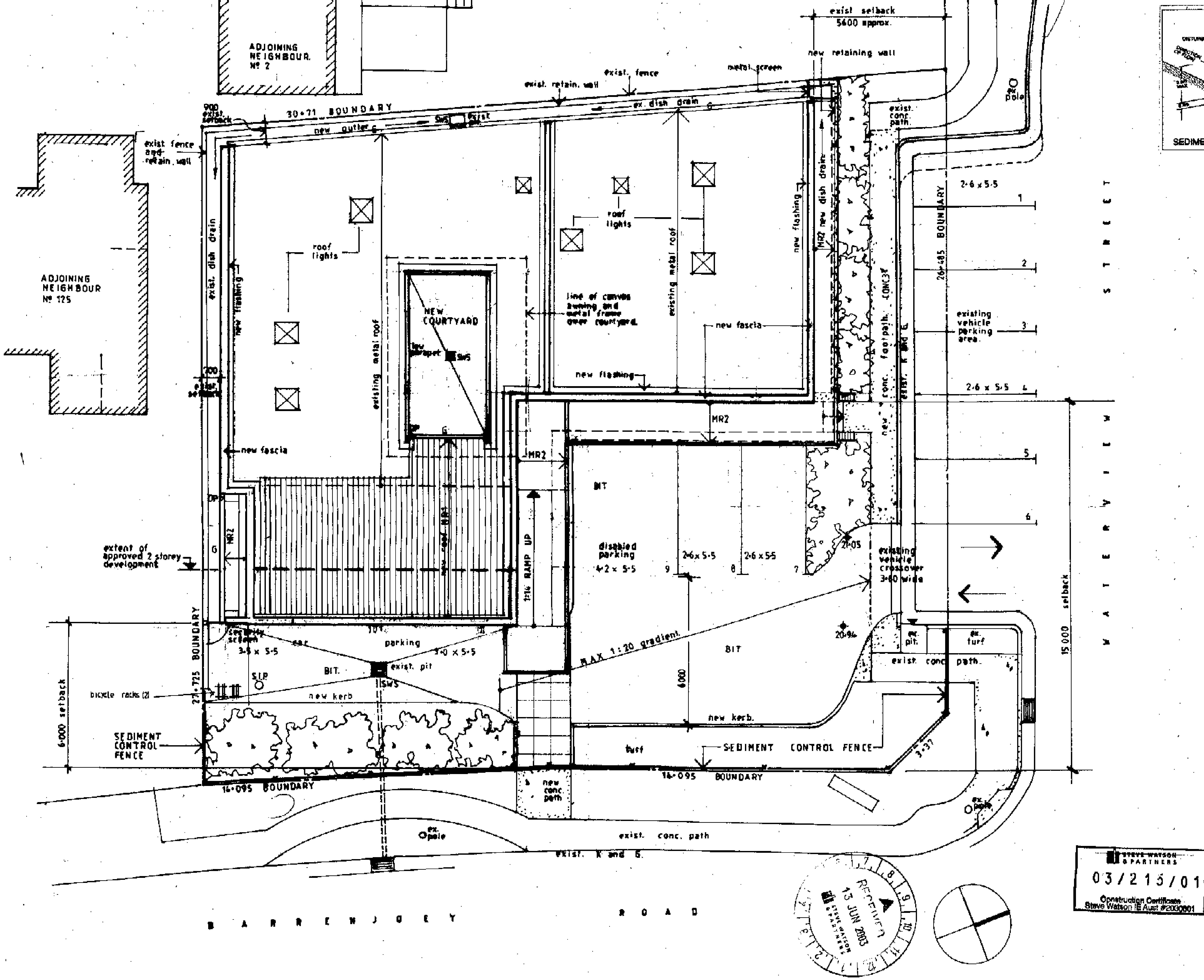

16/06/2003

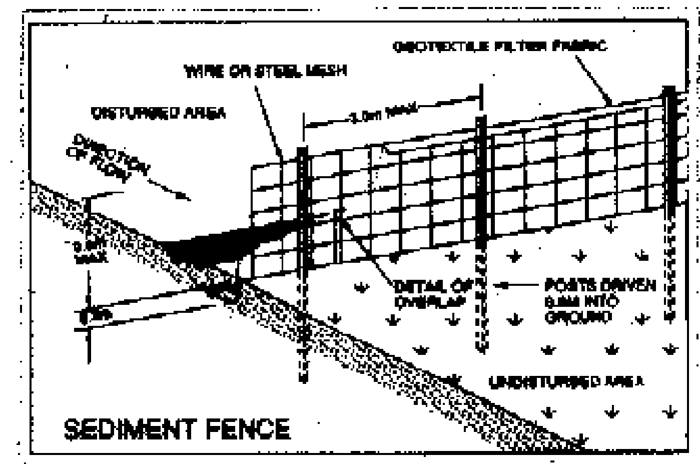

DRIVEWAY
16/06/2003


16/06/2003


16/06/2003


OWER
16/06/2003





LEGEND

- BIT - NEW BITUMEN ON PREPARED BASE TO ENGINEERS DETAIL
- BLK - CONCRETE BLOCK RETAINING WALL
- BWK 1 - 270mm BRICKWORK CAVITY WALL FLUSH JOINT AND PAINT FINISH
- BWK 2 - BAG AND PAINT FINISH FLUSH JOINT BRICKWORK DWARF WALLS
- COL 1 - STEEL COLUMN TO ENGINEERS DETAILS
- CONC 1 - STEEL TROWEL FINISH R.C. SLAB TO ENG. DETAILS
- CONC 2 - R.C. STAIRS TO ENGINEER'S DETAIL WITH BULL NOSE TERRACOTTA TREADS PAINTED RISERS
- CONC 3 - CONCRETE SLAB TO ENGINEERS DETAILS
- COS - CHECK ON SITE
- CPT - CARPET ON UNDERLAY
- CT - CERAMIC FLOOR TILES
- DP - COLORBOND FINISH RAINWATER CIRCULAR DOWNPIPE CONNECTED INTO EXISTING STORMWATER SYSTEM
- EX - EXISTING
- FC - FIBROUS CEMENT SHEETING PAINT FINISH
- FC 1 - [illegible] FIBROUS CEMENT [illegible] OR EQUIVALENT PAINT FINISH
- FEN - PAINT FINISH GALV. M.S. FENCE AND GATES
- FL - FLASHING
- G - COLORBOND FINISH QUADRANT EAVES GUTTER
- [illegible]
- MHR - PAINT FINISH GALV. M.S. HANDRAIL
- MR 1 - ZINCALUME METAL ROOF SHEET ON SARKING AND INSULATION TO MATCH EXISTING
- MR 2 - COLORBOND METAL ROOF SHEETING
- O - OBSCURE GLAZING
- OF - OVERFLOW OUTLET
- PB 1 - PAINT FINISH PLASTERBOARD [illegible] STUD FRAME PARTITION WALL WITH FIBREGLASS BATTS
- PAV - EXTERNAL CERAMIC TILES
- PL - PLANTER
- PMC - COLORBOND PRESSED METAL CAPPING
- RL - REDUCED LEVEL
- SH - ADJUSTABLE EXTERNAL WESTERN RED CEDAR OR FINISHED TIMBER SHUTTERS
- SWS - STORMWATER SUMP
- WB - [illegible] WEATHERBOARDS EQUAL TO JAMES HARDIE NEWPORT STYLE
- V - VINYL FLOOR COVERING

AMENDMENT	DATE	ISSUE
ISSUED FOR CONSTRUCTION CERTIFICATE	June 2003	CC
ISSUED FOR DEVELOPMENT APPLICATION	NOV 02	A

DESIGN PRACTICE

MARK HURCUM DESIGN PRACTICE
ARCHITECTS

LEVEL 2 271 ALFRED STREET NORTH
NORTH SYDNEY NSW 2060
FACSIMILE (02) 9955 5063
TELEPHONE (02) 9922 5686

PROJECT TITLE
ALTERATIONS & ADDITIONS AT 127-129 BARRENJOEY ROAD MONA VALE

FOR
DR M COOKE

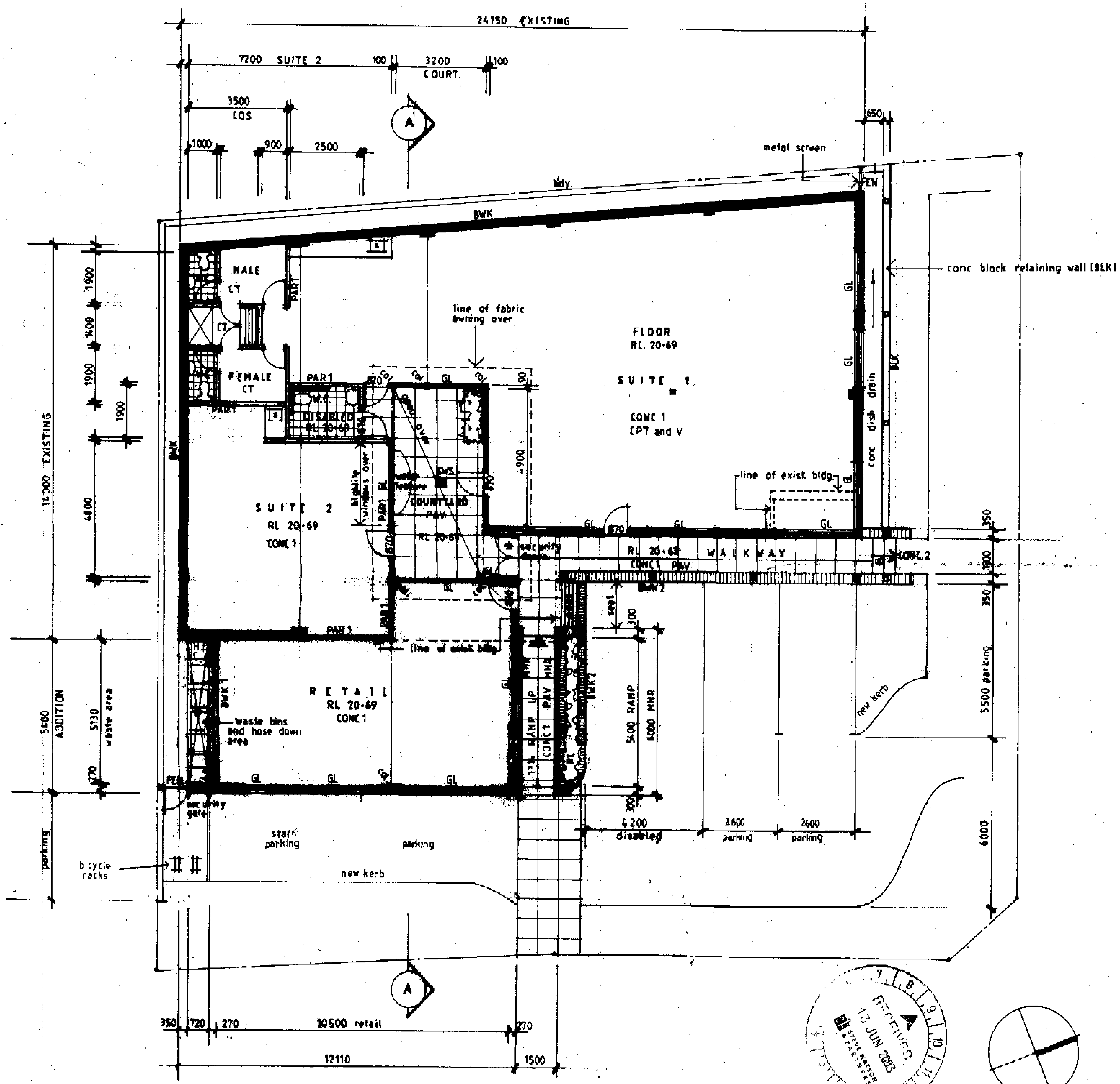
DRAWING TITLE
SITE AND ROOF PLAN

DATE	DRAWN BY
NOVEMBER 2002	GC
PROJECT No	**SCALE**
0105	1:100
DRAWING No	**ISSUE**
A 16	CC

STEVE WATSON & PARTNERS
03/215/01
Construction Certificate
Steve Watson IE Aust #2000801

RECEIVED 13 JUN 2003 STEVE WATSON & PARTNERS

✱ GLAZED SECURITY DOORS PINNED IN OPEN POSITION DURING TRADING HOURS.



Steve Watson & Partners
03/215/01
Construction Certificate
Steve Watson IE Aust #2030801

RECEIVED 13 JUN 2003 STEVE WATSON & PARTNERS

1:14

LEGEND

- BIT - NEW BITUMEN ON PREPARED BASE TO ENGINEERS DETAIL
- BLK - CONCRETE BLOCK RETAINING WALL
- BWK 1 - 270mm BRICKWORK CAVITY WALL FLUSH JOINT AND PAINT FINISH
- BWK 2 - BAG AND PAINT FINISH FLUSH JOINT BRICKWORK DWARF WALLS
- COL 1 - STEEL COLUMN TO ENGINEERS DETAILS
- CONC 1 - STEEL TROWEL FINISH R.C. SLAB TO ENG. DETAILS
- CONC 2 - R.C. BEAMS TO ENGINEER'S DETAIL WITH BULL NOSE TERRACOTTA TREADS PAINTED RISERS
- CONC 3 - CONCRETE SLAB TO ENGINEERS DETAILS
- COS - CHECK ON SITE
- CPT - CARPET ON UNDERLAY
- CT - CERAMIC FLOOR TILES
- DP - COLORBOND FINISH RAINWATER CIRCULAR DOWNPIPE CONNECTED INTO EXISTING STORMWATER SYSTEM
- EX - EXISTING
- FC - FIBROUS CEMENT SHEETING PAINT FINISH
- FC 1 - 9MM FIBROUS CEMENT SHEET "HARDITEX" OR EQUIVALENT PAINT FINISH
- FEN - PAINT FINISH GALV. M.S. FENCE AND GATES
- FL - FLASHING
- G - COLORBOND FINISH QUADRANT EAVES GUTTER
- MHR - PAINT FINISH GALV. M.S. HANDRAIL
- MR 1 - ZINCALUME METAL ROOF SHEET ON SARKING AND INSULATION TO MATCH EXISTING
- MR 2 - COLORBOND METAL ROOF SHEETING
- O - OBSCURE GLAZING
- OF - OVERFLOW OUTLET
- PAR 1 - PAINT FINISH PLASTERBOARD 90mm STUD FRAME PARTITION WALL WITH FIBREGLASS BATTS
- PAV - EXTERNAL CERAMIC TILES
- PL - PLANTER
- PMC - COLORBOND PRESSED METAL CAPPING
- SL - STRUCTURAL LEVEL
- SH - ADJUSTABLE EXTERNAL WESTERN RED CEDAR OR FINISHED TIMBER SHUTTERS
- SWS - STORMWATER SUMP
- WB - PRIMELINE WEATHERBOARDS EQUAL TO JAMES HARDIE NEWPORT STYLE
- V - VINYL FLOOR COVERING

ISSUED FOR: CONSTRUCTION CERTIFICATE	June 03	CC
ISSUED FOR DEVELOPMENT APPLICATION AMENDMENT	NOV 02	A
	DATE	ISSUE

DESIGN PRACTICE

MARK HURCUM DESIGN PRACTICE
ARCHITECTS

LEVEL 2 271 ALFRED STREET NORTH
NORTH SYDNEY NSW 2060
FACSIMILE 02) 9955 5043
TELEPHONE 02) 9955 5600

PROJECT TITLE

ALTERATIONS & ADDITIONS AT 127-129 BARRENJOEY ROAD MONA VALE

FOR DR M COOKE

DRAWING TITLE

FLOOR PLAN

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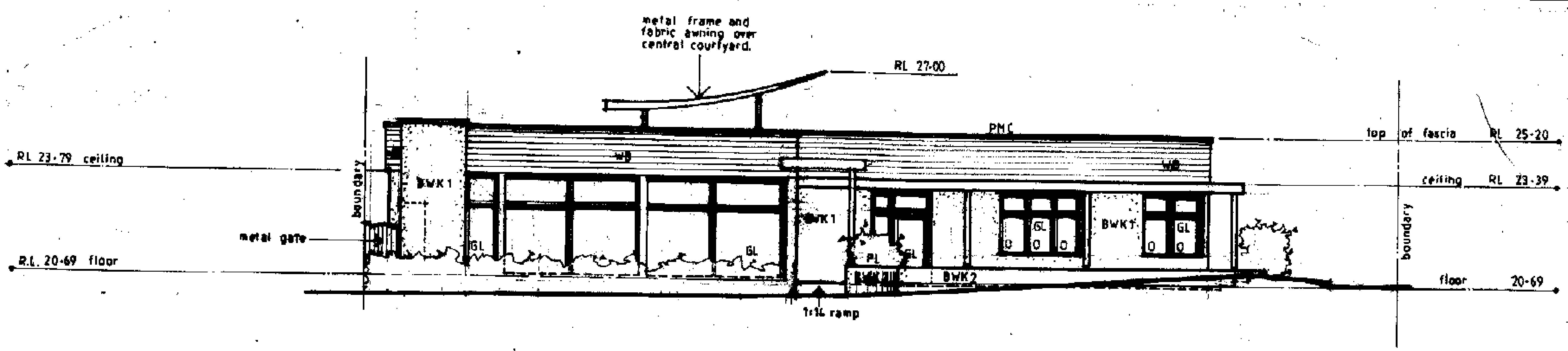
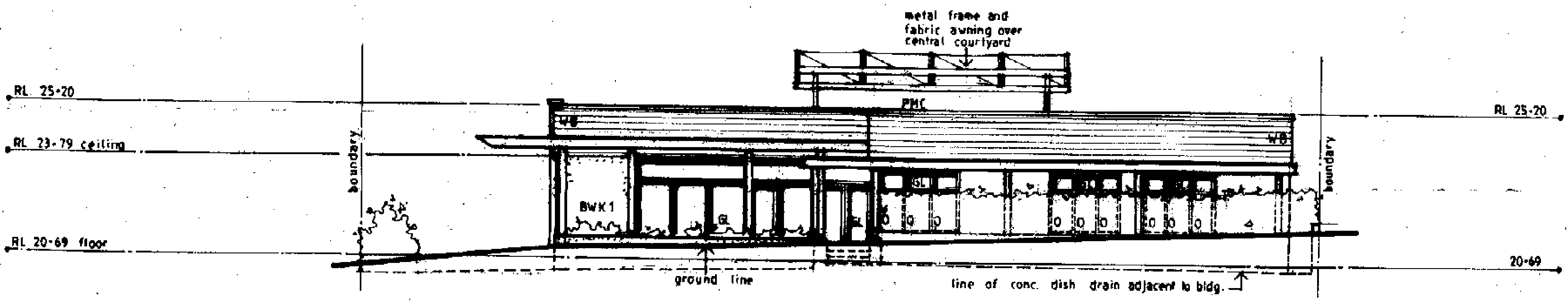


1:100 EAST ELEVATION



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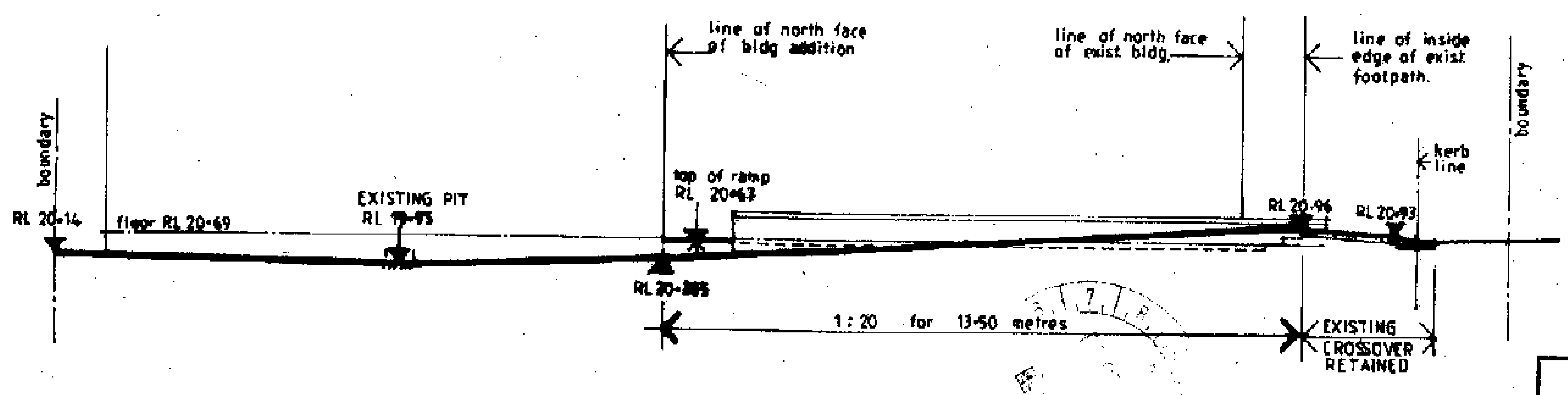

1:100 DRIVEWAY LONG SECTION

STEVE WATSON & PARTNERS
03/215/01
Construction Certificate
Steve Watson IE Aust #P030801

LEGEND

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CPT	-	CARPET ON UNDERLAY
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FC	-	FIBROUS CEMENT SHEETING PAINT FINISH
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[illegible]	-	[illegible] TILES
PL	-	PLANTER
PMC	-	COLORBOND PRESSED METAL CAPPING
SL	-	STRUCTURAL LEVEL
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DESIGN PRACTICE
MARK KUCUM DESIGN PRACTICE
ARCHITECTS
LEVEL 2 271 ALFRED STREET NORTH
NORTH SYDNEY NSW 2060
FACSIMILE (02) [illegible]
TELEPHONE (02) [illegible]

PROJECT TITLE
ALTERATIONS & ADDITIONS
AT
127-129 BARRENJOEY ROAD
MONA VALE
FOR
DR M COOKE

DRAWING TITLE
ELEVATIONS

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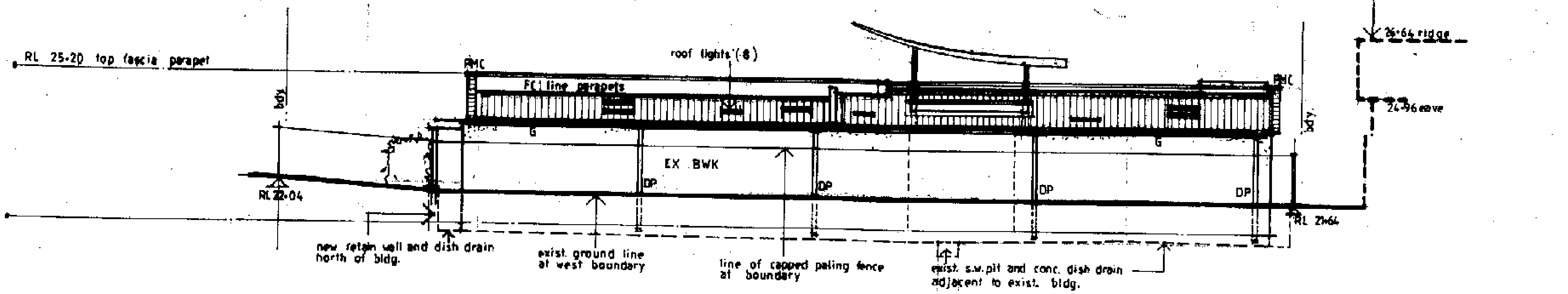
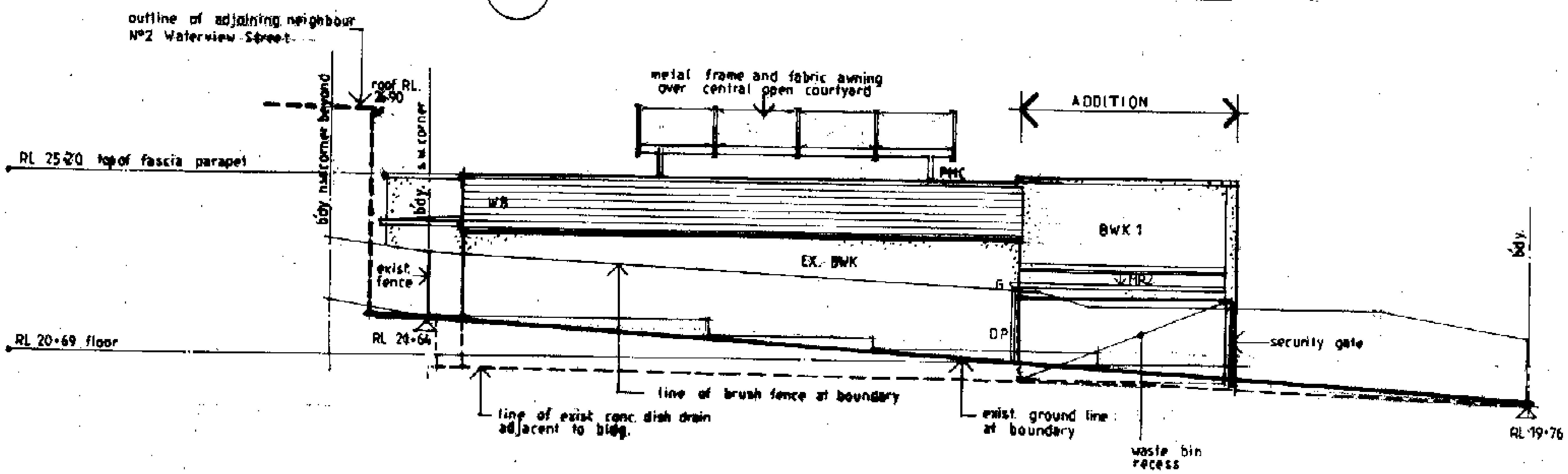


1:100 WEST ELEVATION



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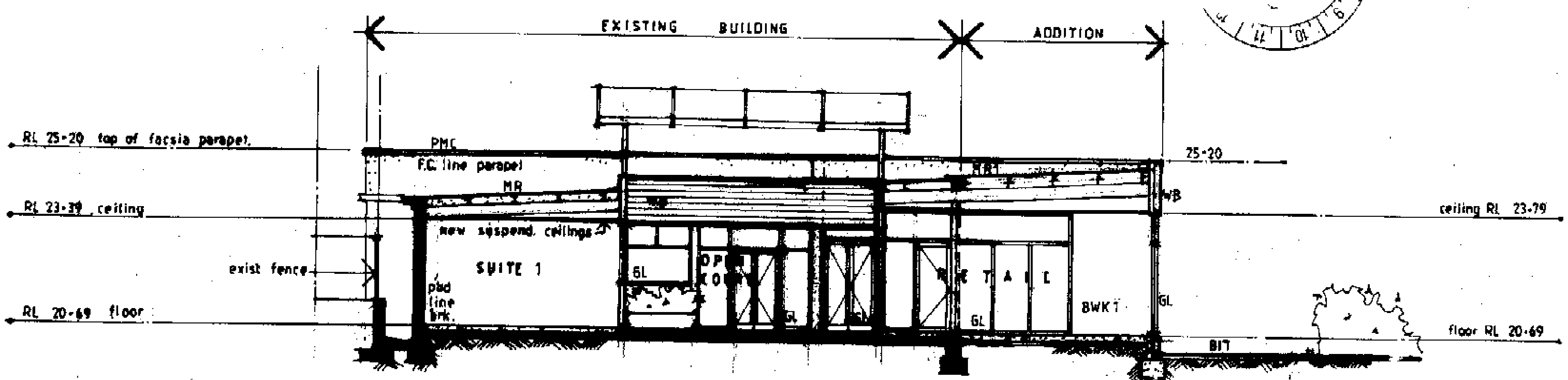

1:100 SECTION THROUGH A—A

LEGEND

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DESIGN PRACTICE

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ALTERATIONS & ADDITIONS
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MONA VALE
FOR
DR M COOKE

DRAWING TITLE
ELEVATIONS AND SECTION

STEVE WATSON & PARTNERS
03/215/01
Construction Certificate
Steve Watson IE Aust #2030801

13 JUN 2003

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GENERAL

G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH SPECIFICATIONS AND OTHER CONSULTANTS DRAWINGS.
G2. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
G3. DO NOT SCALE DRAWINGS.
G4. ALL WORKMANSHIP, TESTING, MATERIALS AND SUPERVISION ARE TO BE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE OCCUPATIONAL HEALTH AND SAFETY ACT 1983 ENFORCED BY THE WORKCOVER AUTHORITY AND CURRENT RELEVANT AUSTRALIAN STANDARDS.
G5. PROPRIETARY ITEMS SPECIFIED SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT VARY SPECIFIED PROPRIETARY PRODUCTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
G6. UNLESS OTHERWISE SPECIFIED FOR SPECIFIC INSTANCES IN THE DESIGN DRAWINGS, THE ARRANGEMENT, DESIGN AND INSTALLATION OF TEMPORARY WORKS REMAINS THE RESPONSIBILITY OF THE CONTRACTOR. (THE CONSULTING ENGINEER HAS DESIGNED THE PERMANENT STRUCTURE).
G7. TEMPORARY BRACING AND SUPPORT OF STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MAINTAINED DURING ALL STAGES OF CONSTRUCTION.
G8. NOTES ON ANY DRAWING APPLY TO ALL DRAWINGS IN THE SET U.N.O.
G9. ALL ARCHITECTURAL FITMENTS SUCH AS GLAZING, PARTITIONS, CEILINGS ETC. SHOULD ALLOW FOR THE SHORT AND LONG TERM MOVEMENT OF STRUCTURAL ELEMENTS. FOR BEAMS AND SLABS SPANNING LESS THAN 8m AN ALLOWANCE OF AT LEAST 20mm SHOULD BE MADE (CONSULT SPEC. OR ENGINEER WHERE SPANS EXCEED 8m).
G10. DESIGN CRITERIA:

* WIND LIVE LOADS:
  - BASIC WIND SPEED Vu (MAX) = 41
  - STRUCTURE IMPORTANCE MULTIPLIER = 1
  - TERRAIN CATEGORY = 3
  - INTERNAL PRESSURE COEFFICIENT = 0.3
  - ROOF LIVE LOADS = 0.25kPa
* FLOOR LIVE LOADS = 1.5kPa
  - STAIRS AND WALKWAYS = 2kPa
  - COMMUNAL AND STORAGE AREAS = 1.5kPa
  - FRAMED WALKWAYS/EXTERIOR WAYS = 2kPa
  - FREE STANDING WALLS = 2kN AT TOP
* EARTHQUAKE LOADS:
  - STRUCTURE CLASSIFICATION = GENERAL
  - STRUCTURE TYPE = 2
  - ACCELERATION COEFFICIENTS (a) = 0.08
  - SITE FACTOR (S) = 1
  - IMPORTANCE FACTOR (I) = 1
  - DESIGN CATEGORY = B
  - DUCTILITY = DUCTILE
  - CONFIGURATION = REGULAR

- SAFETY AND METHOD OF CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY ELEMENT OF THE PROJECT, WHICH POSES AN UNACCEPTABLE LEVEL OF RISK TO CONSTRUCT, SHALL BE REFERRED TO THE ENGINEER TO MODIFY THE DESIGN.

G11. THE BUILDER SHALL PROVIDE CERTIFICATION OF ANY DESIGN AND CONSTRUCT COMPONENT BY A CHARTERED (NPER) ENGINEER.
G12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL SERVICES IN THE VICINITY OF THE WORKS. ANY SERVICES SHOWN ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES PRIOR TO COMMENCING AND SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO SERVICES, AS WELL AS ANY LOSS INCURRED AS A RESULT OF THE DAMAGE TO ANY SERVICE.

CONCRETE

C1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600 AND NATSPEC CONCRETE STANDARDS.
C2. CONCRETE PROPERTIES:

ELEMENT	STRENGTH GRADE
- STRIP FOOTINGS AND PAD FOOTINGS	N25MPa
- EXTERNAL SLABS ON GROUND	~~N40MPa~~ N25
- INTERNAL SLABS ON GROUND	N25MPa

B

MAXIMUM AGGREGATE SIZE = 20mm U.N.O.
SLUMP = 75mm
C3. CONCRETE PROPERTIES FOR SLABS AND BEAMS SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS:
- MINIMUM CEMENT CONTENT 250kg/m3
- MAXIMUM 56 DAY SHRINKAGE STRAIN = AS NOMINATED ABOVE

C4. CONSOLIDATE BY VIBRATION
C5. CONSTRUCTION JOINTS NOT SHOWN REQUIRE WRITTEN APPROVAL FROM THE ENGINEER.
C6. SUBMIT FOR APPROVAL THE FOLLOWING TO THE ENGINEER:
- CURING PROCEDURE (PVA MEMBRANES NOT PERMITTED)
- STRIPPING PROCEDURE
- DETAILS AND LOCATION OF CAST IN SERVICES
- CONDUITS, PENETRATIONS AND CONSTRUCTION JOINT LOCATIONS

C7. FOR TENDER PURPOSES ASSUME MINIMUM STRIPPING TIMES AND EXTENT OF BACK PROPPING AS PER AS 3610-1995 SECTION 5.0
C8. ALL REINFORCEMENT LAPS AS PER SECTION 13, AS3600.
C9. HOLD DOWN BOLTS SHALL BE HOT DIPPED GALVANISED.
C10. U.N.O. ALL MASONRY ANCHORS INTO CONCRETE SHALL BE RAMSET TRUEBOLTS (LONGEST VERSION) OR APPROVED EQUIVALENT. BOLTS SHALL BE GRADE 316 STAINLESS STEEL WHERE THEY ARE EXPOSED TO THE WEATHER AND ADJOINING NON FERROUS OR PREPAINTED MEMBERS.
C11. U.N.O. CLEAR CONCRETE COVERS SHALL BE:

ENVIRONMENT	COVER
- SURFACES OF MEMBERS CAST AGAINST, AND IN CONTACT WITH THE GROUND	50mm
- SURFACES OF MEMBERS CAST AGAINST, AND IN CONTACT WITH THE GROUND SEPARATED BY MEMBRANE	30mm
- SURFACES OF MEMBERS IN INTERIOR ENVIRONMENTS	20mm

C12. ENSURE ADEQUATE COVER FOR MESH CROSS-ROD AT EDGE OF CONCRETE
C13. ALL PENETRATIONS TO HAVE 2/N12 TRIMMER BARS TOP AND BOTTOM TO EACH FACE U.N.O. EXTEND TRIMMERS 700 BEYOND PENETRATION
C14. SETDOWNS OR FALLS IN FLOOR SURFACES ARE NOT PERMITTED UNLESS SHOWN ON DRAWINGS.
C15. FORMWORK:

ELEMENT	FORMWORK CLASS (AS3600)
- INGROUND FOOTINGS	5
- RETAINING WALLLS	5 EARTH FACE
- RETAINING WALLS	3 EXPOSED FACE
- BEAMS AND SLABS	2
- STAIRS	2

C16. PROVIDE UPWARD CAMBER TO FORMWORK OF REINFORCED CONCRETE CANTILEVERS OF 5mm PER 1000 PROJECTION BEYOND COLUMN OR WALL FACE
C17. SURFACE FINISHES:

- COLUMNS AND WALLS	OFF FORM
- FLOOR SLABS (UNO)	MACHINE FLOAT
- SLABS TO BE TILED	WOOD FLOAT
- STAIRS	STEEL TROWEL

C18. REINFORCEMENT SYMBOLS:
S = STRUCTURAL GRADE PLAIN ROUND BAR TO AS1302 (250MPa)
N = HOT ROLLED DEFORMED BAR TO AS/NZS 4671 (500MPa)
SL = LOW DUCTILITY SQUARE MESH (500 MPa)
RL = LOW DUCTILITY RECTANGULAR MESH (500 MPa)
L = LOW DUCTILITY TRENCH MESH (500 MPa)
THE NUMBER FOLLOWING THE SYMBOL IS THE NOMINAL BAR DIAMETER IN MILLIMETRES
CLASS L REINFORCEMENT SHALL NOT BE USED U.N.O.

CONCRETE MASONRY

EXPOSURE CLASSIFICATION: SEVERE MARINE (<1km FROM COAST)
CM1. MASONRY CONSTRUCTION IS TO CONFORM TO AS3700.
- MORTAR CLASSIFICATION = M4
- DURABILITY GRADE OF MASONRY UNITS = EXPOSURE

B

CM2. THE CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE 12 MPa OR GREATER.
CM3. BED UNITS IN FRESHLY PREPARED MORTAR, UNIFORMLY MIXED CEMENT, LIME AND SAND IN THE RATIO OF 1:0:3 OR 1:0.5:3.5, CONFORMING TO AS 3700.
CM4. GROUT:
- COMPRESSIVE STRENGTH = N15MPa
- MAXIMUM AGGREGATE SIZE = 10mm
- SLUMP = 225mm

CM5. CONTROL JOINTS IN UNREINFORCED WALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE BCA. BUT GENERALLY AT 5m CENTRES GENERALLY AND 2.5m FROM CORNERS. U.N.O. REINFORCEMENT IN ACCORDANCE WITH AS1302.
CM6. THE BOTTOM COURSE OF ALL REINFORCED BLOCKWORK SHALL CONSISTS OF E-SHAPED BLOCKS TO ENABLE CLEANOUT AND TYING OF STEEL.
- FULLY BED FACE SHELLS ONLY.
- CLEAN OUT ALL CORES AFTER EACH DAY'S LAYING.
- ENSURE STARTER BARS ARE CORRECTLY LOCATED IN FOOTINGS.
- ALL MASONRY ANCHORS INTO CONCRETE MASONRY SHALL BE HILTI HIT ANCHOR OR APPROVED EQUIVALENT AND SHALL BE ~~GRADE 316 STAINLESS STEEL~~ FOR EXTERNAL USE.

CM7. MASONRY TIES SHALL BE ~~GRADE 316 STAINLESS STEEL~~ AND MEDIUM DUTY CLASSIFICATION UNO. FACE FIXED TIES SHALL BE FIXED USING A SCREW FIXING AND SHALL NOT BE NAILED.

Replace with Hot Dip Galvanised B

CM8. THE TOP COURSE OF ALL FREESTANDING HOLLOW BLOCK MASONRY SHALL CONSIST OF SOLID CAPPING BLOCKS.
CM9. PROVIDE SLIDING HORIZONTAL TIES ACROSS JOINTS IN WALLS EQUIVALENT TO BRUNSWICK MFA-3 AT 400 CTS VERTICALLY IN EACH FACE OF THE BLOCKS.
CM10. NON-LOADBEARING WALLS SHALL FINISH 20mm SHORT OF SLAB SOFFIT AND SHALL BE FASTENED TO THE SOFFIT USING MFA - 4 SLIDING TIES AT 400mm CENTRES U.N.O.
CM11. LOADBEARING HOLLOW BLOCK WALLS SHALL BE CAPPED WITH 6mm COMPRESSED FIBRE CEMENT SHEET AND ONE LAYER OF ALCOR. CORE FILLED LOAD BEARING WALLS TO BE STEEL TROWELLED LEVEL WITH TWO LAYERS OF ALCOR OVER.
CM12. WHERE MASONRY ADJOINS STRUCTURAL STEEL OR PASSES A RETURN WALL ON THE INNER SKIN, INSTALL MEDIUM DUTY TIES AT 300 MAX. CTS. SCREW FIX TIES TO STEELWORK.
CM13. ALL STEEL LINTELS SUPPORTING BLOCKWORK ARE TO BE ~~GRADE 316 STAINLESS STEEL~~ Hot Dipped Galvanized
CM14. MINIMUM COVER TO REINFORCEMENT, FROM THE INSIDE FACE OF THE FACE SHELL, IS TO BE 30mm MINIMUM.
CM15. NO AIR ENTRAINING AGENTS (BYCOL, ETC) ARE TO BE USED WITHOUT PRIOR WRITTEN PERMISSION FROM NORTHROP ENGINEERS.

B

EARTHWORKS UNDER GROUND SLAB

E1. REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND FILL BENEATH BUILDING PLATFORM. ALSO EXCAVATE TO THIS DEPTH FOR A DISTANCE OF D + 0.5M AROUND PERIMETER OF BUILDING, WHERE D IS THE DEPTH OF EXCAVATION.
E2. IMPORTED FILL PROPERTIES:
- PASSING 50mm SIEVE: 100%
- PASSING 75 MICRON SIEVE: LESS THAN 25%
- PLASTICITY INDEX: LESS THAN 15%, MORE THAN 2%

E3. PLACE FILL IN LAYERS NOT EXCEEDING 200mm LOOSE. COMPACT TO 95% MODIFIED MAX DRY DENSITY (MMDD) BY TEST 5.2.1 AND 5.3.1 IN AS1289.
E4. IF SUBGRADE OR FILL IS TOO WET TO ACHIEVE COMPACTION, SCARIFY AND WORK MATERIAL UNTIL IT HAS DRIED.
E5. ALLOW FOR AT LEAST [INSERT NUMBER] SUCCESSFUL COMPACTION TESTS PER LAYER. ALLOW FOR ONE ADDITIONAL TEST PER [INSERT NUMBER]cu.m OF FILL WHERE PLACED VOLUME EXCEEDS [INSERT NUMBER]cu.m. TESTING TO BE UNDERTAKEN BY NATA REGISTERED LABORATORY.
E6. "WE SUPPORT THE USE OF RECYCLED CONCRETE OR BRICK IN LIEU OF CRUSHED ROCK IN APPROPRIATE CIRCUMSTANCES.

STEELWORK

S1. FABRICATE AND ERECT STRUCTURAL STEELWORK IN ACCORDANCE WITH AS4100.
S2. PROVIDE HOLES, CLEATS AND FIXING FOR TIMBER FRAMING, FINISHES, ETC. SHOWN ON ARCHITECTURAL DRAWINGS.
S3. FABRICATOR SHALL PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE BUILDER FOR HIS APPROVAL. BUILDER SHALL LODGE TWO COPIES OF APPROVED DRAWINGS TO NORTHROP ENGINEERS PTY LTD FOR APPROVAL PRIOR TO FABRICATION.
S4. UNLESS NOTED OTHERWISE, USE:
- 10mm GUSSET, FIN AND END PLATES.
- M20 8.8/S BOLTS.
- 6mm CONTINUOUS FILLET WELDS MADE WITH E4818 MILD STEEL ELECTRODES.
- ALL WELDS SP CATEGORY

S5. NO PAINT ON MATING SURFACES WITH TF OR TB BOLTING UNLESS APPROVED BY ENGINEER.
S6. BOLTS TO BE INSTALLED WITH ONE HARDENED WASHER UNDER THE TURNED PART.
S7. TF AND TB BOLTING BY "PART TURN" METHOD WITH LOAD INDICATING WASHERS.
S8. ALL BOLTS, SCREWS, HOLD DOWN BOLTS, MASONRY ANCHORS SHALL BE HOT DIP GALVANISED TO AS1214.
S9. HOT ROLLED SECTIONS:
- MINIMUM YIELD STRESS 250MPa GENERALLY AND 350MPa FOR RHS AND SHS.

S10. COLD FORMED SECTIONS TO CONFORM WITH:
- AS/NZS4600, AS1397, AS1594 AND AS1595.
- MINIMUM YIELD STRESSES:
- PURLINS AND GIRTS 450MPa, OTHER SECTIONS 250MPa.
- SURFACE TREATMENT - HOT DIPPED ZINC COATING, AT LEAST 600g/sqm U.N.O.
- LAPS, BRIDGING, BRACKETS AND PURLIN BOLTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

S11. SURFACE TREATMENT UNLESS NOTED OTHERWISE:
- PROTECTED FROM WEATHER - CLASS 2.5 BLAST CLEAN. WITH 70 MICRONS OF INORGANIC ZINC SILICATE MP1-A IN AS/NZS 2312 COLOUR BLUE.
- EXPOSED TO WEATHER - LP1, LP2, LP3, LP4, LP5, LP6, OR GZLP TO AS/NZS 2312. CONTRACTOR TO PROVIDE DETAILS OF THE SELECTED PAINT SYSTEM.
- BUILT INTO AN EXTERNAL MASONRY WALL - GALVANISE AFTER FABRICATION TO AS/NZS4680:1999.

S12. UNLESS OTHERWISE DETAILED FABRICATOR SHALL PROVIDE C10015 TRIMMER PURLINS ALONG WITH GENERAL PURPOSE BRACKETS TO SUPPORT EDGE OF ROOF SHEETING AT ALL HIPS, VALLEYS AND PENETRATIONS.
S13. SITE WELDED SHEAR STUDS SHALL HAVE WELDS WIRE BRUSHED FOR VISUAL INSPECTION AND SHALL BE INSPECTED BY A QUALIFIED WELDING INSPECTOR BEFORE ANY SLAB REINFORCEMENT IS PLACED.
S14. FIX CROSS BRACING TO PURLINS AT 3000 MAXIMUM CTS WITH M12 BOLTS OR M6 HOOKS.
S15. ALL BURIED STEELWORK TO BE ENCASED IN CONCRETE WITH A MINIMUM COVER OF 50mm TO STEELWORK.
S16. BOLT SYMBOLS:
- 8.8/S - SNUG FIT
- 8.8/TF - FULLY TENSIONED FRICTION TYPE (USE LOAD INDICATOR WASHERS)
- 8.8/TB - FULLY TENSIONED BEARING TYPE (USE LOAD INDICATOR WASHERS)

S17. HIGH STRENGTH BOLTS (8.8) ARE NOT TO BE WELDED.

FOR CONSTRUCTION

Registered Professional Engineer 388033
Mr Jamie Shelton
MIEAust CPEng
NPER
16.6.03

RECEIVED
16 JUN 2003
NORTHROP ENG.
Job No.

0 1000 2000 3000 4000 5000
PLAN

DRAWN Brad GIBSON DESIGNED Jamie SHELTON VERIFIED ... APPROVED ...

ISSUE	AMENDMENT	DATE	DRAWN
A	FOR CONSTRUCTION	23.05.03	B.G.
B	AS CLOUDED	2-6-03	JS

CLIENT
DR M. COOKE

ARCHITECT
MARK HURCUM DESIGN PRACTICE ARCHITECTS

GRAFTON BOND STORE
Level 2
201 Kent Street
Sydney, NSW 2000
Telephone : (02) 9241 4188
Facsimile : (02) 9241 4324
P.O. Box H171
Australia Square 1215
Email: sydney@northrop.com.au
Sydney - Wollongong - Newcastle - Canberra
ABN 82 064 775 088

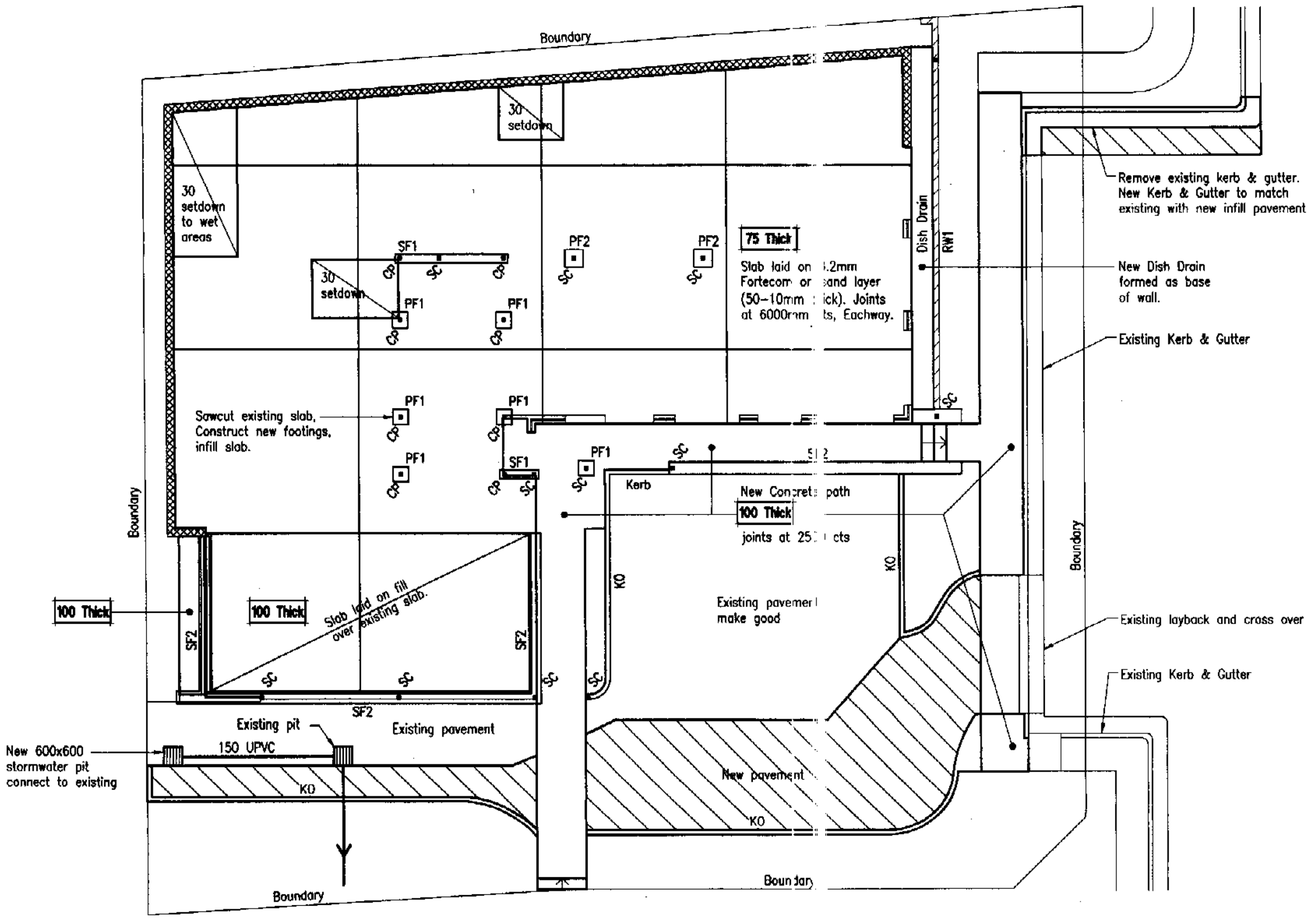
NORTHROP
STRUCTURAL & CIVIL ENGINEERS

PROJECT
Alterations & Additions to 127-129 BARRENJOEY RD MONA VALE

DRAWING TITLE
GENERAL NOTES

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING ANY WORK.

JOB NUMBER 01597
DRAWING NUMBER S00 REV B
NUMBER IN SET : 1 OF 3



GROUND FLOOR SLAB AND FOUNDATION PLAN

LEGEND

100 Thick — Indicates Slab Thickness, SL72 Fabric, 30 top cover.

Indicates Existing Masonry.

MEMBER SCHEDULE

MARK	SIZE	COMMENTS
PAD FOOTINGS		
PF1	500 x 500 x 300 deep	
PF2	600 x 600 x 300 deep	
STRIP FOOTINGS		
SF1	300 wide x 300 deep	3-8TM top & bottom
SF2	400 wide x 300 deep	4-11TM top & bottom
COLUMNS		
SC/CP	90 x 90 x 6 SHS	
RETAINING WALL		
RW1	190 Thick	Core filled, and Reinforced. N16-400
RETAINING WALL BASE		
RW1	1100 x 250 base	Reinforced concrete
KERBS		
KO	150 wide x 300 deep	Mass concrete Kerb only
K&G	To match existing	Mass concrete Kerb & Gutter

EXTERNAL PAVEMENTS:
New Pavement;
Remove top soil/existing slab.
150 compacted base course (FCR).
25mm of AC10

Existing Pavement to be made good;
10mm Polymer modified S.A.M.I. membrane.
Compacted base course (FCR).
25mm of AC10

13 JUN 2003

Registered Professional Engineer 389033
Mr Jamie Shelton
MIEAust CPEng
Signature
Registered on the NPER in the Category of Structural
Australian Professional Engineers Register

RECEIVED
16 JUN 2003
NORTHROP
Job No.

0 1000 2000 3000 4000 5000
PLAN

FOR CONSTRUCTION

APPROVED
VERIFIED
DESIGNED Jamie SHELTON
DRAWN Brad GIBSON

ISSUE	AMENDMENT	DATE	DRAWN
A	FOR CONSTRUCTION	23.05.03	B.G.

CLIENT: DR M. COOKE

ARCHITECT: MARK HURCUM DESIGN PRACTICE ARCHITECTS

GRAFTON BOND STORE
Level 2
201 Kent Street
Sydney, NSW 2000
Telephone : (02) 9241 4188
Facsimile : (02) 9241 4324
P.O. Box H171
Australia Square 1215
Email: sydney@northrop.com.au
Sydney - Wollongong - Newcastle - Canberra
ABN 82 054 775 088

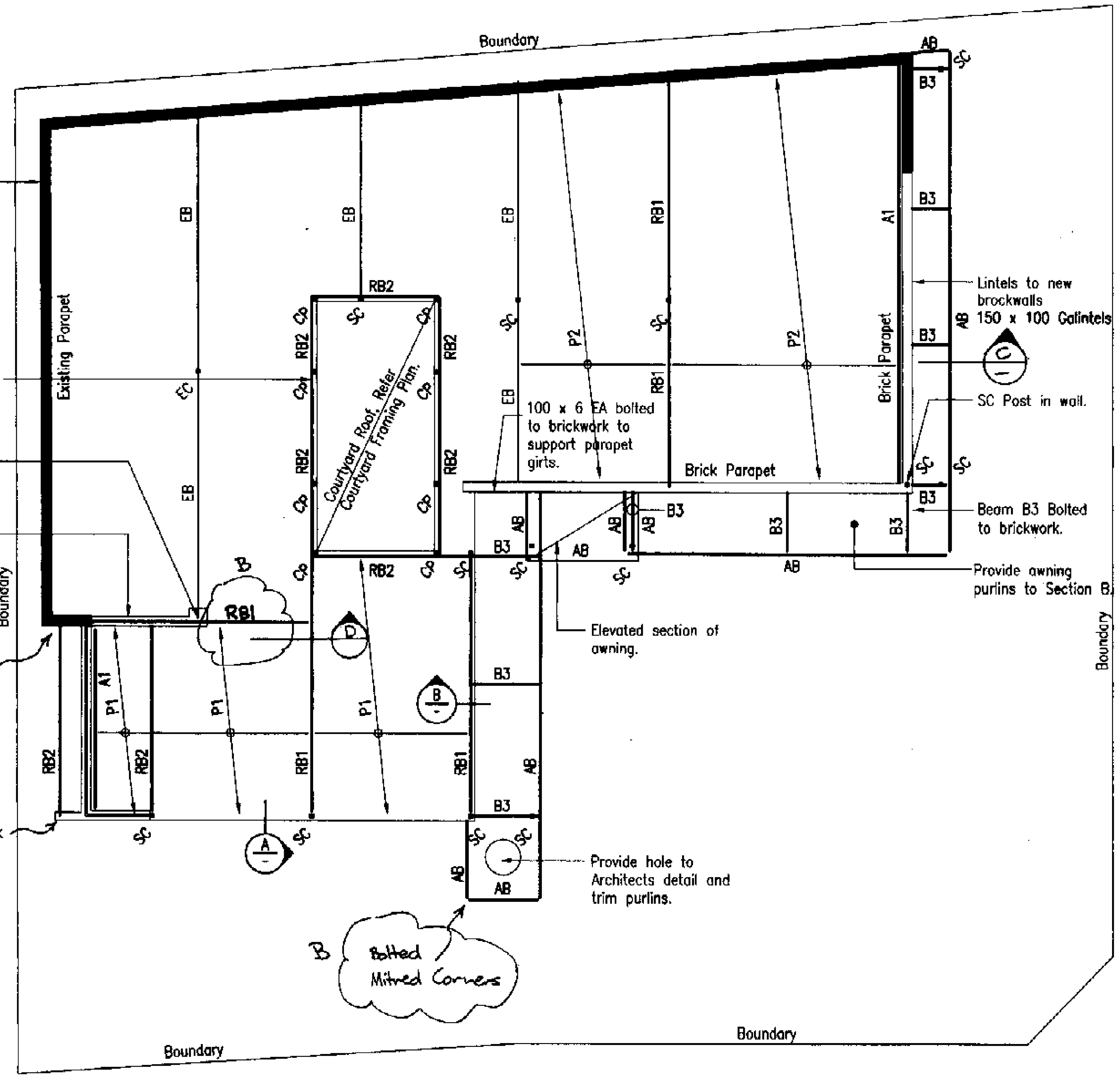
NORTHROP
STRUCTURAL & CIVIL ENGINEERS

PROJECT: Alterations & Additions to 127-129 BARRENJOEY RD MONA VALE

DRAWING TITLE: GROUND FLOOR SLAB, FOUNDATION & EXTERNAL WORK PLAN

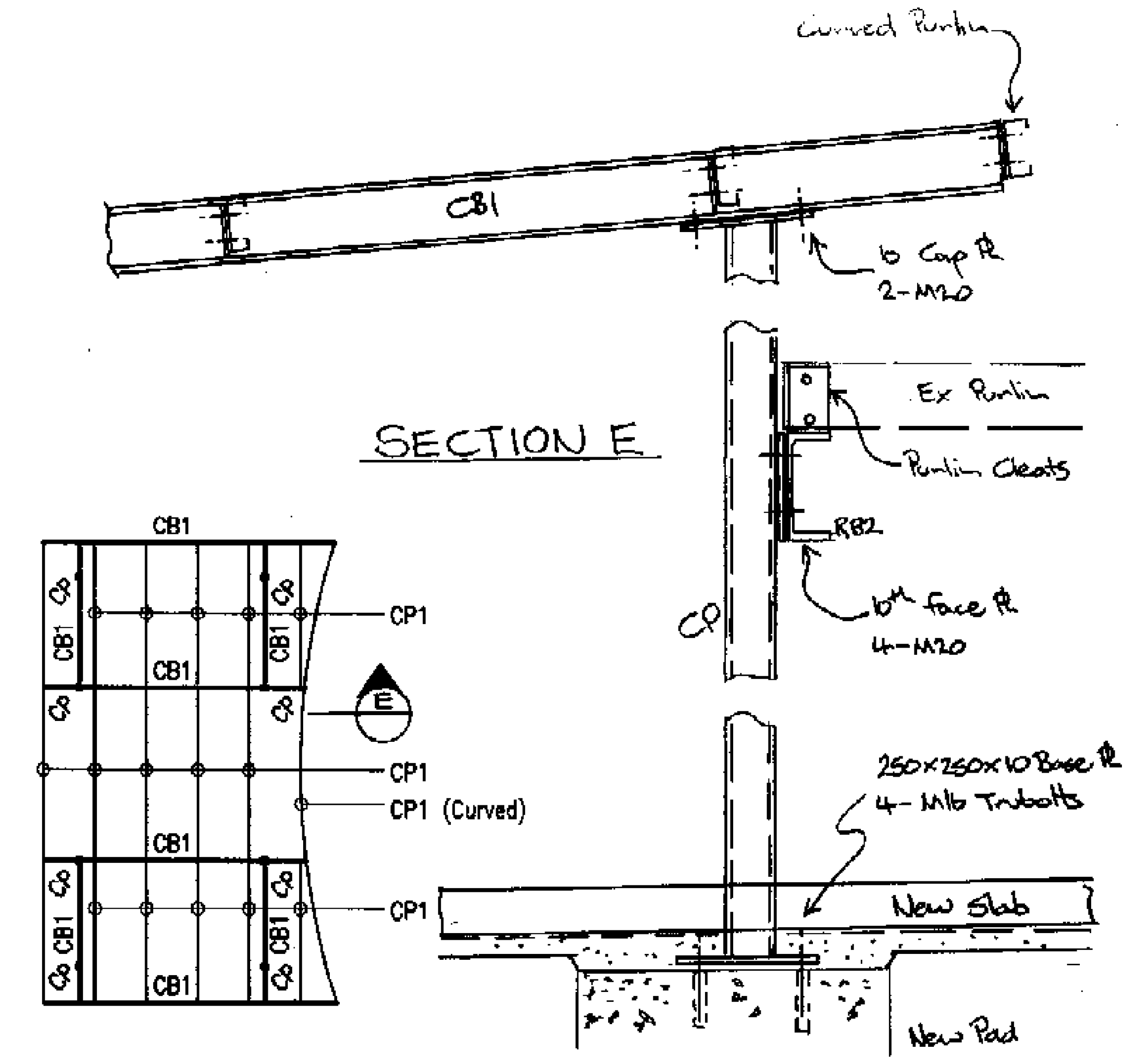
ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING ANY WORK.

JOB NUMBER: 01597
DRAWING NUMBER: S01 A REV
NUMBER IN SET : 2 OF 3



ROOF FRAMING PLAN

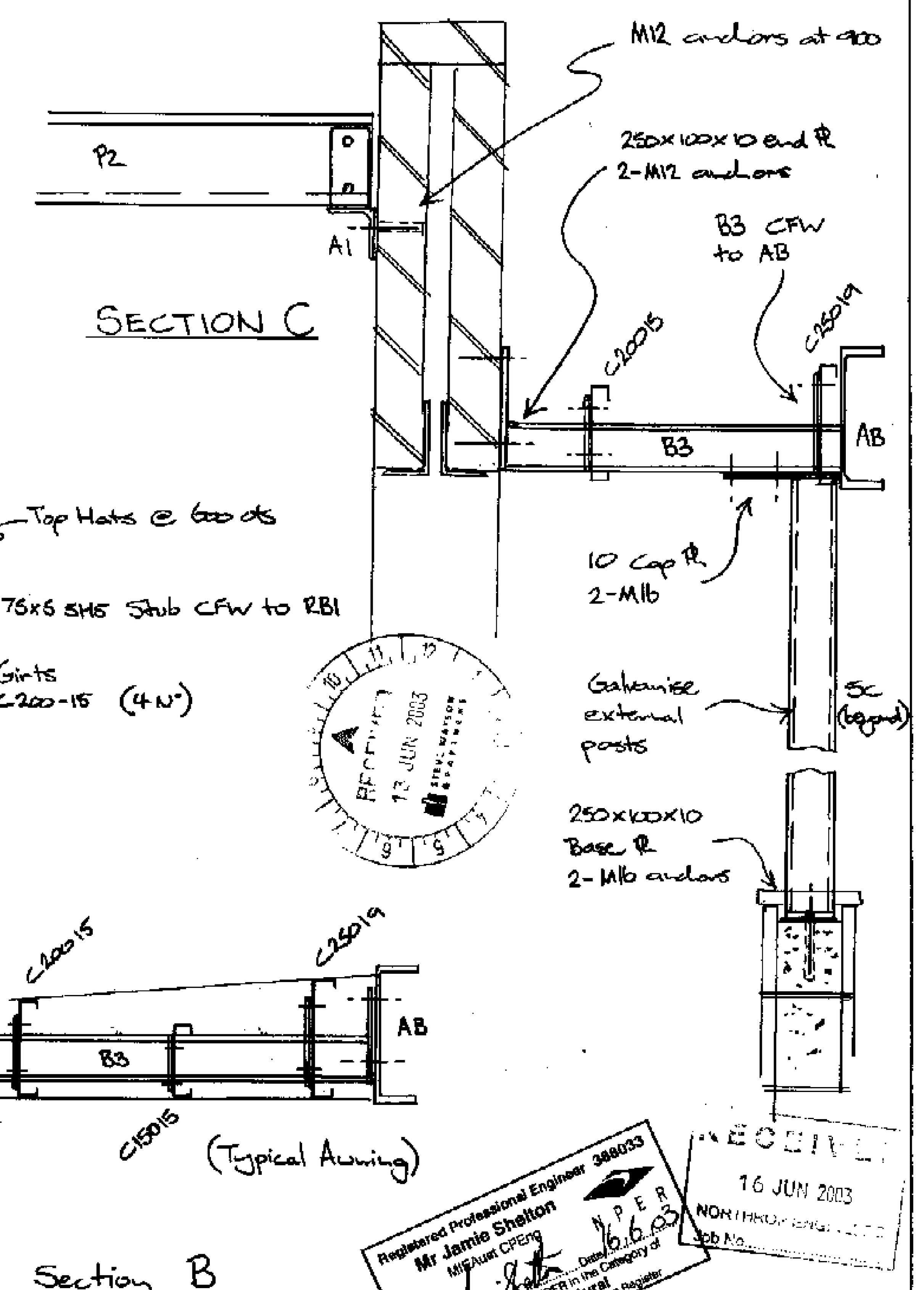
Refer to sections for parapet framing

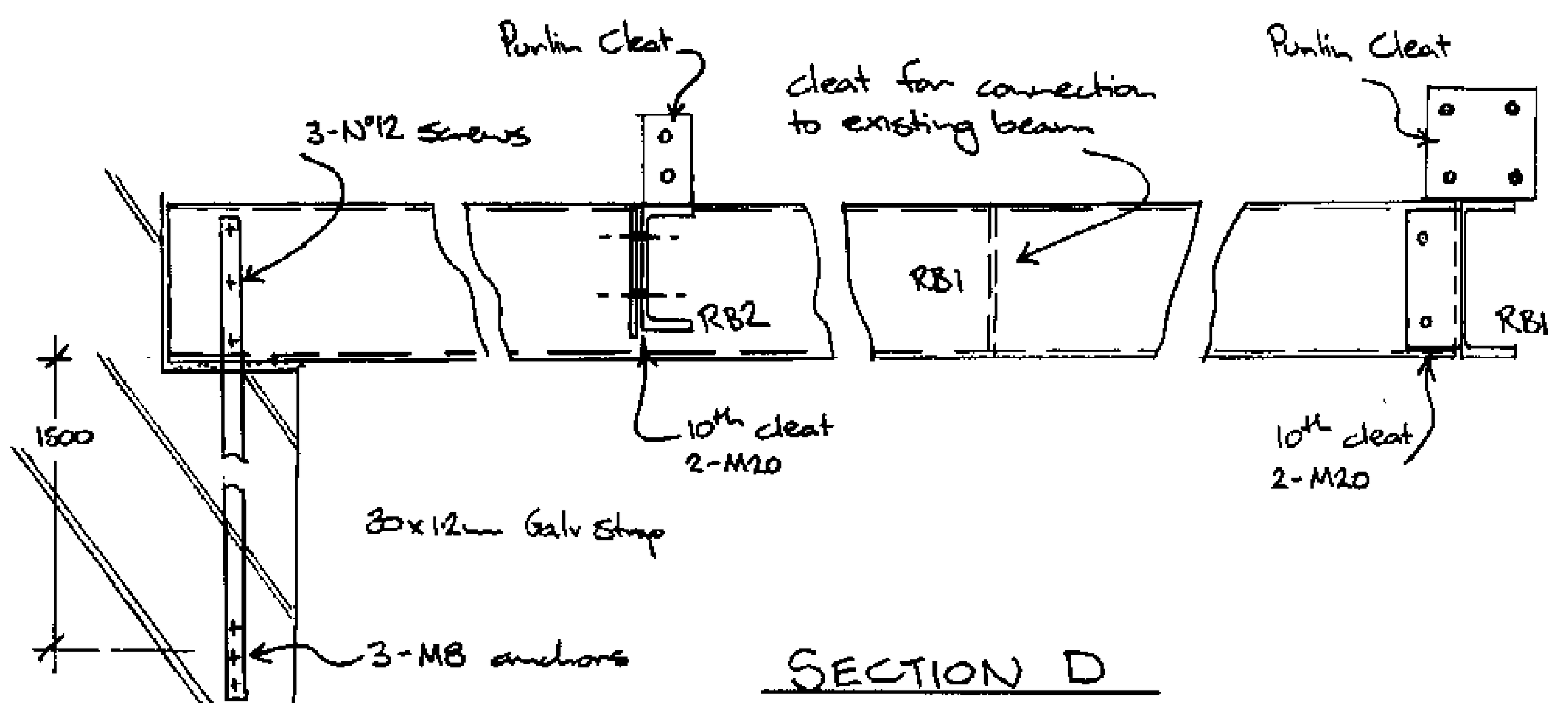


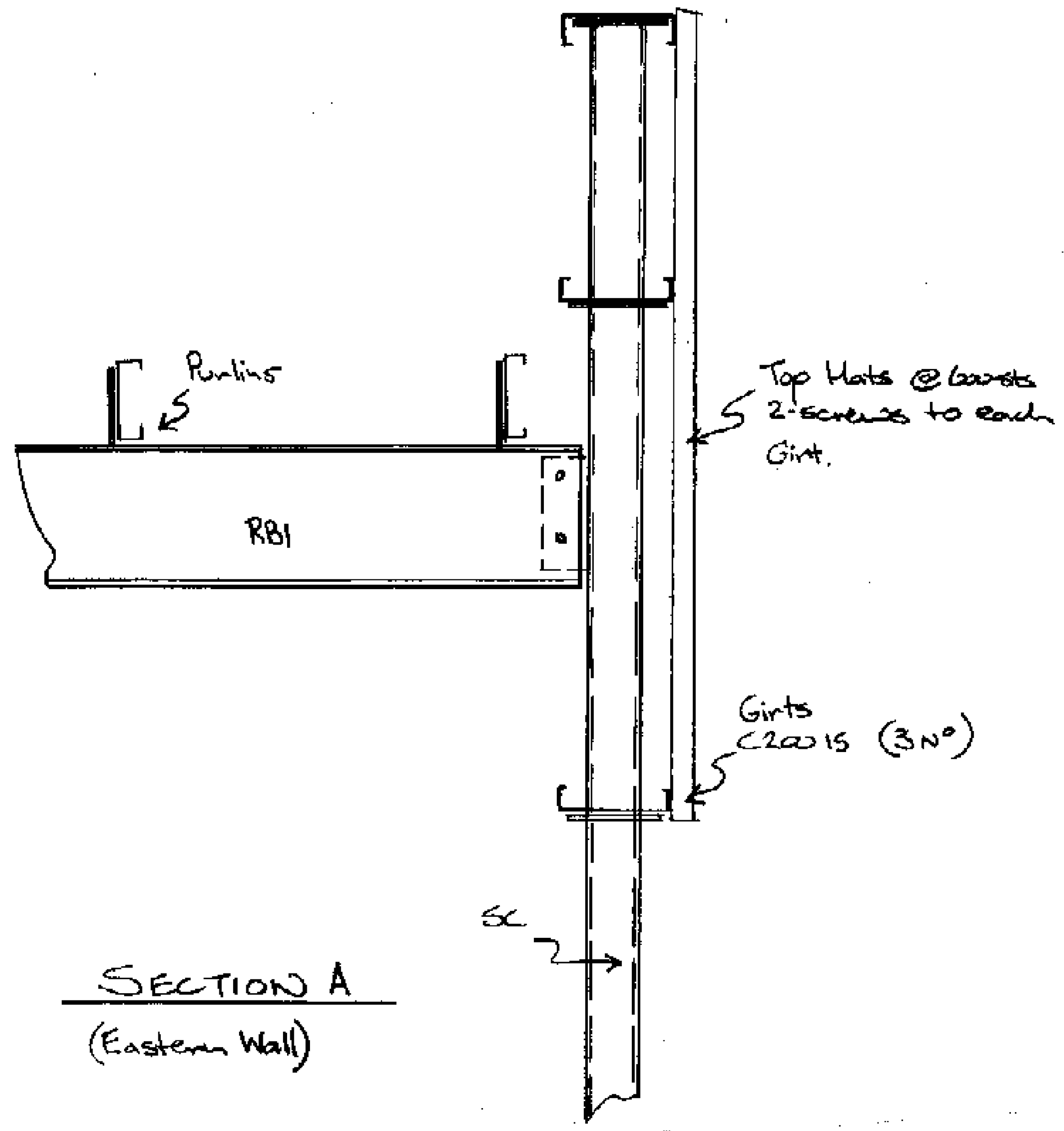
COURTYARD FRAMING PLAN

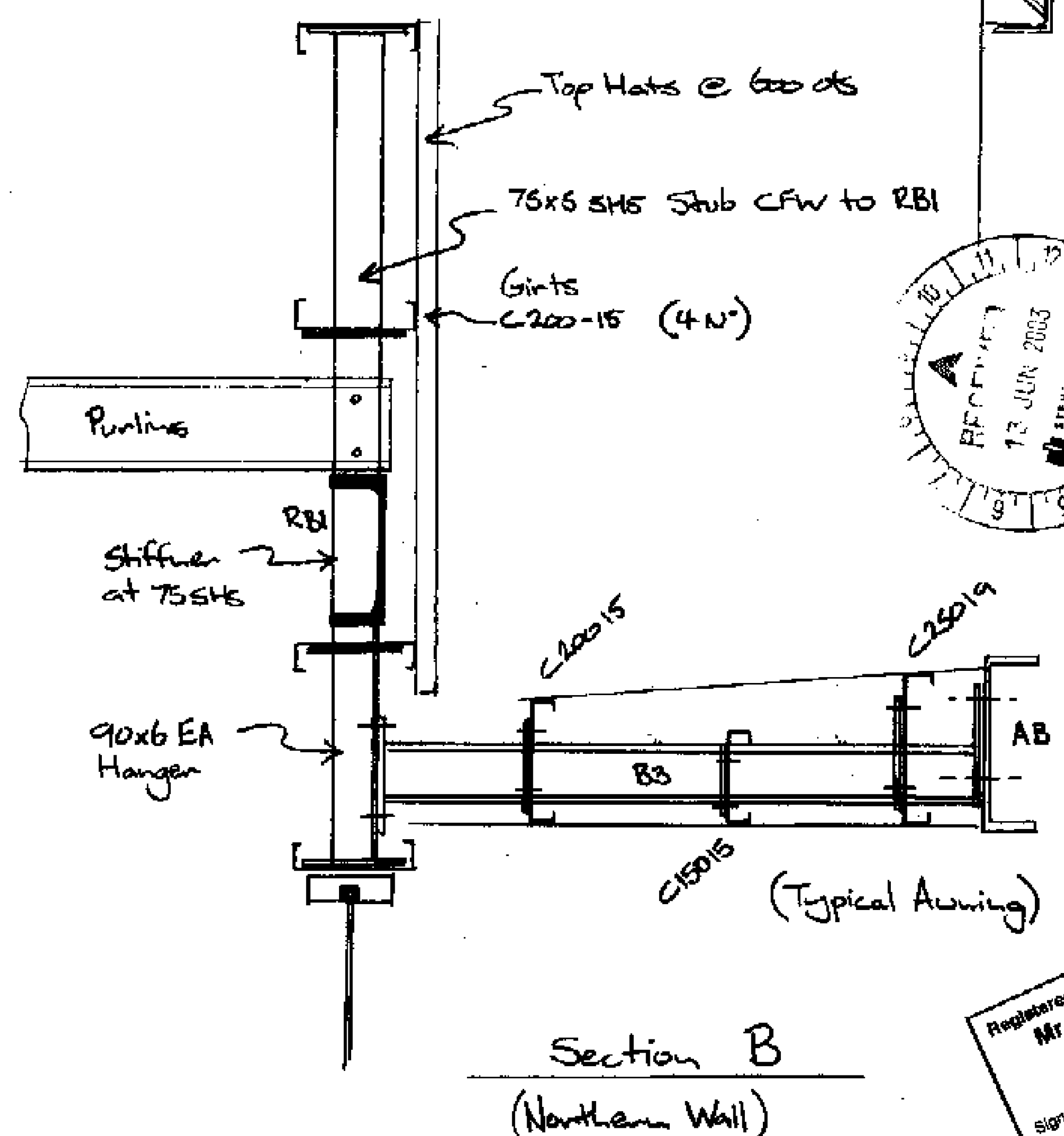
MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
COLUMNS		
SC	90 x 90 x 6 SHS	
ROOF BEAMS		
RB1	250 PFC	
RB2	200 PFC	
BEAMS		
B3	100 PFC	
B4	100 PFC	
AWNING BEAMS		
AB	300 PFC	
ANGLE		
A1	100 x 100 x 6 SHS	Bolted to Brickwork
PURLINS		
P1	C150 15	at 900mm cts.
P2	C200 15	at 900mm cts.
EC	Existing Column	
EB	Existing Beam	
COURTYARD POST		
CP	90 x 90 x 6 SHS	
COURTYARD BEAM		
CB1	125 PFC	
COURTYARD PURLIN		
CP1	C100 12	

FOR CONSTRUCTION









0 1000 2000 3000 4000 5000
PLAN

DRAWN Brad GIBSON DESIGNED Jamie SHELTON VERIFIED ...... APPROVED ......

ISSUE	AMENDMENT	DATE	DRAWN
A	FOR CONSTRUCTION	23.05.03	B.G.
B	AS CLOUDED, SECTIONS ADDED	2-06-03	JS

CLIENT
DR M. COOKE

ARCHITECT
MARK HURCUM DESIGN PRACTICE ARCHITECTS

GRAFTON BOND STORE
Level 2
201 Kent Street
Sydney. NSW 2000
Telephone : (02) 9241 4188
Facsimile : (02) 9241 4324
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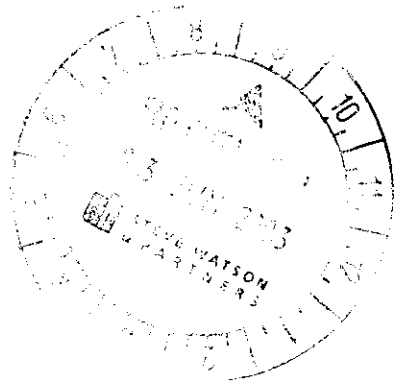
NORTHROP
STRUCTURAL & CIVIL ENGINEERS

PROJECT
Alterations & Additions to 127-129 BARRENJOEY RD MONA VALE

DRAWING TITLE
ROOF FRAMING PLAN

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING ANY WORK.

JOB NUMBER 01597
DRAWING NUMBER S02 REV B
NUMBER IN SET : 2 OF 3



CONTRACT AND CONSTRUCTION SPECIFICATION

127 - 129 BARRENJOEY ROAD MONA VALE

For

DR M COOKE

Prepared by

MARK HURCUM DESIGN PRACTICE PTY LIMITED

JUNE 2003

SECTION NO.	NAME
SECTION 100	GENERAL CONDITIONS
SECTION 200	DEMOLITION
SECTION 300	SITE PREPARATION
SECTION 400	PLUMBER; SANITARY, COLD AND HOT WATER
SECTION 500	SEWERAGE AND DRAINAGE
SECTION 600	ASPHALTIC/BITUMINOUS CONCRETE PAVEMENT
SECTION 700	MASONRY
SECTION 800	CONCRETE
SECTION 900	ROOFING AND ROOF PLUMBING
SECTION 1000	METALWORK
SECTION 1100	CARPENTRY, FRAMING AND FIBRE CEMENT CLADDING
SECTION 1200	WINDOWS, DOORS AND GLAZING
SECTION 1300	PLASTERBOARD AND VILLABOARD
SECTION 1400	SUSPENDED CEILINGS
SECTION 1500	PAINTING
SECTION 1600	ELECTRICAL INSTALLATION
SECTION 1700	TILES
SECTION 1800	STRUCTURAL STEEL
SECTION 1900	MECHANICAL SERVICES
SECTION 2000	LANDSCAPING

SECTION 100 GENERAL CONDITIONS

101. Scope of Work

The works comprises of the erection and completion of alterations and additions and the part removal of the existing building and construction of building additions to the south east and north east corner of the building including new walkways, awnings, lightcourt, alterations and reconstruction of carparking areas and new concrete footpath and section of kerb and gutter to Waterview Street. The Scope of Work also includes landscaping services, fitments and fixtures all as shown on the drawings, specifications and schedules issued.

102. Definitions

In the specification the following words or phrases shall, except where there is something or some matter in the subject or context inconsistent therewith, have the meanings given to them as follows:

Owner	Dr M Cooke 139 Lagoon Street NARRABEEN NSW 2101 Telephone: 9997 8511 Facsimile: 9997 4402
Architect	Mark Hurcum Design Practice Pty Limited 271 Alfred Street North NORTH SYDNEY NSW 2060 Telephone: 9955 5608 Facsimile: 9955 5063
Structural Engineer	Northrop Holmes Consulting Engineers Level 2, 201 Kent Street SYDNEY NSW 2000 Telephone: 9241 4188 Facsimile: 9241 4324
Landscape Architect	Environ Design Shop 14/26 Megalong Street KATOOMBA NSW 2780 Telephone: (02) 4782 9944 Facsimile: (02) 4782 4640
Surveyor	Degotardi, Smith and Partners 11/19-23 Bridge Street PYMBLE NSW 2073 Telephone: 9440 1100 Facsimile: 9440 1055
Contractor	Carfax Enterprises Pty Ltd PO Box 88 KILLARA NSW 2071 Telephone: 9499 2203 Facsimile: 9498 1917

103. Nature of Contract

ABIC MW-1 2003 major works contract.

104. Interpretation of Drawings

Check all dimensions on site before proceeding with the work of the contract. Notify Architect of any omission or conflict in drawings and their relation to Specifications. 'Drawings and Specifications' where referred to refer to all drawings and specifications issued.

105. Indemnity of Owner

A. Indemnify, and keep indemnified the Owner for the full duration of the works against any claim, demand, action, suit or proceeding that may be brought or made against the Owner by any other person who has entered into a Contract with the Contractor to execute work associated with the Project.

B. Submit evidence of all such Insurance in respect of any loss, damage or expense incurred by that other person by reason of any act, default or neglect of the Contractor in the performance of his obligations under the contract or arising out of or as a consequence of any delay by the Contractor in executing or failing to complete work under the Contract and also from any costs and expenses that may be incurred by that other person in connection with such claim, demand, action, suit or proceeding.

C. Do not proceed with any work under the Contract until all evidence of Indemnities and Insurances required herein, is submitted in writing to the Architect.

106. By-Laws, Fees and Notices

A. All relevant documents have already been submitted by the Owner and fees paid for Development Consent.

B. Be responsible for the connection of all services, water, sewerage, drainage, electricity etc. Apply for all such permits, pay for all fees and charges levied by relevant bodies for such connections.

C. Comply with all applicable Local Authority By-laws.

107. Goods and Services Tax

Pay Goods and Services Tax on all items where such tax is applicable.

108. Site Control

A. Be responsible for all activities on the site including providing access for authorised persons and restricting access by unauthorised persons. Take all necessary precautions to secure the assets of the Owner.

B. Waste building materials and flammable liquids shall not be stored in the building.

C. Take all proper precautions to keep all poisons and other injurious substances in places secured against access by unauthorised persons.

D. Provide and maintain siltation control measures in accordance with Local Authorities requirements.

E. Maintain the site in accordance with the requirements of WorkCover.

F. Maintain the site in accordance with the requirements of Occupational Health and Safety requirement.

109. Compliance with Ordinances, etc.

Whenever any work or any type of plant or machinery, etc. is required either by the Specification or by the relevant Statutory Authority, provide full details of such work, plant, etc. to the relevant Statutory Authority and make such applications, etc. as may be required within two weeks of receipt of Letter of Acceptance.

110. Standards

Unless otherwise specified, materials and workmanship shall be in accordance with the relevant standards of the Standards Association of Australia.
The relevant standard shall be the current edition.

NOTE: It is the Contractor's responsibility to provide certification showing compliance with the Standards listed in the BCA assessment report - Appendix C 'Statutory Fire Safety Measures'.

111. Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

NOTE: It is the Contractor's responsibility to provide certification showing compliance with the BCA Clauses listed in the BCA assessment report - Appendix C 'Statutory Fire Safety Measures'.

112. Construction Progress Bar Graph

Within fourteen (14) calendar days after the date of contract signing, submit to the Architect a detailed chart of the plan of progress, in Bar Graph form. For each item of work provide graph showing planned progress with planned monthly quantities and with space or other provision for entering actual progress. If the Architect considers that this bar graph is not satisfactory, they may require the Contractor to provide an amended bar graph within seven (7) days of being requested to do so.

113. Site Amenities and Meetings

Arrange for site meetings to occur at regular intervals throughout the contract period. Provide on site toilet and amenities.

114. Temporary Fire Extinguishers

Maintain existing fully charged, and accessible fire extinguishers as are necessary for the care and safety of the Works.

115. Light, Power and Telephone/Facsimile

Provide temporary electric light, power supply and telephone/fax during construction and pay all charges connected therewith.

116. Water

Provide and maintain a temporary water supply sufficient for executing the work under the Contract. Disconnect and clear away same on completion and pay all costs and charges in connection therewith.
Maintain existing water supply to neighbouring properties, giving 24 hours notice to neighbouring occupants of any disruption.

117. Adjacent Premises

Ensure that the work is carried out without damage to and with a minimum of nuisance or annoyance to the occupants of adjacent premises.
The Contractor shall provide a Dilapidation Report if deemed necessary, including photographs of the adjoining premises recording the state of the buildings prior to commencement of works. The report is to be approved and signed by the adjacent owners.

118. General Attendance on Sub-Contractors

General attendance shall include taking delivery, assisting to unload, storing and protecting Sub-Contractor's materials and for allowing Sub-Contractors ample working space, free use of water, electricity (unless otherwise described), scaffolding, hoists and ordinary plant, etc., and messing and sanitary accommodation and for all cutting away, building in and protecting finished work and making good.

119. Precautions in Carrying Out Work Under the Contract

Unless otherwise specified in the Contract, observe, in the absence of any statutory requirement to the contrary, the relevant current Australian Standard published by Standards Australia relating to storage, transport, use of materials, explosives, fire precautions in arc or flame cutting flame heating and arc or gas welding operations, plant and equipment, work processes and safety precautions.

120. Interference into Existing Services

Notify the Authorities and the Architect of any connection, disconnection or interference with existing services.

121. Damaged Services

Where existing services at or adjacent to the site are in non-optimum condition, arrange for an inspection by the Architect and the Officer-in-charge of the area responsible for such service. At such meeting, record the condition and follow resolution of that meeting when issued in writing by the Architect.

122. Solid, Liquid and Gaseous Contaminants

A. Be responsible for the proper disposal of all solids, liquid and gaseous contaminants.

B. Gaseous contaminants shall be discharged in such a manner that they will be sufficiently diluted with fresh air that the toxicity will be reduced to an acceptable level.

C. Subject to statutory and local requirements, liquid contaminant may be diluted with water to a level of quality acceptable in the sewer system or contained in approved vessels for disposal at sites approved by the relevant Authority.

D. Dispose of solid contaminants by removal from the site to locations approved by the relevant Authority.

123. Disposal of Refuse

Refuse from construction operation (including food scraps and the like) shall be removed from the site at frequent intervals.

124. Dimensioning

Do NOT scale drawings.
Confirm all existing and proposed dimensions on site and inform the Architect of any discrepancy.

125. Shop Drawings

Shop Drawings mean complete drawings showing all details of fabrication, assembly, installation, fixing and waterproofing methods of specific items or components, and shall include all necessary explanatory notes and specification.

When preparing Shop Drawings, do the following:

A. Include provision in construction programme for the production and distribution of shop drawings noting review time.

B. Refer any discrepancies discovered in the Contract Documents to the Architect for direction.

C. Verify all relevant dimensions. Dimension drawings so that the items or components fit accurately into the required positions.

D. Ensure that shop drawings conform with the requirements of the Contract.

E. All drawings shall be of consistent standard size and presentation.

F. Submit two initial copies to the Architect for examination. If amendments are required, one copy will be marked and returned to the Contractor for amendments to the original shop drawings. (This process may be repeated until the Architect considers that the shop drawings are satisfactory.)

G. When the shop drawings are satisfactory, one copy will be stamped by the Architect. Supply two additional copies of the satisfactory shop drawings to the Architect. Provide also as required for the Contractor's site office, manufacturers or sub-contractors.

H. Acceptance of shop drawings shall imply only that the Contractor's interpretations of the relevant requirements of the Contract are generally correct, but shall in no way relieve the Contractor of his obligations under the Contract to construct and complete the Works correctly and accurately.

I. Do not order, manufacture, assemble or supply any item or component needed according to requirements of shop drawings until the Architect returns the applicable stamped drawings.

J. The Architect requires 10 working days for each review.

126. Delivery/Storage/Handling

Deliver, handle and store products in accordance with manufacturer's recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Control delivery schedules to minimise long-term storage of products at site and over-crowding of construction spaces. In particular, co-ordinate delivery and/or installation to ensure minimum holding or storage times for products recognised to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.

127. General Product Compliance

A. Provide products which comply with requirements, and which are undamaged and unused at time of installation, and which are complete with accessories, trim, finish, features required by regulation, and other devices and details needed for a complete installation and for intended use and effect.

B. Standard Products: Where available, provide standard products of types which have been produced and used previously and successfully on other Projects and in similar applications.

C. Continued Availability: Where additional amounts of a product, by its application, are likely to be needed by Owner at a later date for maintenance and repair or replacement work, provide a standard, domestically produced product which is likely to be available to Owner at such later date.

D. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

E. Substitution of products specified in these documents by similar products is to be approved by the Architect a minimum of 10 days prior to ordering.

128. Contractor's Quality Control

A. Inspect each item of materials or equipment immediately prior to installation and reject damaged or defective items.

B. Provide attachment and connection devices and methods for securing materials properly as they are installed, true to line and level, and within recognised industry tolerances unless otherwise indicated. Allow for expansion and building movements. Provide uniform joint widths in exposed Work, organised for best possible visual effect. Refer questionable visual effect choices to the Architect.

C. Re-check measurements and dimensions of the Work as an integral step before starting each installation.

D. Install Work during conditions of temperature, humidity, exposure and weather which will ensure the best possible results for each part of the Work, or component or treatment as necessary to prevent damage and deterioration.

E. Co-ordinate enclosure and closing-in of Work with required inspections and tests, so as to avoid necessity of uncovering Work for that purpose.

F. Limiting Exposures of Work: To extent possible, through control and protection methods, supervise performance of work in a manner which will ensure that none of the work whether completed or in progress, will be subjected to harmful, dangerous, or damaging exposures during construction period.

129. Openings and Penetrations

The Contractor shall provide openings and access for all trades and/or co-ordinate same.

130. Cleaning and Protection of Finished Work

General: During handling and installation of work as project proceeds, site clean and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where required to ensure freedom from damage or deterioration at a time of Practical Completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary throughout remainder of construction period. Adjust and lubricate operable components to ensure all equipment operates as intended.

131. Material/Colour Selections

A. For materials, textures and colours refer to Schedules. Items where colour is to be advised or not given are to be requested by the Contractor from the Architect prior to these items achieving critical path on the program.

B. Submit colour chips for all items having colour unless otherwise directed or approved by Architect.

132. Final Cleaning

Provide final cleaning of the work of this Specification consisting of cleaning each surface of unit of work to normal 'clean' condition expected for a first class building cleaning and maintenance programme.

Examples of required cleaning are:

A. Remove labels which are not required as permanent labels.

B. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials.

C. Clean exposed exterior and interior hard surfaced finished, to a dirt free condition, free of dust, stains, fingermarks, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.

D. Wipe clean surface of mechanical and electrical equipment, including excess lubrication and other substances.

E. Remove debris and surface dust from access spaces.

F. Concrete floors broom clean finish.

G. Vacuum clean carpet and similar soft surfaces.

H. Clean plumbing fixtures to a sanitary and polished condition, free of stains including those resulting from water exposure.

I. Clean light fixtures and lamps so as to function with full efficiency.

J. If permanent lighting fixtures have been used for construction purposes replace globes with new.

K. Clean project site, including planted sections and footpaths, of litter and foreign substances. Sweep paved areas to a broom clean condition; remove stains, petro-chemical spills and other foreign deposits.

L. Label keys for all locks accurately and provide in duplicate to the Owner at the completion of the Project.

133. Guarantees and Warranty

A. The Contractor or other approved Guarantor or Guarantors shall provide written guarantees where so specified elsewhere in the specifications.

B. Each guarantee shall be in an approved form and shall specifically include the provisions required herein.

C. All guarantee periods shall commence from the date of Practical Completion and shall be for the periods later specified.

134. Authority Approvals and Certificates

A. Prior to Practical Completion for the whole or any section of the work, lodge with the Architect any relevant certificates issued by Local Authorities.

B. Produce to the Architect a certificate of clearance of reinstatement of damage to footpaths and road, etc. from the appropriate Road Authority or City Engineer before Practical Completion.

135. Identification Sign of the Architect

Provide and fix a Identification Sign as supplied by the Architect and maintain in good condition throughout the currency of the Contract. The sign shall remain the property of the Architect. Remove same from the site and return to the Architect on completion of the Works.

136. Damp-proofing, Damp Courses and Flashings

The Contractor shall be responsible for the installation of all damp-proofing, damp courses and flashings whether detailed or not in accordance with good building practice and relevant Australian Standards.

END OF SECTION

SECTION 200 DEMOLITION

PART I GENERAL

201 General

A. Scope
Partial Demolition of existing building.

B. Examine documents: Examine all parts of the drawings and this Specification for requirements which affect the work of this Section.

C. Co-ordination: Co-ordinate with other trades affecting or affected by work of this Section, co-operating as necessary to ensure steady and satisfactory progress of the work.

202 Related Work

Disconnection of all existing services by appropriate other Trades.

203 References

Perform all demolition work in accordance with the relevant Australian Standards.
Comply also with the requirements of:
"Deemed-to-Satisfy Provisions" of the Building Code of Australia
Applicable Building Regulations,
Any Statutory Authority having jurisdiction
Local Council Conditions of Approval.

204 Public and Property Protection

Provide all measures required by Municipal and State ordinances, laws, and regulations for the protection of surrounding property, footpaths, streets, kerbs, the public, occupants and workmen during demolition operations. Comply with the above ordinances. laws etc. in carrying out all measures including barricades, fences, warning lights and signs, rubbish chutes, etc.
No blasting for demolition purposes will be permitted.

Exercise due care in executing this work.

Make good to original condition, all damage to adjacent properties which results from demolition or excavation operations.
Perform all restoration work without expense to the Owner.

205 Fees

Pay all fees due to any Authority requiring same in connection with the work of this Section.

206 Services

Before demolishing and removing any parts of building having electrical wiring, gas and water pipes, conduit or similar items embedded in them, notify the Authorities having jurisdiction, and make sure that these items are out of service so that they can be removed without danger.

207 Treasure Trove

No item of treasure trove or coins or objects of antiquity or of historical value or any other object or material of intrinsic value, not formerly part of the structure or structures being demolished, shall become the property of the Demolisher but shall be handed to the Owner or their representative immediately upon coming into the possession of the Demolisher or his employee.

PART II MATERIALS

208 Demolished Materials

Material required to be demolished shall become the property of the Contractor unless required for reuse as instructed and identified by Architect and shall be removed from the site.

209 Equipment

A. Supply all equipment required to perform the work of sufficient capacity to meet the stated completion date.

B. Provide disposal containers for all disposal required.

C. No containers may be located on public streets or pavements without obtaining required Municipal permits for same. Co-operate with all sub-contractors doing work in or near container locations to prevent uninterrupted progress of their work.

PART III EXECUTION

210 Examine the site conditions

Examine carefully site conditions.
Start of work means total acceptance of all conditions.

211 Methods and Operations

A. Demolish and remove completely parts of structure listed and/or directed for demolition. The methods of cutting and removal of floors, walls and other items to be removed shall be approved by authorities having jurisdiction.

B. Do not drop or throw material more than 5 metres. Lower by means of hoists or rubbish chutes. Wet down thoroughly during demolition to prevent nuisance of dirt and dust. Equip trucks used in hauling debris with tarpaulins to cover the loads. Do not load so excessively as to spill debris on streets.

C. Except as placed in approved disposal containers, do not allow combustible material and rubbish to accumulate on the site. Remove daily, or as directed. Burn no debris on site.

D. Where partial demolition leave building to be retained in a stable and structurally sound state. If required organise inspection by Structural Engineer to verify.

E. Upon completion of all wrecking and demolition and the removal of all rubbish and debris, remove all equipment used for this work.

212 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Architect or the Contractor on site.
Leave the site in an entirely clean condition, ready for the work of other trades.

END OF SECTION

SECTION 300 SITE PREPARATION

PART 1 GENERAL

301 Scope

The work of this Section comprises but is not limited to excavation, disposal of surplus excavated material both on and off the site, supply of compaction and filling material and the preparation necessary to bring the areas to correct shape and level prior to building construction, together with the treatment of the foundation area for the prevention of sub-terranean termites.

302 Related Work

Footings and Retaining Walls.
Demolition.

303 Quality Assurance

Provide data indicating that the tradesmen engaged for this project have a minimum of three (3) years' experience in such work required by this Specification.

304 Reference Standards

A. Comply with the relevant Australian Standards.
Comply with particular specifications in Building Regulations and/or Local Council publications.

B. Definitions

Rock:	Any natural or artificial material encountered in the excavation which cannot be removed until broken up by mechanical means such as rippers, jack-hammers or percussion drills.
Rippable Rock:	Means rock which can be removed by a single tyne, "D9" ripper.
Non-Rippable Rock:	Means all other rock.
Other than Rock:	All other material encountered in excavation.
Sub-Grade:	The natural ground below the excavations.
Filling:	A general term for all material spread and compacted over the sub-grade to make up finished levels or levels to the under-side of the base.
Sub-Base:	Selected filling spread and compacted over the sub-grade to make up levels to the underside of the base.
Base:	A selected filling layer spread and compacted to form an acceptable working surface directly under the building.

305 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

306 Approval for Variations

Before starting any excavation work which may involve a variation (whether addition or deduction) because of the nature of the material to be excavated, obtain a determination as to the nature from the Contractor. The variation shall be derived from the agreed determination of the Contractor and Structural Engineer.
If no prior determination has been obtained, the variation, if any, shall be made only at the Owner's discretion.

307 Use of Explosives

Explosives shall not be used.

308 Provisional Depths

The footing or strip depths shown on the Drawings are provisional.
Actual depths on the site shall be to the approval of the Contractor and Engineer.
If there have been variations to the Contract levels or dimensions of excavations, do not commence back-filling or place any permanent work in excavations until the Architect has made measurements and approved them.

309 Site Management

Inspection: Give the Contractor at least one working day's notice that the following are ready for inspection:

- rock encountered in the excavations;
- excavation completed;
- filling completed.
- completed placement of waterproofing membrane

310 Excess Excavation

Excess excavation not authorised by the Contractor or Architect and any consequent additional back-filling, compacting or testing, shall not justify a contract variation or extension of time.

PART II MATERIALS

311 Termite Control

All construction should be in accordance with AS3660.1.
Insecticides to be applied by licensed applicators, in accordance with procedures laid down in Australian Standard 3660.1.
Consult the Environment Protection Authority or equivalent body or Local Council for approval of proposed methods of treatment.
Supply approved mechanical termite shields or natural ethical substances in accordance with supplier's recommendations.
Allow for and provide to Owner certification of termite control measure.

312 Filling

A. Bring all filling on to the site unless it can be provided from spoil recovered from the site. Filling shall be sound material, free of perishable material, or any material that will form stable fill, but subject always to Engineer's approval.

B. Filling shall be of the following types:
Approved Excavated Material: The best of the clean inorganic excavated material, approved by the Engineer.
Hardcore: Clean hard filling such as broken brick or stone rubble, consolidated in position.
Porous Filling: Hard core graded from 40mm to 15mm.
Sand: Salt free, loam free, packing quality
Fine Crushed Rock: 15mm to 5mm clean crushed rock.

313 Damp-proof Membrane

Approved flexible polymeric film 0.3mm thick. Deliver underlays to the site in suitable protective packaging, bearing the name of the manufacturer. Handle and store the underlay so that it is not punctured, torn or otherwise damaged.
Allow for and provide to the Owner certification of damp-proof membrane.

PART III EXECUTION

314 Examine all conditions.

Start of work means total acceptance of all conditions.

315 Excavations Generally

A. Suspend any ground works during inclement weather which would result in unsatisfactory work.

B. Excavate accurately to shape and profile and keep free from loose earth and stones.

C. Excavate generally as required or as shown on the Drawings, including but not necessarily limited to the following:
Removal of all footings and unnatural items to 900mm below grade.
Preparation of sub-grade as necessary.

D. Trim the sub-grade surface evenly to the profiles shown on the Drawings.

E. Make allowance for settlement and compaction.

F. Allow for falls in slabs on grade to streets, driveways and outlets.

G. Prepare for underground services, referred to in other Sections of the Specification.

H. Prepare for strip footings, footing beams, pad footings, ducts and pits, to depths shown.

I. Carry out additional excavation where necessary to permit full use of suitable mechanical equipment (e.g. rippers) and back-fill with appropriate material as specified in this Section.

J. Where excavation exceeds the required depth, fill back to correct depth with material as follows:
-below slabs on ground: Hardcore;
-below footings, beams and other structural elements: Concrete of strength equal to the structural element, minimum 15MPa. - In service trenches: 1:2:4 concrete/approved compacted pipe bedding material.

316 Bad Ground

Should unsuitable material be encountered at the prescribed depths of excavation, or soft, wet and unstable areas develop during excavation, obtain instructions from the Engineer before carrying out additional excavations. Back-fill and compact to the correct levels as directed.

317 Existing Services

Remove all existing services and seal at the site boundaries.
Before demolishing and removing any parts of building having electrical wiring, gas and water pipes, conduit or similar items embedded in them, notify the Contractor and Authorities having jurisdiction, and make sure that these items are out of service so that they can be removed without danger.

318 De-Watering

Maintain excavations, levelled and filled areas free of water by temporary catch drains, sumps, pumping, bailing or whatever means are suitable and effective.
Immediately before placing concrete or masonry on ground remove all free water and foreign matter.
Prevent any water flow over freshly laid work.

319 Shoring

Provide all shoring, planking and strutting necessary to retain the sides of the excavations and to ensure safe working. Provide safety covers over holes. Provide any necessary needling, shoring and strutting to adjacent buildings.
No instruction shall relieve the Contractor of sole responsibility for the sufficient support of the excavation.
Guard against the formation of voids outside sheeting or sheet piling if used and should any voids form, fill and consolidate them to approval.

320 Filling Schedule

Fill generally as required or as shown on the Drawings, and as follows:

Under concrete floor slabs cast on ground:
First 50mm below slab: sand blinding.
Remainder: 100mm crushed rock for non-suspended slab.
Remainder: approved excavated material for suspended slabs.
Back-fill: Approved excavated material unless otherwise specified.
To retaining walls or walls below grade: free draining granular material.

321 Bearing Surfaces in Rock

Should rock be encountered during excavation the Engineer is to be notified and their instructions obtained prior to proceeding with the work in that area.
Where structural loads bear on rock, unless otherwise specified, scabble the rock face to give even plane bearing surfaces, level unless required to be sloping or stepped.
Bored pier holes shall be taken a minimum of 300mm below the rock surface and the bottoms cleaned of all loose matter.

322 Compaction

Place filling in layers not exceeding 150mm deep when measured loose.
Bring filling to optimum water content by watering, and compact each layer thoroughly and uniformly with a vibrating roller where practicable.
Hand tamp against ground or perimeter beams or walls.
Compact each layer of filling to obtain a uniform density of not less than 95% of the maximum density at optimum moisture content as determined by the Dry Density/Moisture Content tests set out in relevant Australian Standard.
Finish the base to the following tolerances:
Variation from designed level: 5mm
Variation from 3000mm straight edge: 5mm

323 Damp-proof Membrane

Lay on approved 50mm thick sand blinding. Where necessary, cut sheets to maximum practical width, to suit the layout, and arrange laps to face away from the direction of the pour. Provide laps as recommended by the manufacturer, but not less than 200mm.
Seal laps with pressure adhesives or tapes as recommended by the manufacturer of the underlay and ensure that the adhered surface of the underlay is dry and clean.
Take the underlay up walls to level of top of future concrete slab or as otherwise instructed. Seal service pipes and similar elements when they penetrate the underlay.
Allow ample slack to avoid pulling at tape junctions.
Cover vertical or inclined surfaces in an unbroken sheet where possible. Otherwise arrange laps vertically to avoid pulling at joints. Fix at the top with tape or other recommended fixing.
Inspect membrane after laying and before concrete is poured. Patch and seal punctures.

324 Maintenance of Membranes and Underlays

Maintain the membrane or underlays in their best possible condition throughout the construction period.
Repair immediately, to the approval of the Contractor, any damage which does occur.

325 Clean Up

On completion of all work specified above, remove all surplus materials imported to the site, level off surplus excavated material, or pile such material on the site as directed by the Contractor.

326 Completion

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

END OF SECTION

SECTION 400 PLUMBER: SANITARY, COLD AND HOT WATER

PART I GENERAL

401 Scope

The work of this Section is as specified below and as detailed on drawings and includes but is not limited to, supplying and fixing of a complete sanitary system of soil, waste and vent pipes plus the reticulation of cold water and hot water from the water mains, including all associated isolating valves, stop taps and outlets to connect the following items, also supplied and fixed under this contract:

Water Meters
Basins, taps and spouts
Shower, taps and spout
WC pans, seats, cisterns
Disabled w.c. and fitments
Electric Hot water units
Floor wastes
External hose cocks
Fire extinguishers
Water feature
Capped off services as documented

Core holes required are the responsibility of the Subcontractor.
Subcontractor responsible for all overflashings at roof penetrations relating to this trade.

402 Related Work

Sewerage and Drainage
Ceramic Tile
Finishing Trades
Masonry
Concrete

403 Quality Assurance

Perform all of the work of this Section using tradesmen whose experience and skills meet the requirements of any controlling statutory authority.

404 Reference Standards

Comply with all current editions of the relevant Australian standards.

405 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

406 Submissions

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

407 Warranty

Provide the Owner with warranties covering:

A. Materials: in the form supplied by manufacturers of specified components.
B. Installation, for five (5) years from the date of Practical Completion: the complete piping installation and the specified components to which it is connected.
C. Equipment: in the form supplied by manufacturers of specified items e.g. hot water units etc.

408 Fees

Pay all fees to the relevant statutory authorities.

PART II MATERIALS

409 Acceptable Manufacturers
Ensure that all items to be installed are approved for installation by Local Authorities before ordering.

410 Materials and Fitments
Refer to Finishes and Fixtures Schedule.

411 Equipment
Provide all necessary equipment to effect a complete installation of each part of this Section, including seals, jointing materials, flanges, etc.
For specific items refer to the Finishes Schedule.

412 Fabrication
Fabricate all components in a manner approved by the Local Authority and the Architect. Comply with requirements of relevant Australian Standards where applicable.

PART III EXECUTION

413 Examination
Visit the site before delivery of materials, and compare conditions with those shown on Drawings. Start of any work means total acceptance of all conditions.

414 Connections to Supply
Arrange with the supply authority, obtain and install any required meter equipment complete with meter housing, and connect in accordance with the Authority's requirements.

415 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. Maintain required distances between pipes of different sorts and pipes and the structure.

416 Fabrication and Jointing
Fabricate and join all components to the authority's approval, to applicable Australian Standards and to the manufacturers' instructions.

417 Installation
Install all components to 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 all relevant work to produce the whole installation in proper sequence.
Connect all drained fittings and installations to the drain inlets provided by the Sewerage Plumber. Ensure that all 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.

418 Capping
Where noted cap lines for future instalment of fitments as noted on drawings or instructed by the Architect and Contractor.

419 Testing
Cover no pipes, joints or connections until tested and passed by the relevant authority, and approved by the Contractor and Architect.
Submit to the Architect copies of any and all certificates issued by relevant authorities.

420 Protection
Protect all work of this Section from damage until Practical Completion is achieved.

421 Cleaning

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

422 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or Architect.

END OF SECTION

SECTION 500 SEWERAGE AND DRAINAGE

PART I GENERAL

501 Scope

The work of this Section includes but is not limited to supplying and laying a complete system of sewer, sub-drainage and storm-water pipes, pits, covers, etc., as specified below and as detailed on the Drawings.
Core holes required are the responsibility of the subcontractor.

502 Related Work

Excavation
Concrete
Roof Plumbing
Sanitary Plumbing
Masonry

503 Quality Assurance

Perform all of the work of this Section using tradesmen whose experience and skills meet the requirements of any controlling Statutory Authority.

504 Reference Standards

Comply with all requirements of any Statutory Authority having jurisdiction.
Comply with all current editions of the relevant Australian Standards.

505. Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

Note: Conditions of Tender require that Tenderers list subcontractors.

506 Warranty

Provide to the Owner a warranty covering:

A. Materials: in the form supplied by manufacturers of specified components.
B. Installation for five (5) years from the date of Practical Completion: the complete drainage installation.

PART II MATERIALS

507 Materials

Refer to Finishes and Fixtures Schedule.

PART III EXECUTION

508 Examination

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

509 Trenching

Form straight and true trenches, maintain sides and keep 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.

510 Pipe Laying

Lay pipes 600mm clear of walls.
Connect with materials appropriate to the pipes in accordance with manufacturer's instructions.
Provide inspection openings, bends and junctions required by Authorities.

511 Pipes Below Structures

Where sewer or drain pipes are laid below or under structures, comply with requirements of local Authority.

512 Connections to Other Services

Connect downpipes to storm water drains with appropriate pre-formed or special upturns, shoes, etc. 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.

513 Testing

Cover no pipes, joints or connections until approved by the Contractor and tested and passed by the relevant Authority.

514 Backfill

After inspection (and Testing) where required, back fill with approved granular fill compacted as per Clause 322 of this Specification.
Such material requires approval from local Council Engineer and Contractor.
Materials not conforming to such requirements or not approved will be removed without cost to the Owner.

515 Protection

Protect all completed work from damage until Practical Completion. Make good any damage which does occur.

516 Cleaning

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

517 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or Architect.

END OF SECTION

SECTION 600 ASPHALTIC/BITUMINOUS CONCRETE PAVEMENT

PART I GENERAL

601 Scope

Supply and install a complete installation of asphaltic/bituminous concrete paving to carpark, driveway and road extension to Waterview Street including but not limited to:
Preparation of sub-grade
Base courses, laying and compaction
Asphaltic/Bituminous concrete surfacing
Line marking

602 Related Work

Site Preparation
Sewerage and Drainage
Concrete

603 Quality Assurance

Provide data indicating that the tradesmen engaged for this project have a minimum of five years of experience in such work as required by this specification.

604 References

Comply with relevant portions of the applicable Australian Standards.

605 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

606 Warranty

Provide to the Owner a warranty covering material and installation for three (3) months from the date of Practical Completion.

PART II MATERIAL

607 Pavement Construction Materials

To Structural Engineer's Specification.

608 Equipment

Provide and employ all equipment required for satisfactory completion of the work.

PART III EXECUTION

609 Examination

Inspect the site. Determine conditions and ensure that suitable conditions exist at the time of start of work of this Section. Co-operate with other trades to prevent delay in job schedule. Ensure that other trades will not be adversely affected by work of this trade.
Start of any work means total acceptance of all conditions.

610 Preparation

Remove surface material to required depth. Test compaction capacity of natural material. Fill any soft spots with crushed rock to required compaction. Shape to specified falls.
Allow for installation by other trades of drainage and other items.

611 Installation of Base Course

Spread base course material in layers between 100 and 150mm thick. Compact to 100% of standard maximum dry density with minimum 10 tonne roller.
Employ a vibrating roller as necessary. Maintain damp condition of material until seal is applied. Employ 15 tonne roller for final compaction.

612 Testing

Allow for three separate compaction density tests to be conducted in random locations by a NATA approved testing organisation. Should tests prove unsatisfactory, repair the work and repeat tests to a satisfactory result without cost to the Proprietor.

613 Pavement Courses

Finish pavement courses consisting of layers of wet-mix crushed rock to smooth and uniform surfaces and conform to the lines, grades and cross sections shown on the drawings, within the following limits:

A. Level: The top of each pavement course: within 10 mm of level shown on drawing.
B. Thickness: The thickness of the top course of the Wet Mix pavement: within the tolerance of +5, -10mm.
C. Shape: Finished surface of the pavement course: within 10mm either way from a 3 metre straight-edge laid parallel to the centre line of the pavement or from a template placed at right angles to the centre-line.
D. Achieve falls to sumps and pits. Significant ponding will not be accepted.

614 Prime Coat

Prime with cut back bitumen suitable for the surface of base material and prevailing weather conditions.

615 Tack Coat

If required apply tack coat to clean dry surface. Consulting Engineer will determine necessity for this item.

616 Asphaltic/Bituminous Concrete

Prepare adjacent surfaces such as longitudinal joints, kerbs, channels, headers, manholes, etc. with a thin uniform tack coat.
Install asphaltic/bituminous concrete with approved equipment in suitable climatic conditions.
Form straight and waterproof joints with even texture and density.
Compact without delay, and finish smooth and true to established grades.
Thoroughly compact areas around kerbs, channels, manholes to same density as other surfaces.
Thickness of bituminous concrete shall not vary more than 7mm from that indicated on drawings.
Replace any low or defective areas immediately by cutting out and replacing with fresh hot mix and compacting to conform to surrounding areas.
Entire area shall be free draining on completion.
No part of the finished work shall be less than 97% of laboratory tested specified density.

617 Line Marking

Mark pavement in accordance with lines shown on the plan.

618 Completion

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

END OF SECTION

SECTION 700 MASONRY

PART I GENERAL

701 Scope

General: Supply and build all the brick and blockwork walls, upstands, parapets, planter boxes, retaining walls etc., as shown on the Drawings or needed to complete the work, including but not limited to the following:

1. All labour and materials.
2. Building in of miscellaneous items provided by others.
3. Staging and scaffolding.
4. Cleaning.
5. Where required use Blockwork and manufacturer's details to achieve fire rating.

702 Related Work

Concrete
Structural Steel
Windows and Doors
Carpenter and Joiner

703 Quality Assurance

Provide manufacturer's certification that blocks supplied are of the specified type and strength, and were manufactured in accordance with relevant Australian Standards. Reuse of blocks is to be only on approval of Structural Engineer.

704 Reference Standards

Comply with applicable portions of the relevant Australian Standards; current edition, in particular work in accordance with AS 3700.

705 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

706 Delivery, Storage and Handling

Co-ordination: Reach agreement with the Contractor 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

707 Bricks and Blocks

Extruded fair face select commons suitable for painting.
Commons to be selected by sub-contractor for approval by Architect.
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 other purposes. Supply matching half-blocks, half-height blocks and closers as required.
Low pressure steam cured blocks are not acceptable.

708 Bagged Finish

Spread the mortar on exposed external surfaces with a brush, sponge float, rough cloth or other suitable device and then rub to achieve a uniform texture.
Protect adjacent surfaces as necessary and promptly remove any bagging mortar spill, splashed or otherwise lodged on them.
Carry out bagging as the works proceeds.
Sample of bagged finish to be prepared for Architect's approval before proceeding with the work and shall remain the control sample of same.

709 Mortar and Grout Materials and Types

Materials: Comply with relevant Australian Standard.
Mortar: Restrict the amount of fine aggregate passing a 75 micron test sieve to 5% maximum.
Type: Comply with relevant Australian Standard.

710 Miscellaneous Materials

Comply with relevant Australian Standard.

A. Wall Ties and Accessories
B. Reinforcement
C. Lintels and Other Steel in Brickwork
   Extend lintels 230mm minimum past each jamb of openings or as detailed.
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. Damp-proof Courses: To standard building practice
   Flashings: To standard building practice
   NOTE: Both to comply with relevant Australian Standard.

711 Steel Lintels in Brickwork

To all brickwork openings where brickwork is to be supported over openings and not detailed on Structural Engineer's drawings use galvanised mild steel lintels, build in accordance with the following schedule :
To each 110mm (or 76mm) thickness of brickwork, support over all openings not otherwise specified :

Up to 1200mm	1 no. (one)	76 x 10mm flat bar
Above 1200mm up to 1650mm wide	1 no. (one)	76 x 76 x 10mm angle
Above 1650mm up to 2400mm wide	1 no. (one)	125 x 76 x 10mm angle

Note: Provide a minimum of 110mm bearing each end for all lintels listed above.

Above 2400mm To engineer's details

Set all angles with the first dimension vertical.
Hot dip galvanise all steel lintels in exterior openings.

712 Lintels, Concrete Masonry

Build all 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 any 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
90mm	Maximum 1800mm	1/16mm bar
(Other)		

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.

713 Weepholes

Weepholes to be provided in accordance with good building practice and current Australian Standard. Weepholes to be crisp edged and cleared of debris.

PART III EXECUTION

714 Mortar Mixing

Measure materials to ensure that the specified mix proportions are maintained.
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.
Use no chemical to affect the plastic or other properties of mortar or as a substitute for lime without the Architect's permission.

715 Mortar Life

Re-tempering to replace water lost by evaporation is encouraged until initial set begins.
Mortar which has begun its initial set must be rejected and may not be re-tempered.

716 Preparation

Review the project with all 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 all built-in items from their suppliers prior to starting brickwork.

717 Laying

General: Comply with all applicable provisions of applicable Australian Standard. Set out all brickwork so as to reduce cutting to a minimum and, in facework, to avoid irregular or broken bond.
Build in accordance with the dimensions, thicknesses and heights shown on Drawings, plumb, level and in the designated position within the tolerances of applicable Australian Standard.
Allow no part to rise more than 1000mm above adjacent unfinished work. Rake back advanced work, build all brickwork in bond and avoid toothing wherever possible.
Build in as necessary all reinforcements, arch bars, lintels, frames, straps, bolts, lugs, wall ties, metalwork, damp-proof courses and flashings, etc.
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.
Protect new and incomplete brickwork with coverings, temporary bracing or the like.

718 Jointing and Finishing

Joint thickness: 10mm within the tolerances given in relevant Australian Standard
Joint finish: quality flush work, face suitable for painting where exposed.

719 Bonding and Tying

Build all work in stretcher bond gauged generally vertically seven courses equal to 600mm and horizontally 2.5 bricks equal to 600mm.
Space wall ties in accordance with relevant Australian Standard.
Keep all cavities clean and free from mortar droppings.

720 Cleaning of Facework

Take care to keep internal faces walls clean at all times. Should further cleaning be necessary, use hydrochloric acid not stronger than 5%, treating only a small area at any 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 any stoppage of work.

721 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or Architect.
On completion clean up all mortar droppings, debris, etc., remove all scaffolding, make good all put-log holes and blemishes and leave all work in a first class condition.
Protect all facework surfaces where necessary to avoid damage during other building operations.

END OF SECTION

SECTION 800 CONCRETE

PART I GENERAL

801 Scope

Refer to Structural Engineer's drawings and specification which take precedence over architectural documents except for setout. Any setout conflicts or conflicts between the Architectural drawings and structural drawings notify the Architect and under no circumstances scale drawings.
Supply and install concrete and reinforcing steel for:

A. Strip and pad footings
B. Slabs including downturns and stairs
C. Filled Retaining walls
D. Planters and hobs
E. Ramps, kerbs and gutters

802 Related Work

Close coordination is required with other sections as follows:
Excavation
Plumber
Sewerage and Drainage
Electrical
Masonry
Damp-proof membranes
Floor Tiling
Structural Steel
Mechanical

803 Quality Assurance

Submit evidence of experience appropriate to the class of work required. Install under the direct supervision of a capable Foreman with a proven background in this trade.

804 References

Comply with relevant Australian Standards.
Comply with the requirements of any Building Regulations applicable to the project.

805 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia. All external stairways are to be designed and constructed in accordance with the Building Code of Australia.

806 Delivery and Handling

Deliver all concrete materials to the site in ready-mix trucks in accordance with relevant Australian Standard. Arrange and provide for concrete pumping equipment as needed. Avoid double handling at the site.

807 Warranty

Forward to the Contractor a statement guaranteeing that the concrete complies with the approved mix design and that concrete has attained required strength at 28 days.

PART II MATERIALS

808 Formwork

Provide all formwork required to meet the requirements of both drawings and this specification. Comply with relevant Australian Standard.

A. Formwork Classes: Comply with relevant Australian Standard.
1. Class 2 Formwork for all concrete surfaces to be painted and all concrete surfaces that are exposed and critical to building appearance.
2. Class 3 Formwork for carpark soffits and exposed non finished work and works not otherwise specified or shown on the drawings.

3. Class 4 Formwork for all concrete surfaces to be rendered, tiled or concealed by other finishes and all concrete surfaces permanently concealed in ducts, shafts and above false ceilings.
4. Class 5 Formwork for all footings, concrete surfaces in the ground and rear surfaces of retaining walls, piers, etc.

B. Formwork Materials: Approved timber, plywood or metal.

All to be of first class strength and finish, free of any defects that may cause marking or discolouring to finished concrete surfaces exposed to view. All joints to be aligned and taped to Architect's satisfaction.

809 Steel Reinforcement

A. Provide all required steel reinforcement for concrete in accordance with drawings and details thereon. Refer all discrepancies to the Engineer for decision before proceeding with the work.
Be solely responsible for the supply, fabrication and placing of all reinforcing steel.
Remove reinforcement which does not comply with the requirements of this Specification and replace to the satisfaction of the Engineer.
Reinforcing steel shall comply with the relevant Australian Standards.

B. Ensure all 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, all at the time of placing concrete.
When there is a delay between placing the reinforcement and pouring the concrete, the Engineer may require the reinforcement to be restored to a condition satisfactory to receive concrete.

810 Concrete

A. Cement: Comply with relevant Australian Standard. 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: Comply with the requirements of relevant Australian Standard.
Maximum Size of Coarse Aggregate : comply with relevant Australian Standard and drawings.

C. Water: Water shall comply with relevant Australian Standard.

D. Admixtures: None, except with prior approval of the Engineer in writing.
If admixtures are used, comply with relevant Australian Standard.

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 relevant Australian Standard.
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.

G. Testing: Comply with the requirements of relevant Australian Standard.

811 Fabrication of Steel Reinforcement.

A. Fabricate, bend and weld in accordance with the standards laid down in relevant Australian Standard, the drawings, the requirements of this Specification and to the satisfaction of the Engineer.
Where possible, bend all steel prior to delivery.

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 all necessary support and spacer bar though not necessarily shown on the drawings, to the satisfaction of the Engineer.

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 relevant Australian Standard.

G. Tie Wire: annealed iron wire not less than No. 16 gauge, or other approved fasteners, unless shown otherwise on the drawings.
H. Welding (including spot welding) of hard grade bars is not permitted.
I. Reinforcement from any section of concrete which has been demolished and removed may only be re-used after inspection and approval by the Engineer.

PART III EXECUTION

812 Examination
Inspect the site and all relevant conditions before installing any work. Ensure all conditions are satisfactory for installation. Start of any work means total acceptance of all conditions.

813 Preparation
Ensure that all preparatory work of other trades is complete, including site preparation, sub-base placement, plumbing and other fittings are in place and secured, membrane and other materials are secure and complete.

814 Formwork
Place and secure all formwork complying with relevant Australian Standard. Fix all supports so that all imposed loads will cause neither displacement of or unacceptable finishes to stripped concrete. Seal all joints on exposed surfaces. Allow drip mouldings to all exposed soffits.

815 Fixing Reinforcement
Place and secure in correct location, all reinforcement in accordance with structural drawings.
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, 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.
D. Tie, clip or otherwise secure mesh reinforcement together by approved means at alternate intersections and at such other points as may be required.
E. Splices on Reinforcement: Splice only at locations approved by the Engineer with minimum lap lengths as shown on the drawings.
F. Cover to Reinforcement: Allow clear minimum cover to reinforcing as shown on the drawings. Maintain this cover during concreting.

816 Build In
Install and build in all items required including:
Construction joints
Conduits and piping
Bolts, lugs and anchors
Waterstops
and all other items so required.
Complying with structural and other trades requirements. Secure such items to prevent displacement during concrete pouring.

817 Pouring Concrete
A. Arrange for, with sufficient notice, inspection of all preparatory work by Engineer and Local Authority. No concrete may be poured until authority is received.
B. Ensure that all surfaces, trenches and formwork is both free of water and building debris and any material which may adversely affect concrete.
C. Transport 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.
D. Place concrete in accordance with relevant Australian Standard.

818 Compaction of Concrete

Compact all concrete by mechanical vibration to the maximum practicable density, free of air or stone pockets. Any concrete not vibrated will be rejected.
Vibrate concrete in layers not exceeding 450mm in thickness and avoid contact of the vibrating head with surfaces of the forms. Use of the vibrator to spread concrete is not permitted.

819 Curing Concrete

Comply throughout with the requirements of relevant Australian Standard.
Protect freshly cast concrete from premature drying and excessively hot or cold temperatures. Maintain the concrete at a reasonably constant temperature with minimum moisture loss for the curing period.
Period of Curing: Continue for seven days for normal Portland cement concrete.
Prevent rapid drying out at the end of the curing period.

820 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Structural Engineer, Contractor or Architect.

END OF SECTION

SECTION 900 ROOFING AND ROOF PLUMBING

PART I GENERAL

901 Scope

Supply and install a complete roofing installation including all required roofing as shown on the drawings including but not limited to the following:

1. Metal deck of colorbond steel including all accessories, fastening clips, apron flashings, ridge caps, gutters, parapet cappings, copings, sumps, overflow pipes, downpipes.

2. Roof insulation, sarking and wire mesh.

3. Roof penetrations and sealing thereof.

4. Continuous waterproof sheet membranes as documented.

5. All voids to roof space including at eaves, gutter and roof cladding junctions to be bird and vermin proof.
   Corrugated roof sheeting to be closed off adjacent to the sheets ends with suitable galvanised wire mesh or profiled corrugation closers to prevent bird entry into the roof space.

902 Related Work

Structural Steel
Carpentry
Plumber
Sewerage and Drainage
Wall and Roof Construction

903 Quality Assurance

Suppliers and installers shall be widely experienced in the class of work required by this Specification.

904 Responsibility

The Contractor is to be responsible for supplying to the Roofer a layout showing the exact positions of support to which the roofing is to be fixed and details of work at ridges, gutters and barges. Before commencing work the Roofer is to satisfy himself that framing is to his satisfaction, regarding straightness and level and properly jointed and with edges nearest to ridge in line. Commencement of work by Roofer will be taken as acceptance of roof framing being constructed to his satisfaction. The Roofer will be responsible for the weatherproofing of roof and all penetrations.

905 Reference Standards

Comply with the relevant Australian Standards, in particular work in accordance with AS 3500.3.2.

906 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

907 Delivery, Storage and Handling

Delivery: Supplier to include delivery to site, unloading and stacking in a location away from potential damage, preferably directly on to installed roof framing. Reduce on site storage to a minimum and deliver materials as and when required for direct installation. Be responsible for loss and damage to materials delivered, whether stockpiled or in its place.

908 Warranty

The Contractor shall provide to the Owner a warranty on the whole of the roof and roof plumbing which states that all work shall remain waterproof and weather-tight for the period of five (5) years from the date of Practical Completion.

The warranty shall include all roof penetrations for pipes, flues, upstands etc.

PART II MATERIALS

909 Manufacturers

Material may be supplied by one of the following acceptable manufacturers:

- Lysaght Brownbuilt Industries
- Monier Metal Building Products
- K.H. Stramit Limited
- Creeks Gutters

Note: Other products may be acceptable. Apply to Architect for approval.

910 Materials

Roofing:
Refer Finishes and Fixture Schedule.

Accessories:	Cappings, cover and apron flashings, spreaders, gutter flashings, box gutters, overflows and brackets.
Material:	Zincalume Steel
Thickness:	0.48mm
Coating:	Colorbond

Gutters:
Refer Finishes and Fixture Schedule.

Downpipes, straps and rainwater heads:	
Material:	Colorbond Steel
Type:	Circular downpipes
Colour:	Colorbond, to be selected
Note:	DP's to be mounted free from wall on astrigals. Colour to match. At change of direction downpipes to be mitred, crimped joints will not be accepted.

Wire Supporting Mesh:

Material:	50 x 1.2mm galvanised wire

Roof and Wall Insulation	
Material:	Refer Finishes and Fixture Schedule.
Sarking:	Double sided, anti glare, reflective aluminium foil insulation in
Material:	accordance with relevant Australian Standard by CSR Bradford, Type 'Thermotuff' super strength foil.

911 Fabrication

All roofing components shall be formed and fabricated in accordance with relevant Australian Standards.

PART III EXECUTION

912 Examination

Inspect site conditions before installation. Ensure all roof framing is entirely satisfactory. Request rectification by Contractor if necessary. Ensure that delivery and installation will not be impeded by any on-site condition at time of delivery. Commencement of installation shall be construed as unqualified acceptance of site conditions as suitable for the work of this Section.

913 Terrain Category

Confirm terrain category and refer applicable Australian Standard.

914 Flashings, Cappings, etc.

Install all flashings, apron, cover, etc., as required for watertight roof installation.
Flashing to Precast parapet to that subcontractor's detail.

Flashing shall be lapped at least 150mm at junctions, and over flashings neatly dressed and finished. Where necessary to follow a roof slope, flashings shall be stepped in even overlapping widths, the top corners of which shall finish to a line parallel to the roof slope.

Flashings shall be fabricated in materials which are compatible with gutter and roofing materials and shall have the same finish as the surrounding materials where they are installed. Flashings shall have a minimum thickness of 0.60mm.

915 Penetrations

Penetration flashings shall be of neatly formed material matching roofing material. Flanged tubular collars 0.70mm sheet zinc not less than 150mm high and 12mm wider than penetrating item.

Where the width of a penetration is wider than a roofing trough or extends across several troughs, a back gutter shall be formed, using sheet material similar to the roofing material, well lapped under the roofing, double riveted and sealed with silicone sealant. Ends of cut ribs shall be closed and sealed. Back gutters shall not be less than 100mm wide with falls towards the sides of the penetration collars.

Over-flashings of penetration collars shall be neatly formed in material matching the roofing material but not less than 0.5mm thick, securely clipped and sealed to the penetrating items and dressed well down over the collars to finish at a straight line level with the tops of the ribs. Lead or copper shall not be used for over-flashings.

916 Downpipes

Install downpipes in accordance with applicable Australian Standard.

Secure to building, as detailed, or recommended centres, minimum 1800mm with zincalume steel astrigals colorbond finish to match downpipe finish.
Note at change of direction mitre downpipes.

917 Cleaning

To prevent contamination and corrosion, all metal roofing and all rainwater goods shall be kept clean at all times during the progress of the Works.

At the end of work each day, and immediately before each occurrence of rain, the metal surfaces shall be thoroughly swept to remove all metal filing, swarf, off-cuts, dust, and other materials which could cause corrosion or blockages. Waste materials must not be permitted to enter downpipes, rainwater heads, or drains.

Unsecured nails, rivets, screws, bolts and similar fixing devices must also be removed from roofing, guttering, etc., at the end of work each day and before each occurrence of rain.

918 Testing

On completion, test the entire installation in the presence of and to the satisfaction of the Architect.

919 Completion

Complete all contracted work in accordance with contract documents and written variation orders issued by the Contractor or Architect.
Leave the site in an entirely clean condition, ready for the work of other trades.

END OF SECTION

SECTION 1000 METALWORK

PART I GENERAL

1001 Scope

Supply, engineer and install all required general and architectural metal work items including but not limited to:
Mail boxes
Gate and fence
Bicycle racks

1002 Related Work

Close co-ordination is required with the following other trade sections:
Masonry
Carpentry
Joinery
Painting
Concrete
Structural Steel

1003 Quality Assurance

All work of this Section shall be performed by experienced craftsmen familiar with the quality required in this class of work.

1004 References

Comply with the relevant Australian Standards.

1005 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1006 Samples

A. Sample Welds: 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. When approved, samples shall establish quality of all similar work of this Section.
B. Check on Delivery: Contractor shall check all materials on delivery to site for quality, and shall reject any materials not meeting the requirements of this Specification or equal to approved samples. Rejected materials shall be returned to the Fabricator at the Fabricator's expense.

PART II MATERIALS

1007 Materials

Refer to the Finishes and Fixture Schedule.

1008 Finish

All materials exposed to weather shall be either hot dipped galvanised after fabrication or as otherwise noted

Internal steel shall be finished after fabrication with zinc phosphate primer to relevant Australian Standard unless scheduled otherwise.

1009 Welding

General: Details of all joints, the techniques of welding employed, the appearance and quality of welds made and the methods used to correct defective work shall conform to requirements of relevant Australian Standard.
All welding shall be continuous. Tack welding or skip welding will NOT be permitted where items are to be galvanised. All exposed-to-view welds shall be ground smooth. Non-exposed-to-view welds, where uneven or rough, shall be ground smooth to ensure uniform galvanising. All weld spatter shall be chipped off smooth or ground smooth. Grinding of welds shall be subject to the approval of the Architect.

1010 Connection Design

External Items: Design shall conform to the recommendations of the relevant Australian Standard.
Complete Design: Design of connections not indicated on the drawings shall be completed and indicated on the shop drawings.
Flanges: Concealed where possible. Except where access is impossible, connection screws and bolts shall be on the underside of joints.
Shop connections for steel fabrications shall be welded, and field connections bolted.
Exposed surfaces shall have a smooth finish with sharp well-defined lines and arrises.
Machined joints shall be milled to a close fit. Design all necessary lugs, brackets and similar items so that work can be assembled and installed in a neat, substantial manner.
Thickness of metal and details of assembly and supports shall be such as to provide ample strength and stiffness.
Provide holes and connections as required to accommodate the work of other trades and for site assembly of metalwork. Holes shall be drilled or punched and reamed in the shop.
Joints and connections shall be formed to exclude water and to permit draining during galvanising.

PART III EXECUTION

1011 Examination

Inspect site conditions before fabrication, where possible, and before delivery of materials. Ensure all conditions are satisfactory for installation.

1012 Preparation

Field measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of work. Do not delay job progress. Allow for adjustments and fitting of the work in the field where taking of measurements might cause delay.

1013 Inspection and Reinstatement

All fabrications shall be checked as they are unloaded at the project site for evidence of any physical damage. Damaged fabrications shall be treated as follows:

Damage through galvanising: Noted and set aside for immediate cold-galvanising repair. Do not install until reinstated.
Architectural metalwork: Returned to shop for repair or replacement.
Galvanising Reinstatement: Repair per manufacturer's directions.
Note: Items having galvanising as finish require particular care as unacceptable visual repair may cause rejection of whole item.

1014 Installation

Errors in shop fabrication or deformations resulting from handling and transportation that prevent the proper assembly and fitting of parts shall be corrected, at no additional cost, by approved methods.
Anchors, bolts and other required anchorage items shall be verified for proper size and accurate location prior to erection.
Anchorage: Except for anchorages furnished herein but placed by others, set and secure all necessary anchorages, including concrete and masonry inserts, bolts, wood screws and other connectors as needed. Perform all cutting, drilling and fitting as needed, locating anchorages and holes to ensure proper positioning of completed work.
Fit: During installation and assembly, form tight joints with exposed connections accurately fitted, and reveals uniform. Finished work shall be accurately located, plumb, level, square and true in reference to adjacent construction.
Finish: Do not cut or abrade shop finishes which cannot be completely restored in the field. Return items with damaged finish to the shop for full restoration, or else provide new replacement items of undamaged and matching finish.
All members shall be aligned, levelled and adjusted accurately prior to final fastening. Tolerances shall conform to AS Standards.
The use of gas-cutting torch in the field for correcting fabrication errors will not be permitted under any conditions. Too-long fabrications may be cut shorter with power hacksaws on site.
Isolate all dissimilar metals likely to be subject to moisture or electrolytic reaction.

1015 Protection

Cover Work: Immediately following installation, wrap or cover architectural metalwork to avoid wear and tear of finish during subsequent construction.

1016 Allow For:

Complying with all requirements set out in this Specification.
All fabrication work, delivery, unloading, handling, hoisting, fitting and fixing in position and all cutting, notching, etc., welding and grinding off smooth and buffing up shop priming protective coatings and for submitting shop drawings and details for approval.
Preparation of metalwork as the Specification and shop prime painting including touching up coat on site.
Isolation of differing materials.
Provision of all samples and prototypes required.

1017 Cleaning

Clean all materials installed to the satisfaction of the Architect. Remove all temporary protective coatings.

1018 Completion

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

END OF SECTION

SECTION 1100 CARPENTRY, FRAMING AND FIBRE CEMENT CLADDING

PART I GENERAL

1101 Scope

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

Particular Work
- Primeline Weatherboard lining
- Framing to all partition walls
- Soffit Linings
- External FC cladding
- Villaboard cladding also refer Section 1300 and 1400
- Fixing of vehicle wheel stops
- Window sills and trims as required to Suite 2 and Retail only
- Roof lights
- Insulation
- Internal doors and door closers
- Cavity sliding door
- Snib locks, door furniture and locks and door hardware.
- Structural Plywood lining to awning soffits

1102 Reference Standards

Comply with the relevant Australian Standards for materials and workmanship.
FC cladding fixing and setting to manufacturer's detail and specification.

1103 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1104 Delivery, Storage and Handling

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.

1105 Warranty

Provide to the Owner a written warranty stating that all components of the complete installation of the above items and work shall remain intact and in a satisfactory condition for (5) five years from the date of Practical Completion.

PART II MATERIALS

1106 Schedule: Timber and Related Items

To relevant Australian Standards, including the following:
- All work to be in accordance with AS1720 and AS1684
- All external timber to be LOSP treated to Class H3
- All internal timbers to be LOSP treated to Class H2.
- All metal studwork to be in accordance with AS1397, AS1538 and AS3623 as applicable.

MATERIAL GROUP	SIZE
Wall Framing (Timber)	
Plate	90 x 45 F7
Studs	90 x 45 F7
Nogging	90 x 45 F7
Lintels	to suit opening size
Trimmers	90 x 45 F7
or equivalent steel framing	

Wall Framing (Steel)

All metal wall framing to be 64mm wide 'C' section metal studs (0.75mm BMT).

Stud Spacing

450mm crs for 900mm wide sheets
600mm crs for 1200mm wide sheets

Steel Bracing
Galvanised ms strapping

Fibre Cement Cladding:	Equal to Harditex 6.6mm with set joints. NOTE: Plastic Jointing strips will be rejected.
Soffit Lining:	Villaboard with set points NOTE: Plastic Jointing strips will be rejected.
Awning Soffit linings:	10mm Structural plywood
Insulation:	To walls and roof refer Finishes and Fixtures Schedule.
All other items:	Refer Finishes and Fixtures Schedule.

PART III EXECUTION

1107 Examination

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

1108 Installation General

Comply with: Applicable Australian Standard National Timber Framing Code, and other relevant standards.
Comply with manufacturers recommended methods of installation unless noted otherwise.

1109 Installation Particulars

Carpentry and Framing:
Perform all 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 all 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.
Fibre Cement:
Fix and set sheets to manufacturers specifications and recommended procedures. Provide backing rod approved sealant and batten cover to precast panel junction. Maintain flashings to roof.
On completion patch and sand all fixing holes and leave work suitable for painting.

1110 Substrate Preparation

Generally: Suitably prepare the substrate surface to receive the specified finish.

Cleaning Substrates: Remove oils, greases, retarders, loose material and the like and leave the surface dust-free and clean.

Substrates for Adhesives: Shall by dry, with a moisture content below 6% for concrete substrates and at equilibrium moisture content in the case of timber substrates. Artificially dry the substrate if necessary.

1111 Hardware

Install all door hardware as selected, listed and required in full compliance with the manufacturer's recommendations.
Adjust as needed to centre doors in openings.

1112 Finished Levels

Finished levels: Unless otherwise specified, maintain finished floor levels without step or break at changes of floor finish, including carpet or topping.

1113 Floor Finish Junctions

Location: Where changes of floor finish occur in doorways, make the junction directly beneath the closed door.

Dividing Strip: Insert a dividing strip the full width of junctions between different floor finishes, with the top edge 25 x 5mm brass strip flush with both the finished floors.
Dissimilar floor finishes must finish flush with one another in particular tiles in bathrooms to adjacent topped stair landings.

Fixing: Provide strips with wire ties and build into screed or braze on 25 x 5mm brass strip lugs and fix to sub-base so that strip is firm and top is level with floor finish.

1114 Protection

Protect finishes upon completion. Replace any loose or damaged work. If replacement cannot be made undetectable, relay the whole area affected. Keep loads or traffic off completed work at least until bonding has set.

1115 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1200 WINDOWS, DOORS AND GLAZING

PART I GENERAL

1201 Scope
Design, engineer, supply and install a complete glazed system of windows and doors as specified and shown on the Architectural Drawings, including glazing, hardware and accessories necessary for the satisfactory completion of the whole.

1202 Related Work
A. Prior Work by Others: Work in this Section depends upon the proper completion of prior work by others as follows:
Carpenter
Structural Steel
Masonry

B. Subsequent Work by Others: Work in this Section shall create conditions suitable for the proper completion of subsequent work by others as follows:
New Ceiling.
Finishing Trades.

1203 Quality Assurance
A. Manufacturer Qualifications: Not less than five (5) years continuous experience in the manufacture of the product types specified.

B. Installer Qualifications: Installer shall have not less than five (5) years continuous experience in the erection of specified material.

1204 References
Comply with relevant Australian Standards. Glass and Glazing shall be in accordance with AS 1288 and installer shall provide certification accordingly.

1205 Building Code of Australia
Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1206 Delivery, Storage and Handling
Handle all materials with care. Do not store on site. Install directly in place. Store sealants as instructed by manufacturer.

1207 Warranty
Provide to the Owner a warranty, counter-signed by the Installer, on the whole of the installation, which states that all work shall remain intact, waterproof and fully operational for the period of five (5) years after date of installation and not less than five (5) years after date of Practical Completion.

PART II MATERIALS

1208 Acceptable Manufacturers
Manufacturer to have at least five (5) years trading.

1209 Materials
Window and Doors Frames: Refer Finishes and Fixture Schedule.

Confirm overall dimensions for frames, sashes and component section sizes including their shape and profile with the Architect prior to fabrication.

1210 Structural Criteria

A. Confirm Terrain Category and refer applicable Australian Standard.

B. Wind Loading Design:

1. Glazing and frame assemblies to suit the static and dynamic wind forces as indicated in the relevant Australian Standard.
2. Structural members of glazed units of such strength that when tested at the specified design wind values they do not deflect by an amount greater than span/240 and do not cause permanent deflection.
3. Fix members so that the above loading is generated in the members without stress causing failure or movement becoming evident at any joint.

C. Movement: Permit free and noiseless movement of all the components due to thermal effects, structural effect, wind pressure, effect of dead loads, without strain to glass, without buckling of components and without excessive stress to any members or assemblies.

D. 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.

E. Distortion: Design the glazed assembly to minimise visual distortion of reflected images.

1211 Detail Design Provisions

A. General: The drawings are to be considered essentially schematic except for profiles of exposed surfaces and panel arrangement where indicated. If, in the opinion of the Contractor 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 any member, or 6mm in any total run in any line.
2. Deviation from theoretical position on plan or elevation, including deviation from plumb, level or dimensioned angle not to exceed 9mm total at any location.
3. Change in deviation not to exceed 3mm for any 3.5m run in any direction.

1212 Finish

All metal of windows, doors and shop fronts powdercoated to selected colour.
Minimum coating thickness of 25 microns subjected to random testing after installation.
Remove and replace any non-conforming material.

1213 Glass

A.	Glass materials	:	Refer Finishes and Fixture Schedule.
B.	Sealants	:	Dow Corning, Selleys, Tremco (Pabco) Expandite, Unisil.
C.	Calculations	:	Calculate all glass sizes and thicknesses in accordance with standards, and fixing devices and connections to structure in accordance with Engineer's computations where applicable.

1214 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 relevant Australian Standard. 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, samples of materials receiving the silicone, including elastomeric sealants shall be evaluated by the silicone sealant manufacturer for compatibility and primer selection. The submitted materials shall be clearly identified as to manufacturer and product number.
Silicon sealants generally shall 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 must 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: Poly isobutylene tape of type, thickness and width as recommended by glass manufacturer.

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.

1215 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 shall be visible on exposed faces. Any fixings which must be exposed shall be notified to the Architect.
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

1216 Examination

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

1217 Preparation

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

1218 Frame Anchorage

Fabricator is required to supply the anchorage devices to the Contractor for building in by others and check that all devices are located as required to suit the requirements of window frame 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 any concrete or masonry damaged during the installation of masonry anchors at no cost to the Owner.

1219 Frame Installation

Comply with the relevant Australian Standard.

1220 Glazing

Secure all glass in accordance with glass manufacturer's recommendations and relevant Australian Standard. Allow for thermal expansion of glass, the timber framing and spandrels.

1221 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. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous and glazed joint surfaces if recommended by sealant manufacturer.

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

1222 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. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength internal cohesive strength and surface durability.

Advise Architect of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of Practical Completion.

E. 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 all cartons and debris from site as the work progresses.

1223 Protection

A. Framing System: Protect timber 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 Owner.

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

1224 Cleaning

A. Remove all 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 all rubbish and debris resulting from glazing operations, each day.

1225 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1300 PLASTERBOARD AND VILLABOARD

PART I GENERAL

1301 Scope

Supply and install a complete installation of plasterboard and villaboard as specified and shown on architectural drawings and schedules.

1302 Related Work

Close co-ordination is required with installers of suspended ceilings, electrical and other services.

1303 References

Comply with relevant Australian Standards.

1304 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1305 Delivery, Storage and Handling

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

1306 Warranty

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

PART II MATERIALS

1307 Acceptable Manufacturers

CSR "Gyprock" Plasterboard.
Building Materials, for "Gyprock";
Rondo Building Services Pty. Ltd., for metal sections, angles and shadowlines as detailed.
James Hardie Building Products for "Villaboard".

1308 Materials

Supply materials in accordance with material supplier's recommendations for each application.
Walls and Window Reveals: 10mm thick plasterboard all set jointed.

Wet Areas:		
Ceilings:	9mm Villaboard	
Walls:	Hardies new Villaboard	- 6mm for 450 stud crs - 9mm for 600 stud crs

NOTE: all set jointed.

PART III EXECUTION

1309 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 any work means total acceptance of all conditions.

1310 Preparation

A. Co-ordinate with and ensure all 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 all 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.

1311 Layout and Tolerances

A. Dimensions of all areas and surfaces to which material is applied are to be checked on the job before installation begins.

B. Measure each area and establish layout pattern.

C. All finished work shall be within + 2mm of the sizes shown on the relevant drawings.

1312 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.

1313 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.

1314 Protection

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

1315 Cleaning

A. Adjust and Clean: Clean exposed surfaces including trim, edge mouldings, 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 evidence of damage.

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

C. Leave floors broom clean at completion.

1316 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1400 SUSPENDED CEILINGS

PART I GENERAL

1401 Scope

Supply and install a complete system of suspended ceilings including but not limited to:
Villaboard Ceilings to:

- Patient WC
- Staff locker room
- Staff shower
- Staff WC
- Disabled WC
- Light Court

1402 Related Work

Roof Framing - Structural Steel
Mechanical Services
Masonry
Plasterboard and Villaboard
Carpentry

1403 Quality Assurance

Sub-contractor shall have not less than three years of successful experience in installation of ceilings similar to requirements for this Project and who is acceptable to manufacturer of each ceiling type.

1404 References

Comply with applicable portions of the relevant Australian Standards, current editions.

1405 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1406 Delivery, Storage and Handling

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.

1407 Warranty

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

PART II MATERIALS

1408 Acceptable Manufacturers

The following are acceptable manufacturers:

A. Suspension System
'Rondo' Building Services Pty Limited

B. Villaboard by Hardies

1409 Materials

Refer Finishes and Fixtures Schedule.
NOTE: all sheets to be set jointed at junction between wall and ceiling.

1410 Accessories

Supply and install all necessary accessories as indicated by component manufacturer for satisfactory and complete installation.

1411 Equipment

Supply all equipment, forms, scaffolding, ladders, frames, etc., necessary for the satisfactory installation of all specified items.

PART III EXECUTION

1412 Examination

Acceptance: Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site. Rectify any unsuitable situation. Start of any work means total acceptance of all conditions. Comply with referenced standards and manufacturer's recommendations regarding environmental conditions.

1413 Preparation

Space Enclosure: Do not install interior ceilings until space is enclosed and weatherproof, and until wet-work in space is completed and nominally dry, and until work above ceilings completed, and until ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

Protect all wood, metal, glass, flooring and other finished work during progress. Any damage shall be made good in every respect at no additional cost to the Owner.

Prepare all areas and surfaces against which installation will be constructed. Ensure all work by other trades is completed before erecting suspension system.

1414 Installation

Comply throughout with relevant Australian Standards and with the data sheets supplied by material manufacturer.

1415 Field Quality Control

When requested by Architect, arrange for manufacturer's representative to visit site and check installation.

1416 Adjustment

Adjust installation to permit installation of such items as light fittings, mechanical vent registers and the like.

1417 Protection

Protect completed installation from any possible damage until issue of Practical Completion Certificate.

1418 Cleaning

Clean all surfaces exposed to view. Replace any sections or components which cannot be cleaned. Make good damaged sections or panels affected by later work of other trades.

1419 Completion

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

END OF SECTION

SECTION 1500 PAINTING

PART I GENERAL

1501 Scope

Supply all labour and materials, services and equipment necessary for the preparation, application and finishing of all painting and staining as indicated on architectural drawings, schedules and as specified herein, to internal and external surfaces of building.

1502 Related Work

1. All substrates to be painted
2. Cleaning and finishing
3. Co-ordinate with other trades in the use of scaffolding.

1503 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 shall be construed as accepting the paints specified. Sub-Contractor shall correct, at his own expense, any defects in his work resulting from the use of such materials.

1504 References and Standards

Comply with relevant Australian Standards.

1505 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1506 Delivery, Storage and Handling

A. Store materials in designated spaces in a manner which meets the requirements of applicable codes and fire regulations.

B. Bring all 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.

1507 Project Conditions

Temperature: Comply with the requirements of both Australian Standards and of paint manufacturers with regard to both ambient temperature and relative humidity.

1508 Warranty

Provide to the Owner a written Warranty stating that preparation of surfaces, materials and material application installed under this contract shall show no deterioration and remain in good condition for a period of five (5) years from date of Practical Completion.

PART II MATERIALS AND PRODUCTS

1509 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.

All paints and finishes used for the project shall be manufactured by one or more of the following manufacturers:

1. Murobond
2. Dulux
3. Wattyl

Other products may be approved by Architect.

Provide all materials necessary for preparation of surfaces, and for application of all paint finishes.

Allow two or three finished coats to all surfaces as recommended by manufacturer for specific paint colours.

All junctions and edges of paintwork shall be cut in and masked where necessary to provide crisp, straight edges. Unsatisfactory work will be rejected.

1510 Paints

Refer Paint Schedule.

Primers and Undercoats: Comply with recommendations of relevant Australian Standards for primers, sealers and undercoats applicable to each paint finish.

1511 Priming Materials

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

PART III EXECUTION

1512 Examination

Inspect all surfaces and determine that they are in proper condition to receive the work to be performed under this Section.

The starting of work under this Section will be construed as acceptance of such surfaces as being satisfactory and any defects in work resulting from accepting poor surfaces shall be corrected at no cost to the Owner.

1513 Preparation

A. General: Prepared to a standard not less than that described in relevant Australian Standard.
This applies to the work below to the same extent as if written herein.

B. Broom clean all 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 shall have putty coloured to match. Putty wood after prime coat or sealer coat has been applied.

D. Allow to fill with epoxy filler all external substrates to achieve even finish with texture coat.

E. Clean bare metal surfaces of all 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.

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

G. Rub down all 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. All surfaces to receive paint shall be smooth and free of all sandpaper scratches, mill-marks, and other imperfections.

H. 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 Contractor.

I. 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.

1514 Protection

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

1515 Application

A. General: Execute all work of this Section in strict compliance with paint manufacturer's recommendations, and with the provisions of relevant Australian Standard. In the event of conflict between manufacturer's recommendations and the provisions of relevant Australian Standard, manufacturer's recommendations shall govern.

1516 Clean-Up

At completion of work in each area, remove all paint spots, oil and stain from all adjacent surfaces, including Finish Hardware. Replace hardware previously removed.

1517 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1600 ELECTRICAL INSTALLATION

PART I GENERAL

1601 Scope

The work of the Section includes but is not limited to the design, supply and installation of electrical transmission and reticulation materials from the mains supply to all parts of the building site and connection for:
New underground mains gabling to new switchboard
New main switchboard and meters for each individual tenant including house metering
New Distribution Board
Power
Lighting including exit signs and emergency lights
Ventilation fans
Hot Water Service
Air conditioning and mechanical plant
Smoke detectors

Core Holes required are the responsibility of Subcontractor.

1602 Related Work

Floor Construction
Wall Construction
Ceiling Construction
Concrete
Masonry
Plasterboard

1603 Quality Assurance

A Licensed electrical technicians only may perform work, experienced in the requirements of the project. Licenses shall be those issued by the State Authority having direct control or interest in the work.

B The entire installation shall be performed in accordance with the requirements of the Statutory Authority having jurisdiction.

1604 References

Comply with relevant Australian Standards.

1605 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1606 Submissions

On request of the Architect or Contractor, submit for approval any item related to the installation, including: data sheets on materials; wiring diagrams - plans; samples of products; licence certificates; and obtain written approval of each item so requested.

1607 Delivery, Storage and Handling

Allow for delivery to site, unloading and storage in a secure area, in accordance with manufacturer's instructions where applicable.
Prevent damage, deterioration and loss.

1608 Warranty

Provide to the Owner a warranty covering all aspects of this Trade Section, for a period of not less than 12 months from the date of Practical Completion.

1609 Fees and Notices

Be responsible for paying fees, submitting notices to Supply Authority. Arrange for inspections by Authority Inspector and obtain final certificate.

PART II MATERIALS

1610 Acceptable Manufacturers
All products shall bear the required indication of approval of the Statutory Authority having jurisdiction.

1611 Materials
Refer Finishes and Fixtures Schedule.

1612 Fabrication
All components manufactured off-site shall be compatible with the requirements of the project and to Architect's approval.
Refer to Architect for special or standard finishes of components where any item will be exposed to view after installation.

1613 Source Quality Control
Where Supply Authority requires, submit data relating to manufactured components in the form of:

A. Test Reports
B. Certificates issued following inspection of products
C. Verification of Performance Statement

PART III EXECUTION

1614 Examination
Commencement of installation shall be construed as unqualified acceptance of site conditions as suitable for the work of this Section.
Request rectification of existing work or preparation of additional or new work by Contractor where necessary to facilitate electrical installations.

1615 Preparation
Provide all necessary safety or security controls where required to ensure safe practices and installations.
Prepare any surface or framing to facilitate installation.

1616 Installation
Comply with all Regulatory requirements relating to installation methods and systems.
All installations shall be within the Regulatory maximum loads and tolerances.

A Chases
Form chases, in co-operation with Contractor, where necessary in any structural items within limits set by Contractor. Should the chasing of load bearing elements be necessary the Engineer is to be contacted and their instructions obtained before proceeding with the work.

B Cable
Secure all cable at centres recommended by Regulations and/or manufacturer.

C All wiring and cable equipment shall be concealed. Conduit all cable where necessary or required in approved material. Exposed conduits to be approved by Architect.

D The lighting outlets, switches & dimmers and power outlets shall be installed in position, the exact position to be as directed by the Architect on site.

1617 Field Quality Control
A Manufacturer
Where requested by Supply Authority supply test data obtainable from component manufacturer.

B Arrange for inspections by component manufacturer's representative to ensure correct application, use and installation.

1618 Adjusting and Cleaning
Adjust installations of all visible components to ensure proper fit and alignment.
Remedy all items of inefficient operation or of doubtful performance.
Clean all visible installed items to original condition.
Remove all debris from installation in concealed spaces.

1619 Protection

Protect all installed items from damage from any source until Practical Completion.

1620 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1700 TILES

PART I GENERAL

1701 Scope

Supply and install all Tile work including but not limited to:

1. Preparation of all surfaces before tiling or bedding
2. Bedding screeds where required
3. Wall tile
4. Floor tile
5. Cleaning of all finished tiled surfaces.

1702 Related Work

Wall Construction; floor construction.

1703 Quality Assurance

A. Qualifications: Tiling Sub-contractor to submit to Contractor evidence of reliability in quality of work and performance.

B. Samples: Provide samples of all 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 shall become the standard for the balance of the work, and remain as part of the completed work.

1704 References

Comply with relevant Australian Standards.
Waterproofing to wet areas to be in accordance with AS 3740.

1705 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1706 Delivery, Storage and Handling

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

1707 Warranty

Provide to the Owner a warranty covering defects in materials and installation for a period of five (5) years from the date of Practical Completion.

PART II MATERIALS

1708 Screed and Setting Bed Materials for Masonry Walls, Concrete Floors

A. Cement: Portland Cement, comply with relevant Australian Standard.

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% max.

C. Fine Sand (for jointing): As above, except that 100% shall pass a No. 100 (150 microns) sieve.

D. Aggregate for Screeds: Shall be dense aggregate complying with relevant Australian Standard, 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 diam. wires at 100mm centres each way.

1709 Adhesives

Wet Area Adhesives: Cement-based ceramic tile adhesive, one of the following:
"Grey Label" as manufactured by W.R. Grace Australia
"CTF Wall" as manufactured by ABA Pty. Ltd.

Exterior Adhesive: Cement based tile adhesive:
"ABA Abalastic system" as manufactured by ABA Pty. Ltd.

1710 Underlay and Backing Boards

A. Underlay over timber floors: Hardies Ceramic Tile Underlay or similar approved.

B. Ceramic Tile Wall-backing for stud walls:
1. Hardies New Villaboard - 6mm for 450 stud centres -9mm for 600 stud centres

C. Fastenings: Use fastenings supplied by material manufacturers in all cases.

1711 Grout

Prepared Grout: Inorganic Portland cement integrated, ready-to-use, dry- curing grout, equal to products manufactured by Australian Building Adhesives Pty. Ltd. Colours shall be as selected by Architect.
Supply Water resistant grout for all tiling.

1712 Expansion Joints

Silicone rubber, as recommended by manufacturer. Colour to Architect's selection.

1713 Tiles

Refer to Finishes and Fixtures Schedule

PART III EXECUTION

1714 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 any work means total acceptance of all conditions.

1715 Conditions of Installation

A. 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.

B. Rectify substrate so that when checked with a 2m straightedge, any gap under the straightedge does not exceed 6mm.

C. 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.

1716 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 all surface-mounted items. Fall to floor wastes.

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 5 mm minimum. Fill expansion joints with silicone rubber.

C. Control Joints
Provide control joint at junctions of dissimilar wall construction.

1717 Bedding and Screed Mixing

A. Tile fixing mortar shall be adequately cohesive and water retentive but shall not be 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 shall be 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. Any mortar unused within 2 hours of adding the mixing water shall be discarded.

1718 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 1 part cement to 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 shall preferably be 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. Occasional similar checks shall be made throughout the tiling work. The whole of the back of the tile must be in good contact with the adhesive. No voids must occur beneath tiles.

5. Remove any 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
Protected from weather, water penetration, etc. during this period.

1719 Installation: General

A. Wall tiling: Comply with the recommendations of relevant Standard.

B. Floor tiling: Comply with the recommendations of relevant Standard.

C. Adhesives: Comply with relevant Australian Standard and recommendations of adhesive manufacturer.

1720 Tolerances and Cleaning

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

B. Cleaning: Cleaned down using a damp cloth before any 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 shall not be appreciably different from the ultimate permanent lighting.

1721 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, 1 part Portland cement to 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.

1722 Protection

Prevent walking on or contact with floor or wall tiles for a minimum of seven days. During that period, cover floor tiles and tape off access to tiled rooms or erect temporary barrier with warning sign.

1723 Completion

Complete all contracted work in accordance with contract documents and instructions issued by the Contractor or the Architect.

END OF SECTION

SECTION 1800 STRUCTURAL STEEL

PART I GENERAL

1801 Scope of Work

Supply, fabricate and install a complete structural steel system including but not limited to: All steelwork shown on the Architect's or 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.
Erection of all the steelwork shown on the Architect/Engineer's drawings includes off-loading, erection, field welding, making steel to steel connections, connection to anchor bolts, permanent grouting and repairs to surface treatment.

NOTE: Engineer's specification and documentation takes precedence over architectural documents.

Under no conditions scale drawings. Notify Architect of any omission or conflict between Architectural drawings and Structural Engineer's drawings.

1802 Related Work

Windows, Doors and Glazing
Masonry
Concrete
Roofing

1803 Quality Assurance

Do all work in accordance with all the drawings and specifications which form part of this contract, and any further details and/or instructions issued by the 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.

1804 References

Conform to relevant Australian Standards.

1805 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1806 Handling, Delivery to Site and Storage

Handle and store materials by methods and appliances that will not over-stress or deform the members. Separate all 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

1807 Materials

General:
Supply all 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 relevant Australian Standard - ordinary weldable grades, Grade 300. Other types and grades of steel shall not be used without written approval.

1808 Shop Drawings

Provide to the Architect and Engineer two sets of complete Shop Drawings for all required components for approval minimum two weeks prior to commencement of fabrication.

1809 Fabrication

Fabricate finish in accordance with relevant Australian Standard.
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.

1810 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 relevant Australian Standard.

B. Bolting General

Supply bolts in bearing of such lengths that no threaded portion shall cross 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 relevant Australian Standard.
Do semi-automatic welding in accordance with relevant Australian Standard.

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 all necessary information to the Steel Fabricator.

1811 Hot Dip Galvanising

Where scheduled or specified galvanise steel after chemical descaling in accordance with relevant Australian Standard, so that all 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 of 100 microns. Allow a 48 hour curing period before transporting steelwork.
Reinstate all transport and erection abrasions, site welds, etc., by thoroughly wire brushing all affected areas to achieve a clean sound substrate and patch coating with an inorganic zinc silicate film thickness of 100 microns.

1812 Surface Treatment of Steel

Clean steelwork free from all loose rust, loose mill scale, dirt, oil and grease or by sand-blasting - Class 2.5, and apply a coat of inorganic zinc silicate, 100 microns thick. Refer relevant Australian Standard.

1813 Inspection Before Delivery

All 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

1814 Examination

Inspect site conditions both before fabrication and delivery of steel.
Ensure that on delivery, all materials can be directly installed.
Report discrepancies immediately they are found and instruction obtained before continuing with the affected portion of the work.
Start of any work means total acceptance of all conditions.

1815 Erection

Comply with relevant Australian Standard.
Adopt an erection procedure such that all members can be placed and fixed in position without distortion.
Make safe, during erection, against wind and all erection stresses and loading conditions, including those due to erection equipment.
Allow for the cost of temporary erection bracing required and any of the Engineer's requirements in connection with such bracing.

1816 Inspection on Site

Advise Engineer when erected steel is ready for inspection.

1817 Adjustments

Following erection, adjust the installation as required by Engineer.
Touch up abraded or missing paint areas with inorganic zinc silicate paint.

1818 Cleaning

Clean the installed steelwork and touch up paint with inorganic zinc silicate of matching colour.

1819 Completion

Complete all contracted work in accordance with contract documents and written instructions issued by the Engineer, Contractor or Architect.

END OF SECTION

SECTION 1900 MECHANICAL SERVICES

1901 Generally

The work to be undertaken by the mechanical services sub-contractor shall be as shown and specified on the mechanical services documentation.

Briefly, the work shall comprise:

1. Mechanical exhaust ventilation system to all toilets, shower and locker rooms via ducting to external areas.
2. Air conditioning unit including ducting, grilles, thermostats etc. to Suite 1.
3. Subcontractor is responsible for all overflashings at roof penetrations relating to this trade.
4. Plant and platforms on roof

1902 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

1903 Authorities

Mechanical contractor to ensure plant equipment to conform with all requirements of Sate and local authorities

1904 Noise Generation

Maximum noise level in other than plant room or unoccupied utility rooms not to exceed 40dB(A)

1905 Work by Contractor

1. Provision of electrical submains adjacent to the air conditioning equipment.
2. Penetration and making good of walls or floors for the passage of ducts and mounting of grilles, pipes or conduits.
3. Boxing or furring in of exposed ducts, pipes or conduits as required.
4. Trapped condensate, drainage point to sewer within 3 metres of equipment.
5. Interconnection and provision of power wiring to mechanical ventilation units.
6. Permanent access for maintenance and servicing.
7. Any painting or decorating works as required.
8. Interconnecting and control wiring of mechanical systems.
9. Construction of roof top platforms for all units.
10. Balancing of system after Suite 1 tenancy fitout complete

1906 Warranty

Provide to the Owner a warranty covering defects in equipment and/or workmanship for a period of one (1) year from the date of practical completion or commissioning whichever is the latter.

Provide to the Owner the manufacturers warranty covering the equipment of parts and labour for a period of two (2) years from the date of practical completion or commissioning whichever is the latter.

END OF SECTION

SECTION 2000 LANDSCAPING

PART I GENERAL

2001 Scope

Supply and install a complete installation of landscaping in accordance with the landscape drawings and details including but not limited to:
Soil preparation
Subsoil drainage systems
Topsoil supply and spreading and preparation
Ground covers, aggregate, wood chip, mulch etc.
Trees, shrubs, plants, plant support (temporary)
Fertilising and watering
Pavements - on site
Planters
Plants
Maintenance

2002 Related Work

Site work
Drainage

2003 Quality Assurance and Inspection

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

2004 Building Code of Australia

Class of Building is Class 5 and/or 6.
Construction shall be carried out in accordance with the "Deemed-to-Satisfy Provisions" of the Building Code of Australia.

2005 Submissions

Submit data on sources of all plant materials and manufacturers of other components.
Submit to Architect maintenance instructions for all plant and other materials required by this Specification.

2006 Delivery Storage and Handling

Arrange with Contractor for dates of delivery and installation of specified materials, completion of installation and maintenance arrangements.
Whenever possible, plants shall be planted immediately after delivery to the site. If this is not possible keep them in good condition by appropriate storage methods, and as may be directed. Prevent theft, drying out and damage from all causes including wind, sun, vermin, animals and the like. Provide an on-site nursery for holding plant stock on site for more than 48 hours, of sufficient size, with provision for watering.

2007 Project Conditions

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

2008 Warranty

Provide a warranty to the Owner that all materials which fail within a period of one year from the date of Practical Completion will be replaced without cost providing maintenance is carried out as contracted, where maintenance is not performed by this contractor.

2009 Maintenance

Provide an agreement form to be submitted to Owner offering regular maintenance of the entire installation for 52 weeks from date of practical completion including the details of the precise activities of maintenance offered.

PART II MATERIALS

2010 Acceptable Manufacturers

Submit for approval names of manufacturers of proposed materials and sources of all live materials.

2011 Topsoil

Refer Landscape Drawings.

pH of soil must be within the range of 6 to 7.

Peat Moss: Peat shall be Australian Sedge peat moss (horticultural grade) free from salt, grass, weed growth of any kind and toxic materials, with a spongy fibrous texture, a high porosity, with high water retention.

Coarse Sand: Coarse Sand shall be double washed free from weed growth, silt, clay and toxic materials. Particle size coarse sand shall range from 3.0 to 0.5 mm. Salt content 600 ppm.

Graded Ash: Graded Ash (horticultural grade) shall be granulated, particle size 3 to 8 mm in size, free from toxic materials detrimental to plant growth, pH range between 6.0 to 7.0 Salt content 600 ppm.

2112 Fill Material

Location: Planter boxes and where noted on drawings.

Definition: Fill material beneath Topsoil Mix and Imported Topsoil shall be soil that drains freely, has a neutral pH value and will support health plant growth.

Fill materials shall not be Contractors rubble and rubbish, clay, boulders and rocks, noxious substances or the like.

2113 Plants

Refer Plant Schedule in Landscape Drawings.

Definition: Plants shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease and insect pests, with large healthy root systems and no evidence of having been restricted or damaged. Trees shall have a single leading shoot.

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

2114 Fertiliser

Supply: Deliver fertiliser to the site in sealed bags, branded with the type and manufacturer's name.

Material: Fertiliser shall mean:

Trees:	21 gram Agriform Pellets
Garden Beds and Planters:	9 month slow release pellets

2115 Mulch

Location: All planter boxes, in-ground garden beds, and individual trees and shrubs.

Definition: Mulch shall be Pine Bark Horticultural Grade 15mm, free of deleterious and extraneous matter including soil, weeds, rocks, twigs and the like as supplied by Australian Native Landscapes Pty Limited.

2116 Timber Stakes

Material: Hardwood stakes with one sharp end supplied by All Stake Supplies Co. Pty Limited.

2117 Stakes and Ties

Stakes: Durable hardwood, straight, free from knots or twists, pointed at one end.

Drive stakes 600mm into the ground on the windward side of the plant, either before the plant is placed, or in such a manner as to avoid damage to the root system. Final position to be vertical and even height.

Sizes:

200 Litre Trees: 50 x 50 x 2400 mm stake, 2 stakes per tree.

5 Litre Trees: 25 x 525 x 2000 mm stake, 2 stakes per tree.

Ties: 50mm hessian webbing. Staple fix ties securely to stakes in a figure-of-eight pattern, with the first tie 300mm above ground. Other ties where necessary to stabilise the plant, or as directed.

PART III EXECUTION

2118 Examination

Inspect site conditions, comparing conditions to Drawings, before delivery of any materials or performing any required work.
Start of any work means total acceptance of all conditions.

2119 Preparation

Prepare all live materials in advance of installation to ensure satisfactory performance and growth rate after planting and/or placement at project site.
Co-ordinate with other trades to prevent delays.
Prepare all surfaces for landscaping including drainage treatment, planter liners etc.

2120 Installation

Comply with instructions of manufacturer and suppliers where applicable, and with Project Schedule. Make connections with the work of others where applicable by arrangements made through Contractor.
Cause minimum disturbance to any existing installations or planting.
Make good any damage caused by work of this Section.

2121 Placing Topsoil

Placing: Place Topsoil Mix in the locations and to minimum depth of 750mm or as shown on the Drawings. Spread and grade evenly.

Place Topsoil Mix in 100mm stratas and lightly compact to minimise latter subsidence and the finished surface is smooth, free from lumps of soil, at the required levels, ready for planting.

If subsidence should occur, add Topsoil Mix of the type specified to achieve design levels.

Ensure that a minimum of 750mm of Topsoil Mix and 75mm of mulch can be spread leaving the finished level of the mulch 25mm below the paving level or top of wall whichever the case.

2122 Protection

Protect all installations from damage by human or other cause.
Maintain tree guards and plant stakes and replace protection if necessary until plants are fully established.
Replace any defective, damaged or failing plants or equipment during the maintenance period.

2123 Watering

Watering is a crucial maintenance item and to avoid under or over watering the Contractor will be responsible to replace, at his cost, all failed plants and turf.

2124 Cleaning

Remove all debris and clean all areas disturbed or affected by the work.

2125 Completion

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

END OF SECTION

TAX INVOICE

ORIGINAL RECEIPT