

19 June 2013

General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

Dear Sir/Madam,

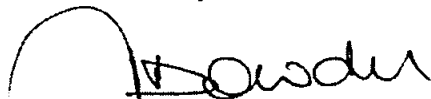
Development Application No. N0081/12 – 4 Elouera Rd, Avalon Beach

For Council's information, please find enclosed Construction Certificate No. 2013/5060 issued for Alterations and Additions to the Existing Dwelling at the above address, accompanied by:

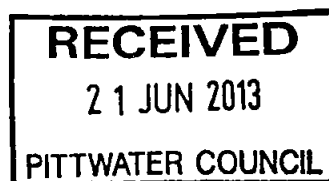
- Copy of Construction Certificate application form
- Notice of Commencement of Work and Appointment of Principal Certifying Authority
- Home Warranty Insurance Certificate
- Cheque for \$36.00 being the prescribed fee to receive the above certificate.

NB: Please forward receipt for the above fee to **Insight Building Certifiers Pty Ltd, PO Box 326, Mona Vale 1660.**

Yours faithfully



Tom Bowden
Insight Building Certifiers Pty Ltd



\$36 REC: 342732 21/6/13

Construction Certificate Determination

issued under the Environmental
Planning and Assessment Act 1979
Section 109C (1) (b), 81A (2) and 81A (4)

Certificate No. 2013/5060

Council	Pittwater
Determination Date of issue	Approved 19 June 2013
Subject land Address Lot No, DP No.	4 Elouera Road, Avalon Beach Lot 108 DP 9151
Applicant Name Address Contact No.	Mr Michael Burkin & Ms Andrea Ballmer 4 Elouera Road, Avalon Beach NSW 2107 9486 4614 / 0419 139 473
Owner Name Address Contact No.	Mr Michael Burkin & Ms Andrea Ballmer 4 Elouera Road, Avalon Beach NSW 2107 9486 4614 / 0419 139 473
Description of Development Type of Work	Alterations & Additions to the Existing Dwelling
Builder or Owner/Builder Name Contractor Licence No/Permit	Construct Central Coast Pty Ltd 221306C
Value of Work Building	\$769,513.00

Attachments

- Copy of completed Construction Certificate Application Form
- Long Service Levy Corporation receipt no. 00138806 dated 30 May 2013
- BASIX Certificate no. A130210 dated 21 December 2011

Plans & Specifications certified

The development is to be carried out in compliance with the following plans and documentation listed below and endorsed with *Insight Building Certifiers* stamp.

- Architectural Plans & Construction Specification reference no. 2011_04, drawing no's. A-0000, A-1000, A-2101, A-3100, A-3200 & A-3201 (Issue B), prepared by Walter Barda Design dated 21 May 2013
- Structural Details, including Stormwater Details, reference no. 62301, drawing no's. S00, S01, S02, S03, S04, S05, S06, S07, S08 & S09 (all Revision A) accompanied by a Structural Design Compliance Statement & Stormwater Design Compliance Statement, all prepared & endorsed by Paul Bekker Engineering Design Buro Pty Ltd dated 8 March 2013
- Structural Adequacy Certificate reference no. PB/bm 62301 prepared & endorsed by Paul Bekker Engineering Design Buro Pty Ltd dated 8 March 2013
- Sediment & Erosion Control Details reference no. 62301, drawing no. SE1 (Revision A), prepared & by Paul Bekker Engineering Design Buro Pty Ltd dated 8 March 2013
- Completed Form 2 (Parts A & B) of Pittwater Council Geotechnical Risk Management Policy, endorsed by Paul Bekker Engineering Design Buro Pty Ltd dated 23 May 2013 & Geoenviro Consulting Pty Ltd dated 21 May 2013, respectively
- Sydney Water approval dated 7 January 2013

Certificate

I hereby certify that the above Plans, documents or Certificates, satisfy:

- The relevant provisions of the Building Code of Australia
- The relevant conditions of this Development Consent

and that work completed in accordance with the documentation accompanying the application for this Certificate (and any modifications as verified by me and shown on that documentation) will comply with the requirements of the Environmental Planning & Assessment Regulation referred to in Section 81A(5) of the Environmental Planning & Assessment Act, 1979.

Signed


19 JUN 2013

Date of endorsement
Certificate No.

2013/5060

Certifying Authority

Name of Accredited Certifier
Accreditation No.
Accreditation Authority
Contact No.
Address

Tom Bowden
BPB0042
Building Professionals Board
(02) 9999 0003
13/90 Mona Vale Road, Mona Vale NSW 2103

Development Consent

Development Application No.
Date of Determination

N0081/12
18 December 2012

BCA Classification

1a

INSIGHT

building certifiers pty ltd

29 MAY 2013

Construction Certificate ☒Modified Construction Certificate ☐

BY:

APPLICATION FOR A CONSTRUCTION CERTIFICATE

Environmental Planning and Assessment Act 1979 & Environmental Planning and Assessment Regulation 2000

Description of Building Work

Alterations and additions to the existing dwelling #

Estimated cost of work

\$769,513 —

BCA Classification(s)

1a

Development Consent Reference no.

N0081/12

Date of Issue

18 December 2012

Modified Consent Reference no. (If applicable)

—

Date of Issue (If applicable)

—

Property Address

Unit/Street no.

4

Street name

ELOUERA ROAD

Suburb

AVALON BEACH

Post code

2107

Lot no.

108

DP no.

9151

Accompanying Documents

- Appropriate Architectural Plans and Specifications
- All information required by Part 3 of Schedule 1 Forms of the Regulation (see over)

I/We, the owner/s of the abovementioned property, hereby make application to Tom Bowden/Heath McNab of Insight Building Certifiers Pty Ltd ('Insight') for a Construction Certificate for the building work described above and, in doing so, I/we also declare that the documents provided and asserted by me as a copy of a development consent and incorporated plans are a true copy of same as issued by the relevant consent authority or the Land and Environment Court.

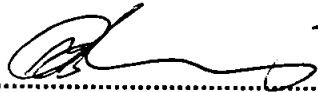
Owner 1 Name:

MICHAEL BURKIN

Owner 2 Name:

Andrea Ballmer

Owner's Signature:



Owner's Signature:



Date:

24/1/2013

Date:

24/01/2013

Owner's Address:

4 ELOUERA ROAD, AVALON BEACH NSW 2107

Daytime Telephone:

(02) 9486 4614

Mobile:

0419 139 473

[Office Use Only]: Date received by Accredited Certifier:



12 June 2013

M. BURKIN & A. BALLMER
4 ELOUERA RD
AVALON BEACH NSW 2107

Long Service Corporation
Level 1
19-21 Watt Street
Gosford NSW 2250
Locked Bag 3000
Central Coast MC NSW 2252
Tel: 13 14 41
Fax: (02) 9287 5685
Email: info@longservice.nsw.gov.au
www.longservice.nsw.gov.au
ABN 93 646 090 808

As per your request for a copy of your receipt no. 00138806 dated 30 May 2013,
the following information is provided:

Received from: (Name of person or organisation paying for levy)	the amount of
M. BURKIN & A. BALLMER	\$2,693.00

Payment details:

Cheque 001014 \$2,693.00 M J BURKIN & A F BALLMER

being payment for Long Service Levy as detailed below

Levy Payment Form number	0326568
Council/Department/Authority	PITTWATER COUNCIL
D.A. Number	N0081/12
Work address	4 ELOUERA RD AVALON BEACH NSW 2107
Estimated value of work	\$769,513.00
Levy payable (No exemption)	\$2,693.00
Total levy paid	\$2,693.00
Credit Card Surcharge (non-refundable)	\$0.00
Total Amount Paid	\$2,693.00

Signed:

Form 1317-LS Date 12/06/2013
Forms part of
Construction Certificate
no 2013 / 5060



BASI® Certificate

Building Sustainability Index www.basix.nsw.gov.au

Alterations and Additions

Certificate number: A130210

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Alterations and Additions Definitions" dated 29/9/2006 published by Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Wednesday, 21, December 2011

To be valid, this certificate must be lodged within 3 months of the date of issue.



This plan / document
forms part of
Construction Certificate
no. 2 0 1 3 / 5 0 6 0

Project address	
Project name	Burkin residence
Street address	4 Elouera Road Avalon 2107
Local Government Area	Pittwater Council
Plan type and number	Deposited Plan 9151
Lot number	108
Section number	0
Project type	
Dwelling type	Separate dwelling house
Type of alteration and addition	My renovation work is valued at \$50,000 or more, and does not include a pool (and/or spa).

Certificate Prepared by (please complete before submitting to Council or PCA)	
Name / Company Name: Walter Barda Design	
ABN (if applicable): 48 072 136 513	

Fixtures and systems		Show on plans	Show on site/ on plans	Compliance
Hot water				
The applicant must install the following hot water system in the development: gas instantaneous.		✓	✓	✓
Lighting				
The applicant must ensure a minimum of 40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or light-emitting-diode (LED) lamps.			✓	✓
Fixtures				
The applicant must ensure new or altered showerheads have a flow rate no greater than 9 litres per minute or a 3 star water rating.			✓	✓
The applicant must ensure new or altered toilets have a flow rate no greater than 4 litres per average flush or a minimum 3 star water rating.			✓	✓
The applicant must ensure new or altered taps have a flow rate no greater than 9 litres per minute or minimum 3 star water rating.			✓	✓

Construction	Show on Plans	Show on Section Plans	Get it checked
Insulation requirements			
The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists.			
Construction	Additional insulation required (R-value)	Other specifications	
concrete slab on ground floor.	nil		
suspended floor with enclosed subfloor: framed (R0.7).	R0.60 (down) (or R1.30 including construction)		
external wall: cavity brick	nil		
flat ceiling, pitched roof	ceiling: R1.45 (up), roof: foil backed blanket (75 mm)	medium (solar absorptance 0.475 - 0.70)	

Glazing requirements				Shading by Blades	Shading by Glazed Panels & Spikes	Further Checks
Windows and glazed doors						
The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below. Relevant overshadowing specifications must be satisfied for each window and glazed door.						
The following requirements must also be satisfied in relation to each window and glazed door:						
Each window or glazed door with standard aluminium or timber frames and single clear or toned glass may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below. Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions.						
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.						
Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0.35.						
Pergolas with fixed battens must have battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window. The spacing between battens must not be more than 50 mm.						
Pergolas with adjustable shading may have adjustable blades or removable shade cloth (not less than 80% shading ratio). Adjustable blades must overlap in plan view.						
Windows and glazed doors glazing requirements						
Window id.	Orientation	Area of glass in frame (m ²)	Overshading		Shading device	Frame and glass type
			Height (m)	Distance (m)		
W1.01	N	2.63	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)
W1.02	E	3.24	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)
W1.03	E	2.2	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)
W1.04	E	2.2	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)

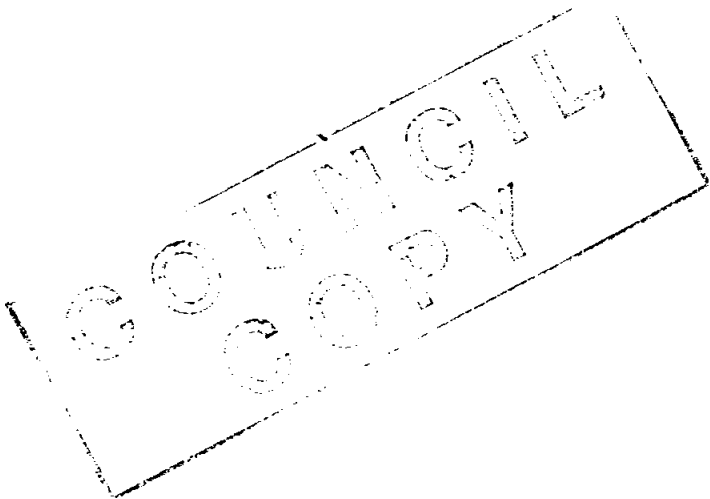
Glazing requirements										Shading Device	Shading Device Details	Certified Check
Window code no.	Orientation	Area of glass in frame (m ²)	Low shading Height (m)	Distance (m)	Shading device	Frame and glass type						
W1.05	S	3.24	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W1.06	S	3.24	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W1.07	E	3.24	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.01	N	0.36	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.02	N	0.36	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.03	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.04	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.05	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.06	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.07	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.08	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.09	N	1.08	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.10	E	3.24	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						

Glazing requirements										Show on Plans	Show on Section Plans & Specs	Clarifier Check
Window Label No.	Orientation	Area of glass inc. frame (m ²)	Overhanging		Shading device	Frame and glass type						
			Height (m)	Distance (m)								
W2.11	E	3.24	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.12	S	9.93	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.13	S	0.73	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.14	S	0.73	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.15	S	0.73	0	0	eave/verandah/pergola/balcony >=600 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.16	W	0.37	0	0	eave/verandah/pergola/balcony >=750 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.17	W	1.67	0	0	pergola (adjustable shade) >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.18	W	1.67	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
W2.19	W	1.67	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)						
Skylights										✓	✓	✓
The applicant must install the skylights in accordance with the specifications listed in the table below.												
The following requirements must also be satisfied in relation to each skylight:												
Each skylight may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below.												

Glazing requirements					Showroom Windows	Showroom Tinted Glass Windows	Certifier Details
Skylights glazing requirements							
Skylight number	Area of glazing (inc. frame) (m ²)	Shading device	Frame and glass type				
S1	1.3	no shading	timber, low-E internal/argon fill/clear external, (or U-value: 2.5, SHGC: 0.456)				
S2	1.3	no shading	timber, low-E internal/argon fill/clear external, (or U-value: 2.5, SHGC: 0.456)				

Legend
In these commitments, "applicant" means the person carrying out the development.
Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
Commitments identified with a "✓" in the "Show on CC/CDC plans & specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate for the development may be issued.

**SPECIFICATION
OF
BUILDING WORKS**



This plan / document
forms part of
Construction Certificate
no. 2013 / 5060

BUILDING TYPE

- SINGLE DWELLING ☐
- VILLA OR TOWNHOUSE ☐
- INDUSTRIAL BUILDING ☐
- DUAL OCCUPANCY ☐
- GARAGE ☐
- OFFICE BUILDING ☐
- MEDIUM DENSITY UNITS ☐
- RETAIL BUILDING ☐
- ADDITION ☐
- FARM SHED ☐
- ☐
- ☐

CONSTRUCTION

- CAVITY BRICK ☐
- TIMBER FRAMED ☐
- A.A.C.BLOCK/PANEL ☐
- BRICK VENEER ☐
- STEEL FRAMED ☐
- MASONRY BLOCK ☐
- SINGLE BRICK ☐
- STEEL CLAD ☐
- CONCRETE PANEL ☐

ADDENDUM

If any difference in requirements exists between this specification and the National Construction Code or relevant Standard that may apply to the construction of any building nominated in this specification, then requirements of the National Construction Code and/or the appropriate Standard shall take precedence over any nomination of construction in this specification.

DISTRIBUTORS: SOUTHSPEC PUBLISHING
P.O. BOX 6099
MALABAR NSW

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Fax: 0285692352 (incl. area code)
Website : www.southspec.com.au

REVISION 21 – JULY 2012

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SPECIFICATION

FOR THE ERECTION AND COMPLETION OF BUILDING AT: LOT No.....DP No.....

ADDRESS

TOWN/AREA.....

MUNICIPALITY / SHIRE / CITY..... POST CODE.....

FOR.....Hereinafter called the Proprietor or Owner.

The builder must ensure that relative drawings, plans and construction comply with the prescribed construction, the Local Government Act, the National Construction Code and that the work and services performed by the Builder are to the satisfaction of the Proprietor and Lending Authorities.

INSPECTION NOTICE

This is to apply only if inspections are required by the Lending Authority. The building is to be inspected by the Society or Bank Representative at the following stages of construction and the Builder is to give the Lending Authority and Owner at least (2) clear working days notice that inspections are required.

- 1. When trenches for footings have been prepared or rock surfaces scabbled and in the case of reinforced concrete footings, when reinforcement and depth pegs have been placed in position just prior to placing of concrete. Footings must not be commenced until the trenches have been inspected and approved by the Society Representative.
- 2. On completion of floor, wall and roof framing with noggins in position and veneer walling, but before flooring is cut down, roof covering is laid and wall linings and sheetings are secured.
- 3. When the internal wall coverings have been secured and fixing out commenced apron mouldings must not be fixed until flashings have been inspected and approved.
- 4. **ON COMPLETION OF BUILDING.** The owner is cautioned that if works have advanced beyond these stages without the requisite notices being given, inspections made and unsatisfactory conditions are discovered later, the offer of a loan or the terms and conditions of a loan may be varied by the lending authority.

REGULATIONS AND NOTICES:

The builder is to comply with the National Construction Code as amended and as applicable to the particular State or Territory in which the building is being constructed and the requirements of legally constituted Authorities for local Government and/or Services. The Builder is to give all notices, obtain all permits and pay all fees required by such Authorities. Where materials, components, design factors and construction methods comply with the Performance Requirements of the National Construction Code these may be accepted by approval authorities as an alternative as per the Deemed to Satisfy Provisions.

INSURANCE:

Insurance of the works against fire will be effected as nominated in the Building Contract. The Builder shall at his own expense adequately insure against Public Risk and arrange indemnification in respect of his liability under the Workers' Compensation Act, Work Cover and/or other regulations as applicable.

WORK, HEALTH & SAFETY: Workplaces

Legislation of the Work Health & Safety Act has been adopted in NSW, QLD, N.T, ACT, and the Commonwealth as from 1 January 2012. Under the Act if a structure is to be used as, or at a workplace it must be designed to be without risk to health and safety by including testing and analysis, addressing the suitability of the design for the ultimate use of the structure as well as materials, method of construction, maintenance and future demolition. The builder is to comply with the regulation of the Work Health Safety Act 2011 for all construction on site. If the structure will be used as, or at, a workplace a Safety Report is to accompany plans and specifications and to be distributed to the Builder, Certifier or Council and the Client.

VISIT THE SITE:

Builders tendering are to visit the site and satisfy themselves as to the nature and extent of the work, the facilities available and any difficulties entailed in the execution of the said works. No amount above the accepted price will be allowed because of work arising due to neglect of this precaution, or assumptions made.

LABOUR AND MATERIALS:

The Builder is to provide all materials, labour, fittings and plant required to construct and complete the work. Materials shall be of the standard specified and workmanship in each trade shall be performed by tradesmen of that particular trade and in conformity with current good building practice.

SET OUT:

The Builder shall be responsible for the accuracy and clear delineation of the site boundaries and location of the buildings there on. The Builder is to set out and maintain the works in accordance with the drawings. Figured dimensions are to be taken in preference to scale.

PLANS AND SPECIFICATIONS:

Any work indicated on the plans and not in the specification or vice versa, and any item not shown on either plans or specifications but which is obviously necessary as part of proper construction and/or finish, is to be considered as so shown or specified and is to be duly done as part of the contract. Any variations to plans or specifications are to be agreed and recorded by the proprietor and the builder/contractor.

ADDITIONAL BUILDING REQUIREMENTS: All instructions for extra work or additional requirements must be in writing. Dated and signed copies of instructions shall be retained by both the owner and the builder.

PLANS ON JOB:

The builder must at all times maintain on the job a legible copy of the plans and specifications, bearing the approval of the Municipal Authority concerned or Principal Certifying Authority.

BCA:

Where 'BCA', or 'PCA' is referenced in this specification then that nomination refers to the National Construction Code BCA or PCA as applicable.

STANDARDS

Where an Australian Standard (AS) or Australian New Zealand Standard (AS/NZS) is nominated in this specification then that nomination refers to the latest revision of that Standard unless the National construction Code references a different revision.

EARTHWORKS AND EXCAVATIONS: BCA part 3.1

All earthworks shall be designed and constructed in accordance with the drawings and guidelines of AS3798 . Stormwater and other surface water drainage by underground piping or surface diversions shall be in accordance with AS/NZS3500.

All siteworks shall be in accordance with the Environmental Planning and Assessment Act and Regulations for siteworks for the erection of a building, safeguarding excavations, backfilling, preventing soil movement and supporting neighbouring buildings. Drainage requirements must be determined according to the soil classifications of BCA part 3.1.1 and part 3.1.2.

FOOTINGS AND PIERS: BCA part 3.2.2

Excavate for all footings, piers, etc. to dimensions and minimum depth shown on plans or otherwise specified, or to depths necessary to secure solid bottoms and even bearing throughout similar strata. Bottoms of excavations to be level and stepped where necessary to follow ground slopes and achieve solid bottoms on foundation acceptable. Grade, fill and ram where necessary to receive concrete floors where shown on ground level.

At completion of footings, all excavations to be filled, well rammed to ground level and surplus soil spread as directed. All seepage and soakage water to be effectively dealt with and diverted clear of the building. Excavate for and lay agricultural drains to back of walls retaining earth and to any other sections of foundations as may be necessary and/or directed.

ROCK EXCAVATIONS:

Should rock of any type be encountered in excavation of the works, unless its existence is known and allowed for, the cost of its removal is to be considered as an extra to the contract and charged for at a rate per cubic metre as indicated in the schedule of rates. The Proprietor is to be notified when any rock is encountered in excavations.

CONCRETE - BCA part 3.2.3

All structural concrete shall be mixed and in compliance with AS3600, and unless otherwise specified on Engineers drawings, shall be of N20 grade. The concrete shall be supplied by an approved firm and delivery dockets shall be kept on the job for inspection by the proprietor if he so desires. The concrete for minor works, where strength of concrete is not critical, such as paving on solid ground, may have a minimum compressive strength of 15MPa if unreinforced and 20 MPA if reinforced. Alternatively, such concrete may be mixed on site where the aggregate proportions and water/cement ratio can be controlled so that the required compressive strengths can be obtained.

All concrete work shall comply with the AS3600. Maximum slump shall be 80mm unless otherwise specified by Engineer.

Concrete shall be carefully handled and placed to avoid segregation and shall be adequately compacted. Reinforcing mesh fabric to AS/NZS4671 and all reinforcing bars mild steel grade unless otherwise specified.

FOOTINGS: BCA parts 3.2.3, 3.2.4 and 3.2.5
Where sites have soils or foundations of reactive nature or problem sites footings shall be approved by a practising structural engineer and in the case of known highly swelling soils or other unstable soils special precautions may have to be taken in the design and construction of concrete footings. In the case of concrete suspended floors to first floor it will be necessary for size of footings to be specified by a practising structural engineer. Footing sizes to be as per AS2870 as amended.

TERMITE PROTECTION: BCA part 3.1.3
Where the building is being erected in a prescribed termite area and protection is required by regulation of local government or state authority then protection against subterranean termites shall be installed in accordance with AS 3660. Details of method of protection to be used shall be submitted where required, prior to commencement of building works. Written certification, signed by the installer, that the method used and the manufacturers specification complies with the Australian Standard shall be provided to the relevant authority and owner where required. A durable notice must be permanently fixed in a prominent location in the building prior to its occupation indicating: 1. The method and date of installation of the system and the need to inspect and maintain the system on a regular basis. 2. Where a chemical barrier is used, the life expectancy as listed on the National Registration Authority label and recommended date of renewal. Note that AS3660 and BCA lists the minimum acceptable level of protection only. Owners and/or builders may specify and install additional protection if desired

PATHS: (see AS 3727 for guide to residential pavement construction)
Provide paths as indicated on plans. Concrete to be as previously specified and surfaced with wooden float. Excavate for and lay paths to even grades, true lines and curves. Car tracks to be a minimum of 100mm thick and paths a minimum of 75mm. Provide expansion joints in paths at a maximum spacing of 1200mm with bitumen impregnated felt joining strips the full thickness of concrete with tooled V-joints above same.

CROSS SECTION DIMENSIONS OF REINFORCED CONCRETE FOOTINGS: for buildings with timber framed floors. for sites classified a or s according to AS2870.

CONSTRUCTION OF WALL	Normal thickness of wall to be supported (not more than)	Size of Concrete (width x depth)	
		For stable soil foundations Class A	Other foundations not subject to significant movement Class S
Brick, single storey with wall height not exceeding 4200mm excluding any gable.	mm 270 110 270	mm 400x300 300x300 400x400	mm 400X400 400x400** 400x500**
Brick, two storey with external wall height not exceeding 7200mm excluding any gable internal wall height not exceeding 7200mm. ** use 11TM reinforcement Top and Bottom			
Brick veneer, single storey with wall height not exceeding 4200mm excluding any gable.	110	300x300	300x400
Brick veneer, two storey with external wall height not exceeding 7200mm excluding any gable.	110	300x300	300x400
Timber frame, single storey – foundation walling measured from the top of the strip footing.			
Up to 1500mm height	110	300x300	300x400
Exceeding 1500mm and up to 3000mm height	110	300x400	300x400

REINFORCEMENT FOR STRIP FOOTINGS	Width of Strip Footing	Minimum number of main wires per layer using 8TM or 11TM fabric	Minimum number of 10mm dia. bars per layer	Minimum number of 12mm dia. bars per layer
	300 400	3 4	3 4-	3 4-

Where wall thickness exceeds as specified above, increase footing width to maintain the offset and provide additional bar or bars so that bar centres do not exceed 200mm, or an additional width of trench mesh, maintaining in all cases the required concrete cover.

CONCRETE FLOORS BCA parts 3.2.5
Provide concrete floors where indicated on plans. Where not specifically detailed, floors are to be a minimum of 100mm thick, reinforced with No. F72 hard drawn reinforcing fabric set 32mm below top of concrete. Floor slabs to be full thickness and free from grooves and ridges. Finish surface in one operation as required for tiling or otherwise to fine finish with float or steel trowel and sponge. Thickness of floors shall be maintained under tiling recesses in all cases.
Note that in Climate Zones 6,7 and 8 the edges and underneath some concrete slab construction may require thermal insulation.

INTEGRAL FLOOR SLABS AND SLAB ON GROUND: BCA part 3.2.5
Grade whole area occupied by floor to a minimum depth as required to remove top soil and grass roots etc. Determine level of top of floor to habitable rooms, a minimum of 150mm above highest point of adjacent proposed external ground level (adjust for fill or general excavation as required) or as otherwise required by Local Council. The external finished ground surface must be graded to drain water away from the building at a minimum slope away of 50mm over the first 1m as per BCA Part 3.1.2.3
Excavate for perimeter and other main footings to minimum depths as shown on Engineers drawings or to depths necessary to obtain solid bottoms and even bearing throughout a similar strata. Allow for sufficient recess for brickwork if carried under main floorings so as to reduce the amount of concrete necessary, provided that the fill is retained from displacement under the footings (by a temporary earth bank or similar) and provided also that a minimum of 100mm depth of the same hardcore is provided under all footings in such case, roadbase or ungraded bluemetal is recommended as hardcore, coalwash is NOT to be used. Reinforce to Engineers detail and pour in one continuous operation in concrete Grade 20 unless otherwise nominated. Residential slabs and footings must be constructed in accordance with AS2870 as amended.

DRAINS FROM UNDER BUILDINGS:
For drains from under buildings see new requirements of AS2870 on page 12.

SUSPENDED REINFORCED CONCRETE SLABS:
All concrete slabs to separate areas within or adjoining a building generally of timber floor construction shall be suspended. Temporary formwork must be removed prior to final inspection. Permanent metal formwork approved by the lending authority may be used with slab sizes and reinforcement according to manufacturers recommendation.
Suspended floor slabs to have minimum of 100mm bearing on at least two opposite sides and spans are not to exceed 2100mm except where specifically detailed. Solid fill forming may be used under concrete floors (eg. laundry, garage) adjoining the building providing that the level of the top of the slab is not less than 50mm below antcap and/or dampcourse level of the main building. For spans exceeding 2100mm, slabs supporting walls, cantilever slab floors or where beams and columns are used to support the slab, a practising structural engineers details shall be submitted with the drawings and specifications.

PRE-STRESSED BEAM FLOORING:
Pre-stressed beams for areas to be constructed by this method shall be delivered to site and stacked for storage on timber packers to avoid damage and where stacked one above the other the timber packers shall be positioned in vertical lines.
Beams shall be purpose made by the manufacturer for this particular project, designed in accordance with AS3600. Beams shall be individually marked for their respective location on the job and positioned in the work to comply with manufacturers key drawing. Cutting or drilling into beams or modification in any way shall be done only with the express authority of the manufacturer or their site representative.
Spacing of beams and fibre cement infill panel placement shall be strictly to manufacturers detail. Topping slab concrete shall have a 28 day strength of not less than 20 MPA and thickness shall not exceed 50mm unless shown on the drawings. Reinforce with nominal F52 Mesh U.N.O.
Topping slabs shall be continuously cured for 7 days to prevent non structural cracking.

BRICK AND BLOCKWORK:(Construction of masonry buildings shall be as per AS3700 or AS4773)
CLAY BRICKS
To be sound, hard, of well burnt clay and shale and comply with specifications AS1225 'Burnt Clay and Shale Building Bricks'.
SAND LIME BRICKS: To Comply with AS1654 'Calcium Silicate Bricks' and have a transverse strength no less than as per Specification AS1640 'Clay Bricks'.
CONCRETE BLOCKS OR BRICKS: To comply with AS4455 Masonry Building Blocks/Pavers

SAND: To be clean, sharp and free from all impurities.

CEMENT MORTAR: To be one part fresh cement to 3 parts sand.

LIME MORTAR:

To be one part lime to 3 parts sand. Lime to be well slaked before use.

COMPO MORTAR: To be one part cement, one part lime and 6 parts sand. All bricks to be well wetted before use. This not to apply to textured bricks. Footing courses to be grouted solid with cement mortar. All brickwork to be properly bonded, laid on full bed and all perpends filled. All piers are to be built solid and each course grouted as work proceeds. Carry up all work true and plumb to even gauge and in level courses the full height and thickness required. The brickwork faces above damp course level to be finished with neatly ironed or raked joints. Beds and joints to be kept to a reasonable thickness. Finish all other exposed brickwork faces with neat struck joints.

BUILD THE FOLLOWING IN CEMENT MORTAR; (see AS3700 or AS4773)

All brickwork to underside of floor bearers level. All 110mm thick brickwork. All copings, steps, brick balustrade walls, sills, piers, wing walls, retaining walls. Brick Fences on alignment and/or brickwork under timber fencing also concrete blocks or bricks. **Build compo mortar:** All other brickwork, including concrete masonry.

SLEEPER PIERS: BCA table 3.2.5.

230 x 230mm up to 1.5 high, footings are to be two courses of 350mm work. Where pier height exceeds 1.5m up to a maximum of 2.4m footings are to be two courses of 470 work and lower portion of pier to be 350 x 350. Concrete footings must be 500mm square and 200mm thick for an effective supported floor area of not more than 20m². All footings must have Engineers details for soil other than class A or S.

ENGAGED PIERS:

To be minimum of 230 x 350 (including wall thickness) spaced at not more than 1.8m centres up to 2700 high to support floor bearers and at similar centres to stiffen walls supporting concrete slabs. All stack bonded piers to be anchored to walls with specified wall ties every fourth course. Areas with design wind speeds greater than N2 must be vertically reinforced with at least 1 off Y12 bar, tied to the footing.

VENEER WALLS:

To be 110mm Brickwork built in Compo Mortar on foundation walls as previously specified. Internal faces to be 38mm from timber frames. Build in wall ties opposite each alternate stud, four courses above level of bottom plate, then every fourth course and spaced not more than 460mm horizontally and 610mm vertically or 610mm horizontally and 460mm vertically. Ties to be left open for attachment to studs. A cavity space of between 25mm and 50mm must be maintained throughout. Where thermal insulation is required to comply with Energy Efficiency requirements, clear cavity spaces must be maintained. Cavities and weep holes to be clean and clear at damp course level. All mortar droppings to be caught on paper or other material and removed before internal linings are fixed. Mortar joints on inside face of walls to be flush with brickwork.

SPECIAL WALLS: (if shown on plans)

Walling not of timber. Veneer on-timber or masonry to be constructed as per Structural Engineers Detail and Certificate.

SINGLE LEAF MASONRY: (Garage Walls etc.)

Footings as per BCA part 3.2.5, engaged piers and reinforcing to be as per part 3.3.1.

ACCESS:

Adequate access in the external foundation wall must be provided with a weatherproof lockable door and crawl access is to be provided to all under floor areas.

VENTILATION: BCA part 3.4.1

Sub-floor areas shall be ventilated by means of evenly distributed openings with an unobstructed area of 7300mm² per lineal metre of external wall. Where particle board flooring is used the unobstructed area shall be increased to 7500mm² per lineal metre and evenly spaced. Ventilation of internal walls shall be a minimum of 22000mm²/m run of wall. Vents to be immediately below bearers and similarly provide vents under verandah floors and suspended floor slabs. Sufficient cross ventilation to be provided through all walls below floors. No section of the under-floor area should be so constructed that is will hold pockets of still air. Appropriate special provision to be made where a gas bath heater is installed. Ventilation may be varied by Local Council

BRICK REINFORCEMENT:

In full brick cavity walls at two courses above level of the highest opening built into each 110mm thickness one continuous strand of 64 wide galvanised metal reinforcement lapped 100mm at joints and full width of layer at intersections.

ANT CAPS:

To all brickwork and piers, at the level of underside of floorbearers, ant capping of 0.5mm gauge galvanised steel or other approved metal is to be set, projecting 38mm beyond the internal faces of all brickwork and turned down at a 45 degree angle, lapped 13mm and soldered or crimped at all joints and corners so as to provide a continuous and effective barrier against termites throughout the length of the material. Whole of house protection against subterranean termite attack shall be installed in accordance with AS 3660.

TIES:

Wall ties complying with AS/NZS2699 shall be used for all tie requirements. Corrosion protection and installation of wall ties is to comply with AS3700 or AS4773.

STEPS:

If shown on plan in bricks to match other exposed brickwork. To be built in solid work or where side walls are provided in consolidated filling. Treads are to be brick on edge, or pre cast concrete units with a maximum of 355mm going and a maximum of 190mm and minimum of 115mm rises.

LINTELS:

Galvanised lintels (of steel not less than grade 300MPa as per AS/NZS 4100) to comply with spans as required are to have :-

- (i) long legs vertical (ii) each angle or flat to carry a maximum 110mm wall thickness (iii) minimum bearing lengths shall be :- (a) clear spans up to 1 metre – 100mm min. (b) clear spans over 1 metre- 150mm min. (iv) there must be not less than 3 courses of brickwork over openings and (v) all loads must be uniformly distributed.

Note that corrosion protection for lintels and built in structural members must comply with requirements of AS3700 orAS4773.

FIREPLACE CHIMNEY and FLUES: BCA part 3.2.5.5. and 3.7.3

Reinforced concrete footings 300mm wider all round than brick construction to be provided. Build 110mm brick wall and/or corbel courses to support hearth. Non combustible material to be used for upper surface of hearth with a minimum thickness of 155mm and shall extend not less than 300mm beyond the front of the fireplace opening and not less than 150mm beyond each side of the opening. Local council or structural engineer may vary this requirement. Provide fireplace and chimney in position as shown and to the dimensions on plan. Mild steel bars or angles of suitable sizes and with a 110mm bearing at each end to support work over openings. Up to the level of 300mm above the underside of the arch or lintel, the back and sides of the fireplace to be constructed in two separate sections of solid masonry minimum 190mm thick not including cavity. Concrete masonry not permitted in construction of inner section, balance of walling to be minimum of 90mm thick. Flue to be rendered minimum 12mm thick. Mix; 1 cement, 2 lime, 10 sand or L.C. approved material. Chimney stack is to be not less than the height of the main roof ridge and is to be built in compo mortar. The flue is to be 250 x 250mm or one tenth of the area of the fireplace opening, whichever is the greater, gathered over to break daylight and pargetted to the full height. An 0.6mm galvanised steel tray, in one piece, holed for flue is to be set at level of one course above roof covering on the high side of the roof. The internal edges are to be shaped to form a quadrant gutter 25mm wide, sweated at corners. The tray is to project a minimum of 25mm beyond the external faces of brickwork turned up and/or down as required. Where the tray is turned up, a clearance of at least 6mm is to be maintained between the brickwork and the tray. Provide weep holes by leaving open vertical joints in brickwork above tray. Rake joints in brickwork ready to receive flashing to be provided by Plumber. A loose brick must be left on the back of the chimney stack. This brick must not be set until after the tray has been cleared of all mortar droppings.

HEATING APPLIANCES:

Heating appliances installed in brick or blockwork surrounds shall be in conformance with AS 2918 as applicable

DAMPCOURSE AND WEATHERPROOFING OF MASONRY :

Provide a continuous run of L.C. Approved dampcourse material to full width of wall thickness on all brickwork at level not higher than bottom of floor bearers and engaged piers. Dampcourse material is to be run in long lengths, lapped minimum 100mm at joints and full width at all intersections. To wall surrounding concrete and/or solid floors an additional run of dampcourse is to be laid, one full course above floor level and stepped down to meet lower dampcourse where other walls abut walls of bathroom, shower recess or laundry. Damp proof courses and flashings shall be installed to give performance as specified in AS/NZS 2904.

VERMIN PROOFING:

13mm mesh galvanised bird wire to be built into brickwork and taken across cavity and secured to bottom plate.

FLASHING:

L.C. approved dampcourse material to be built in under all window sills 25mm at back of wood sill and 50mm at each end of same. Flashing to be bent down across cavity and built 25mm into veneer wall. L.C. approved dampcourse material to be built in over all exposed window and external door openings.

WEEP HOLES:

Perpend joints are to be left open in exterior brick walls spaced approx. 600mm in course immediately over flashings of all exposed openings and to brick retaining walls, fender walls etc. as required. See requirements of AS3959-2009 for protection of weep holes in bush fire areas.

RETAINING WALLS:

Retaining walls not specifically detailed, and foundation walling required to retain earth, are to be a minimum of 230mm thick, up to a height of 750mm of retained earth. Cavity walls used to retain earth are to have the leaf adjacent to the retained earth a minimum of 230mm thick, to a maximum of 900mm of retained earth height. All to be properly bonded (see 'Bonded Walls') and provide with a properly constructed agricultural drain to the earth side of retaining wall. For walls in excess of the above heights of retained earth, an Engineers detail will be required.

BONDED WALL:

Solid brick walls more than one brick width which are used to retain earth or are otherwise noted as 'Bonded Walls', shall be bonded throughout the thickness of the wall by either header bricks or equivalent tying. Where header bricks are used, every sixth course shall be a header course or there shall be at least one header or equivalent tie to every 0.13sq metres (every third course at 480mm centres). Walls 350mm or more in thickness shall have overlapping headers or ties to provide a continuous tie through the wall.

CAVITY WALLS:

Walls indicated as cavity walls to be constructed with two leaves 110mm thick spaced nominally at 60mm apart. Where thermal insulation is required to comply with Energy Efficiency requirements clear cavity spaces must be maintained. Connect the two leaves with wall ties as per AS2699 set nominally 600mm apart in every fifth course.. Keep ties clean of mortar droppings and cavity clear as work proceeds.

STRAPS:

To full brick cavity walls, secure door and window frames with 1.6mm galvanised iron straps set in brickwork. Straps to be 25mm wide and at least 300mm long, where practicable and spaced at a maximum of five courses apart. Set 25mm x 1.6mm galvanised iron straps 1800 apart and 1200mm down cavity with ends turned 75mm into brickwork to secure wall top plates.

COMPLETION:

Clean all cavities. Wait upon and make good after other trades. Replace all damaged and defective bricks. Clean all exposed brickwork with diluted spirits of salts, or as otherwise recommended by brick manufacturers, wash down with clean water and leave free from cement and mortar stains.

CONCRETE BRICK

Mortar

For normal conditions to consist of:

Above Dampcourse:

1 part cement
2 parts lime or lime putty
9 parts clean sand

Below Dampcourse:

1 part cement
1 part lime or lime putty
6 parts clean sand

Mortar mixes must comply with A.S. 3700 or AS4773

The substitution of other plasticisers for lime is not recommended. Under no circumstances should the proportion of cement be increased.

JOINTS: Finish all external brickwork and internal feature walls with raked joints. Finish all other brickwork with neat struck joints.

JOINT REINFORCEMENT AND ARTICULATION JOINTS: In addition to reinforcement over openings as later specified provide joint reinforcement in bed joints at vertical spacings not exceeding 600mm. Control joints, providing a continuous vertical separation through the entire thickness of the wall, are to be provided where indicated on plans or where walls exceed 9m in length, as close as practical building will permit. Reinforcement not to extend across control joints.

AUTOCLAVED AERATED CONCRETE BLOCKS:

Lightweight blockwork shall be Autoclaved Aerated Concrete blocks consisting of sand, cement and lime and shall be installed to areas as indicated on drawings. Site provisions for storage of materials and for the mixing of adhesive shall be as recommended by the manufacturer.

WORKMANSHIP:

Fixings, fastenings, anchors, lugs and the like shall be of a type approved by the manufacturer and shall transmit the loads and stresses imposed and ensure the rigidity of the assembly. Block laying shall be in accordance with the manufacturers current published specifications.

TOLERANCES:

Maximum planar misalignment is not to exceed 2mm along butt joints. The thickness and width of walls shall not vary by more than 5mm from design sizes. Deviation from plumb, level or dimensional angle must not exceed 5mm per 3.5m of length of member or 6mm in total run in any line.

INSTALLATIONS:

All lightweight blockwork shall be installed using thin bed adhesive mortar to all horizontals and perpend. The first course must be made true and level using a normal thick bed mortar with thin bed adhesive to fully seal the perpend. All thin bed adhesive shall be applied using a recommended notched trowel to obtain an even distribution of adhesive to achieve joint thickness of 2-3mm. All lightweight blockwork shall be laid in a format that a vertical joint of the lower course must be staggered at least 100mm relative to the vertical joint of the overlaying course. A slip/joint bond breaker must be installed between the first course and the foundations or slab on all internal and external walls to allow for differential movement between the blocks and the supporting structure. Build in as necessary all flashings, reinforcements, arch bars, lintels, frames, straps, bolts, lugs, wall ties, metalwork, precast units, sills, partitions, joists and the like. Carefully set out and leave openings for other trades to eliminate cutting.

COMPLETION:

On completion clean out all blocks, mortar, droppings, debris etc. and remove all scaffolding, make good all put-log holes and other blemishes and leave all work in perfect condition and protect until handover.

CONCRETE BLOCK and REINFORCED MASONRY: AS 3700 - or as an alternative AS4773

All masonry units shall comply with AS1500 'Hollow Load Bearing Concrete Units'. Masonry shall be stacked on planks off the ground and in wet weather shall be covered with tarpaulins or otherwise kept dry. At the end of each days work the top of the wall shall be covered with tar paper, polyethylene sheets or by other means protected from becoming excessively wet. Masonry units shall not be dampened prior to laying, and shall be laid in dry state.

MORTAR:

Mortar shall comply with AS 3700 or AS4773. . Plasticisers may be used when approved and where tests show the mortar with plasticisers meets the requirements of these specifications.

CONSTRUCTION BEDDING:

All face and end joints shall be fully filled with mortar and joints shall be squeezed tight. Slushing of mortar into joints shall not be permitted. The first course of blocks shall be laid in a full bed of mortar.

JOINTS

Joints on all exposed surfaces shall be as specified. The joint shall be formed by striking the mortar flush and after it has partially set, tooling with the proper shaped tool to adequately compact the surface. The tool shall be of sufficient length to form a straight line free from waves. Internal joints shall be ironed. Where flush joints are left exposed, they shall be first compacted, then repointed and excess mortar removed. Joints shall be 10mm thick unless otherwise specified or directed.

ARTICULATION JOINTS:

Shall be located where shown and shall form a continuous vertical break from top to bottom of wall or from bond beam. Provision shall be made for adequate lateral stability. Joint shall be filled with mortar, raked back 16mm and pointed with a non-hardening plastic filler. No reinforcing shall be carried across control joint. Articulated joints over garage doors are prohibited unless brickwork is reinforced or lateral support is provided.

JOINT REINFORCEMENT:

Reinforce every 600mm in height and in the two courses immediately above and below window openings. Lap mesh at least 150mm at all joints and intersections except at articulation and expansion joints where a slip joint may be required.

BRACING DURING CONSTRUCTION:

Masonry walls constructed in locations where they may be exposed to high winds during erection shall not be built higher than ten times their thickness unless adequately braced, or unless provision is made for prompt installation of permanent bracing such as intermediate floor or roof structure. Back filling shall not be placed against foundation walls or retaining walls before mortar or grouting has sufficiently hardened, or before wall has been permanently braced to withstand horizontal pressure.

WEATHERPROOFING:

All concrete masonry walls exposed to the weather or below ground level shall be adequately water proofed, using an approved paint or other coating and applied in accordance with the directions of the manufacturer.

CLEANING:

During the progress of the work every effort shall be made to keep walls that are exposed clean. Mortar smears shall be allowed to dry for a short period and then be removed by trowel or suitable brush or both. Care shall be taken to avoid damage to the mortar joint when brushing. Mortar burrs shall be promptly removed. At the conclusion of the work, walls shall be cleaned, all scaffolding and debris removed and the wall left in a good clean condition.

BUSHFIRE PRONE AREAS-BCA 3.7.4

Site assessment and preparation, construction of and maintenance of Class 1 buildings and decks and Class 10a buildings in a Bushfire Prone Area are required to comply with the provisions of AS3959 as applicable and BCA 3.7.4.

NSW VARIATIONS:

Performance requirement is satisfied for Class 1 buildings or Class 10 buildings and decks if constructed in accordance with the following:-
To comply with AS3959 except for Section 9 'Construction for Bushfire Attack level FZ (BAL-FZ)'. Buildings subject to BAL-FZ must comply with Specific Conditions of Development Consent for construction at this level of fire threat.
OR Consultation with NSW Rural Fire Service under Section 79BA of the Environmental Planning and Assessment Act 1979
OR as modified by Development Consent Issued under Section 100B of the Rural Fire Act 1997.

Building applications in NSW require 'Statement of Environmental Effects (SEE)' and a 'Bushfire Assessment Report' to be submitted with any DA (Development Application) where Class 1 or 10 building construction is proposed in Bush Fire Prone Areas. Details of areas are available from Council 'Bushfire Prone Land Maps'. ('Single dwelling Application Kits' to aid in submitting a Bushfire Assessment Report are available at (www.rfs.nsw.gov.au) The current 'Planning for Bushfire Protection. Appendix 3 -Site Assessment for Bushfire Attack' is April 2010 edition.

VICTORIAN VARIATIONS:

under Victorian Planning Provisions, applicants requiring to construct a Class 1a building on Bushfire prone land are required to implement standard conditions as per the Country Fire Authority (CFA) publication 'Building in a Wildfire Management Overlay Applicants Kit 2007'. Other standard conditions may also apply where building work is to be constructed on a site in the same location on land where a Class 1a building was damaged or destroyed by bushfire that occurred after 1 January 2009
OR the allotment is in a WMD under the local planning scheme.

Standard conditions are:

- a static water tank is to be installed (not required if an alternative water supply either swimming pool, lake or a dam containing 10,000 litres is located within 60 metres of the proposed Class 1a building, and a fire brigade vehicle can get within 4 metres of the water supply.
- Access for emergency vehicles is to be supplied.
- The Bushfire Attack level (BAL) shall be maintained to that nominated in the application for the building permit.

The standard condition details are to be confirmed with schedules 1, 2 or 3 as nominated by the Relevant Building Surveyor (RBS).

TASMANIAN VARIATIONS:

BCA clauses 3.7.4.0 is amended by the addition of clauses BCA Tas 3.7.4.1.
Vehicle access to a class 1 building and the fire fighting water supply point must be provided by an access road that complies with requirements for a Modified 4C Access Road as listed in those clauses.
BCA Tas 3.7.4.2. A water supply to all the exterior elements of a Class 1 building in a designated bushfire prone area must be within 120m of a fire hydrant with a minimum flow rate of 600L per minute at a minimum pressure of 200 kPa
OR a water supply available at all times of a least 10,000L for each separate building. This supply can be a tank, swimming pool, lake or dam.

NOTE: Normal Australian Standards specify requirements for construction and if AS3959 does not specify construction of a particular element for bushfire protection then the normal AS (Australian Standard) will apply for construction of those elements.
Where a building is to be constructed more than 100 metres away from a bushfire hazard the bushfire construction requirements of AS3959 do not normally apply. Clarification of the site requirements should be obtained from the local authority.

BUSHFIRE ATTACK LEVEL (BAL): Where a building is to be constructed in a Bushfire Prone Area, the BAL index (eg BAL-19, BAL-29 etc) shall be determined for the site. If the building has different BAL hazard requirements for different facades, then the highest BAL construction requirements will be used to determine the appropriate construction. Other facade requirements may be reduced by one level of construction unless subject to the same bushfire attack level.

ENERGY EFFICIENCY – BCA part 3.12

Performance provisions of the BCA Part 2.6 requires that a building must have a level of thermal performance so that greenhouse gas emissions are reduced using energy efficiently This level of thermal performance must facilitate the efficient use of energy for cooling and heating. This will be achieved by selection of materials and methods of construction of Building Fabric, External Glazing, Building sealing, Air movement and service as best suited to the particular Climatic Zone in which the building is sited. A building must have an energy rating of not less than 6 stars complying with the ABCB protocol for House Energy Rating (Note: in NSW, for Class 1 and 10 buildings subject to BASIX the Energy Efficiency Provisions of BCA as varied by the NSW Appendix apply). Map of Australian Climate Zones for Thermal Design can be viewed on the Australian Building Code Board website at: www.abcb.gov.au

R-Value is the Thermal Resistance of a component to heat and cold movement. Thermal movement is upwards or downwards through a roof or a combination of both.

THERMAL RESISTANCE: minimum TOTAL R-Value required for various climatic zones-roofs with solar absorptance value greater than 0.6									
BUILDING COMPONENT	CLIMATE ZONE								
	1	2 - Altitude less than 300	2 - Altitude 300m or more	3	4	5	6	7	8
ROOFS & CEILINGS									
Direction of heat flow	Downwards			Downwards and upwards			Upwards		
Minimum Total R-Value required	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.3

Added insulation to achieve minimum R-Values for various climate zones can be: (a) Reflective Insulation or (b) Bulk insulation or a combination of both. Reflective Insulation must be installed with not less than 20mm air space between the more reflective side and a building lining or cladding (note: cavity clearances are not to be reduced) and closely fitted against any penetration and or door/window frame, be adequately supported and overlapped to adjoining sheet not less than 150mm.Bulk insulation must be installed so that it maintains its position by not slumping and forming voids and must abut other installation or building members. Care should be taken that insulation does not interfere with the safety or performance of services, fittings or electrical components. Insulation as manufactured must comply with AS/NZS4859.1.

R-VALUE OF INSULATION TO BE ADDED TO BUILDING COMPONENT TO MEET TOTAL R-VALUE REQUIRED									
ROOF TYPE	ROOFS	CLIMATE ZONE							
		1,2 Below 300m AHD altitude	1,2 at or over 300m AHD	3	4	5	6	7	8
Minimum required Total R-Value for roofs		5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.3
FLAT ROOF, SKILLION ROOF AND CATHEDRAL CEILING – CEILING LINING UNDER RAFTERS - UNVENTILATED									
METAL	Total R-Value of roof materials	0.48 down 0.36 up	0.48 down 0.36 up	0.36 upwards					
	Minimum R-Value of insulation to add	4.62 down 4.72 up	4.62 down 4.72 up	4.72	4.72	4.72	4.72	4.72	5.94
FLAT ROOF, SKILLION ROOF AND CATHEDRAL CEILING – CEILING ON TOP OF EXPOSED RAFTERS-- UNVENTILATED									
TILED	Total R-Value of roof materials	0.44 down 0.38 up	0.44 down 0.38 up	0.38upwards					
	Minimum R-Value of insulation to add	4.66 down 4.72 up	4.72	4.72	4.72	4.72	4.72	4.72	5.92
FLAT CEILING WITH PITCHED ROOF – CAVITY ROOF SPACE --VENTILATED									
TILED	Total R-Value of roof materials	0.74 down 0.23 up	0.74 down 0.23 up	0.23 upwards					
	Minimum R-Value of insulation to add	4.36 down 4.87 up	4.36 down 4.87 up	4.87	4.87	4.87	4.87	4.87	6.07
FLAT CEILING WITH PITCHED ROOF-- CAVITY ROOF SPACE --UNVENTILATED									
TILED	Total R-Value of roof materials	0.56 down 0.41	0.56 down 0.41up	0.41 upwards					
	Minimum R-Value of insulation to add	4.54 down 4.69 up	4.54 down 4.69 up	4.69	4.69	4.69	4.69	4.69	5.89
FLAT CEILING WITH PITCHED ROOF—CAVITY ROOF SPACE -- VENTILATED									
METAL	Total R-Value of roof materials	0.72 down 0.21 up	0.72 down 0.21 up	0.21 upwards					
	Minimum R-Value of insulation to add	4.38 down 4.89 up	4.38 down 4.89 up	4.89	4.89	4.89	4.89	4.89	6.09
FLAT CEILING WITH PITCHED ROOF – CAVITY ROOF SPACE – UNVENTILATED									
METAL	Total R-Value of roof materials	0.54 down 0.39up	0.54 down 0.39up	0.39upwards					
	Minimum R-Value of insulation to add	4.56 down 4.71 up	4.56 down 4.71 up	4.71	4.71	4.71	4.71	4.71	5.91

A roof must achieve the minimum Total R-Value specified. In Climate Zones 1,2,3,4 and 5 a pitched roof with a flat ceiling must have a Solar Absorbance value less than 0.55, RBM installed below the roof and the roof space ventilated by roof, gable, eaves or ridge vents that allow an unobstructed air flow with no dead air spaces, Vents must have a total fixed open area of not less than 1% of the ceiling area. OR not less than 2 wind driven ventilators in association with fixed vents subject to approval.

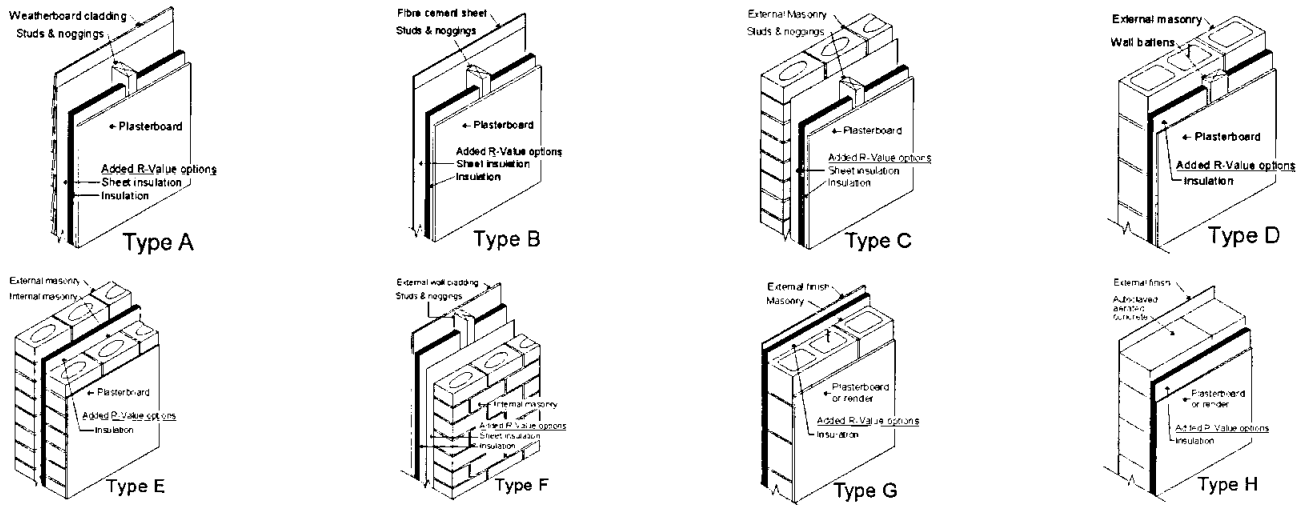
TYPICAL SOLAR ABSORPTANCE VALUES OF COLOURED ROOFS

Slate (dark grey)	0.9	Light Grey	0.45		
Red, Green	0.75	Zinc Aluminium (dull)	0.55	off white	0.35
Yellow, Buff	0.6	Galvanised steel (dull)	0.55	Light Cream	0.3

R-VALUE OF INSULATION TO BE ADDED TO BUILDING COMPONENT TO MEET TOTAL R-VALUE REQUIRED					
TYPICAL WALL CONSTRUCTION	R - VALUES	CLIMATE ZONE			
		1,2,3,4,5	6	7	8
	Minimum required Total R – Value for Walls	2.8	2.8	2.8	3.8
(A) Weatherboard: minimum 70mm Timber Frame	Total R-Value of Wall Materials	0.48			
	Minimum R-Value of insulation to add	2.36	2.36	2.36	3.32
(B) Cement or Metal Sheet 70mm timber frame	Total R-Value of Wall Materials	0.42			
	Minimum R-Value of insulation to add	2.38	2.38	2.38	3.38
(C) Clay Masonry Veneer minimum 110mm Veneer	Total R-Value of Wall Materials	0.56			
	Minimum R-Value of insulation to add	2.24	2.24	2.24	3.24
(D) Concrete Block Masonry minimum 140mm Masonry	Total R-Value of Wall Materials	0.54			
	Minimum R-Value of insulation to add	2.27	2.27	2.27	3.27
(E) Cavity Clay Masonry 110 ext. veneer, 90mm internal (min)	Total R-Value of Wall Materials	0.69			
	Minimum R-Value of insulation to add	2.11	2.11	2.11	3.11
(F) External insulated Clay Masonry Minimum 110 mm masonry	Total R-Value of Wall Materials	0.53			
	Minimum R-Value of insulation to add	2.27	2.27	2.27	2.3
(G) External insulated Concrete Masonry minimum 140mm thick	Total R-Value of Wall Materials	0.46			
	Minimum R-Value of insulation to add	2.34	2.34	2.34	3.34
(H) Autoclaved Aerated Masonry minimum 200mm thick	Total R-Value of Wall Materials	2.42			
	Minimum R-Value of insulation to add	0.38	0.38	0.38	1.38

EXTERNAL WALLS

An external wall must achieve the minimum Total R-Value for the relevant Climate Zone or in Climate Zones 1,2 and 3 can be shaded by a verandah, balcony, carport eaves and gutter or the like with a reduction of 0.4 to the minimum Total R Value required. The horizontal projection from the external face of the building must be not less than one quarter of the overall height of the wall measured from the internal floor vertically to the underside of the projection. This applies to all stories. NOTE: In Climate Zones 4,5,6,7 and 8 all walls must achieve a surface density of not less than 220 Kg/m2 and in Climate Zone 6 be constructed on a flooring system that is in direct contact of ground i.e. concrete slab or in Climate Zones 6,7, and 8 incorporate insulation with an R-Value not less than 1.0 to the edges and underneath the slab. These requirements do not apply to South facing walls in Climate Zones 1,2 and 3 south of latitude 20° south



ENERGY EFFICIENT EXTERNAL GLAZING – BCA part 3.12.2

This part of the BCA applies to Class 1 buildings and class 10a buildings with a conditioned space. Acceptable Construction Practice: The effective glazing area of a building must not exceed the percentages of the building area as per BCA Table 3.12.2.1. This table defines the maximum effective glazing area (Total glazed area of all windows in a storey) as a percentage of the total floor area of a storey. The glazing area limits listed provide only the minimal protection against overheating (heat flow into the building via the glazing) and heat loss (through the glazing) in cold conditions. The heat loss or gain can be controlled by siting of windows, shading, use of protective films, double glazing with air or gas fill in a sealed unit, and size of windows. Window manufacturers can supply windows to suit the requirements for the site Climate Zone and the window construction depends on shading of the glazed area by verandahs, balcony, fixed canopies etc. or a shading device. A shading device must restrict at least 80% of the solar radiation when in use and can be a shutter, blind, vertical or horizontal screen with blades, battens, slats etc. and be adjustable by the building occupants. Where necessary the nomination of glazing types, window locations, shading etc. should be carried out by an approved specialist.

NSW requirements to comply with BASIX Specifications are selectable in NatHERS 2.32A

CARPENTRY

All timber shall comply with the appropriate standard as listed below. Timber sizes shall be selected so that the building as constructed complies with AS1170.2 or AS4055 for serviceability and Design Wind Gust Velocities (permissible stress) of 33 M/s minimum. Substitution of some members may be required for higher Gust Wind Velocities and advice of local authorities Building Department or Structural Engineer should be sought as whether design to N3 or higher is required.

STRESS GRADES:

Visually Stress Graded Timber: Timbers whose species or place of growth is known may be visually graded for quality in accordance AS 2082. Mechanically Stress Graded Timber of required stress grade according to AS/NZS 1748 may be used regardless of species. Where seasoned timber is required timber shall be regarded as seasoned only if its moisture content does not exceed 18 per cent.

FRAMING : BCA part 3.4.3.
Timber sizes in this specification are based on AS1684.4 Simplified Non-cyclonic areas with restrictions as follows: Maximum wind classification N2 (33m/s) - maximum roof pitch 30°- maximum building width 12.0m - maximum rafter overhang 750mm - maximum wall height at ext. walls, floor to ceiling 2400mm. The sizes are for information only and should not be used for construction. All design for a structure within these limits should be carried out to AS1684.4
NOTE: for wind classification N3 (W41N) and N4 (W50N) Non-cyclonic areas with building widths 12.0m and up to 16.0m and with roof slopes exceeding 30° and up to 35°, design according to AS1684.2 is required. For construction in Cyclonic Areas, wind classification C1 to C3 refer to AS 1684.3

CUTTING, ASSEMBLY AND ERECTION OF FRAMING ABOVE GROUND FLOOR LEVEL:
Where framing is cut, assembled and erected on site, particular care should be taken that member sizes and fixings are designed to comply with stress grades for the particular number of stories and roof loads according to AS1684.

FRAMING: BCA part 3.4 applies to all dwelling framing.

FLOOR FRAMING:
Ground floor timbers shall be only of hardwood, cypress pine or pressure treated Radiata or Canada Pine below a height of 300mm above finished ground level and must not be built into brickwork. Subfloor ventilation shall conform to BCA part 3.4.1. In Bushfire Prone Areas special conditions apply. Where termite barriers need to be inspected, 400mm clearance is required between the underside of bearer and ground surface. Sub floor ventilation shall be as per BCA 3.4.1

BEARERS AND JOISTS:
Bearers and joists shall be installed to comply with AS1684 as amended for timber components or AS3620 for lightweight steel framing sections or as per the NASH alternatives. (See page 9 for steel framing)

ANT CAPS:
To all brickwork and piers, at the level of underside of floorbearers, a capping of 0.5mm gauge galvanised steel or other approved metal is to be set, projecting 38mm beyond the internal faces of all brickwork and turned down at a 45 degree angle, lapped 13mm and soldered or crimped at all joints and corners so as to provide a continuous and effective barrier against termites throughout the length of the material. Whole of house protection against subterranean termite attack shall be installed in accordance with AS 3660.

EAVES BEAMS AND VERANDAH PLATES:
Eaves beams and verandah plates shall be provided to support rafters or trusses over full height openings or recesses in walls or over verandahs or porches covered by main roof structure. Any reduction in nominal size through mill dressing or scalloping shall be allowed for so that the minimum size listed is not reduced. The ends of eaves beams and verandah plates that are supported on stud wall shall be carried by studs or stud groups as for heads for equivalent spans. End fixing shall provide resistance to uplift or displacement. Verandah Posts to be not less than 100mm x 100mm in timber F11. If supporting roof loads they shall be as per AS1684.

EAVES:
Project rafters to give a soffit at eaves of directed width and fix 200 x 25mm timber fascia or colourbond steel as directed. Where eaves are boxed in, soffit bearers (sprockets) of 50 x 38mm shall be provided, spaced to suit eaves lining and attached directly to outer ends of rafters. In brick veneer buildings the inner ends of soffit bearers shall be fixed to the frame so as to be 20mm or more clear above top of brickwork at time of construction.
In solid masonry buildings the inner ends of soffit bearers shall be located by means of 50 x 25mm hangers from rafters or wall plates.
In Bushfire Prone Areas fascias and eaves linings have special requirements.

ROOFING BATTENS: Supporting roofing only. (Note: roofing battens are not suitable for the safe support of workers prior to fixing roof cladding). Battens should be continuous over a minimum of two spans and their design to suit rafter/truss spacing and batten spacing must be in accordance with AS1684 for the allowable roof mass.

MANHOLE:
Trim as required between ceiling joists or trusses for manhole 600 x 400mm minimum size. Line the opening and provide a suitable cover.

PREFABRICATED TIMBER WALL FRAMES AND TRUSSES – BCA part 3.4.3
Where prefabricated frames and/or trusses are used for construction of the building, the manufacturers certification of construction according to AS1684.2 or AS1684.4 for the building on the particular site must be obtained. Where certification is attached to truss or framing members the certification labels shall be left in place after erection for approval by the appropriate Building Surveyor, P.C.A, or Council Authority. Timber trusses purpose manufactured for this project and engineer designed according to AS1720.1 are to be spaced at centres as directed, erected and fixed in accordance with the manufacturers instructions as approved. Support only on ends or designed bearing points where directed. Where spacing of trusses exceeds 600mm centres provide intermediate ceiling joists in 100mm x 38mm hardwood (in F7) or 100mm x 50mm (in F8) supported from hangers at maximum of 2100 centres. Hanging beams shall be supported not more than 600mm from bottom chord panel points unless hangers are provided to nearest top chord panel points.

MASSES OF TYPICAL ROOF CONSTRUCTION

MASS OF ROOF	MATERIAL
10 kg/m2	Steel sheet roofing 0.50mm thick and battens
20 kg/m2	Metal sheet tiles or medium gauge steel sheet roofing , battens, 12mm softwood ceiling lining, sarking and lightweight insulation
30 kg/m2	Steel sheet roofing 0.775mm thick, 13mm plaster ceiling, roof and ceiling battens, sarking and lightweight insulation
40 kg/m2	Steel sheet roofing 0.75 thick, battens, graded purlins and high density fibreboard ceiling lining
60 kg/m2	Terracotta or concrete tiles and battens
75 kg/m2	Terracotta or concrete tiles, roofing and ceiling battens, 10mm plasterboard, sarking and insulation
90 kg/m2	Terracotta or concrete tiles, purlins, roofing and ceiling battens, 19mm hardwood ceiling lining, sarking and insulation

DEFINITIONS:
Spacing - Where this term is used the measurement shall be the centre-to-centre distance between members.
Span - Where this term is used the measurement shall be the face-to-face distance between members.
Reference is made to effective roof spans in the tables - the span is an indicator of the mass of roof being carried by the outer wall members.



TABLES OF TIMBER SIZES

		SINGLE STOREY TILED ROOF				SINGLE STOREY SHEET ROOF			
Framing Member Stud Height 2400	Span	Unseasoned	Seasoned			Unseasoned	Seasoned		
		F8	F5	MGP10		F8	F5	MGP10	
BEARERS- Strutted roof – max. rafter span 3000 @ 1800 spacing continuous over two or more spans-load bearing. Trussed Roof 9.0 Span. External Wall 1800 spacing continuous over two or more spans-load bearing.	1500	100 x 75	2/120 x 35	2/120 x 35	2/90 x 35	100 x 75	2/90 x 35	2/90 x 35	2/90 x 35
	1800	125 x 75	2/140 x 35	2/120 x 35	2/90 x 35	125 x 75	2/120 x 35	2/120 x 35	2/90 x 35
	1500	175 x 75	2/170 x 35	2/140 x 35	2/140 x 35	125 x 75	2/120 x 35	2/120 x 35	2/90 x 35
	1800	150 x 75	2/190 x 35	2/190 x 35	2/140 x 35	200 x 75	2/190 x 35	2/190 x 35	2/170 x 35
	1800	125 x 38	120 x 45	120 x 35	120 x 35	125 x 38	120 x 45	120 x 35	120 x 35
JOISTS- 450 spacing-continuous over two or more spans LINTELS*- Trussed Roof 9000 Span	900	100 x 75	2/90 x 35	90 x 45	90 x 35	100 x 50	2/90 x 35	90 x 45	90 x 35
	1200	125 x 75	2/120 x 35	120 x 45	2/90 x 45	125 x 50	140 x 45	2/90 x 45	2/90 x 35
	1500	175 x 75	2/140 x 45	2/120 x 45	2/120 x 45	150 x 50	2/120 x 35	2/140 x 35	2/90 x 45
	1800	200 x 75	2/170 x 45	2/170 x 35	2/140 x 35	150 x 75	2/140 x 35	2/120 x 35	2/120 x 35
	2100	225 x 75	2/240 x 35	2/170 x 45	2/170 x 35	175 x 75	2/170 x 35	170 x 45	2/120 x 45
	2400	275 x 75	2/240 x 35	2/240 x 35	2/190 x 45	200 x 75	2/170 x 45	2/170 x 35	2/140 x 45
	3000	-----	2/290 x 45	2/290 x 35	2/240 x 45	250 x 75	2/240 x 35	2/190 x 45	2/190 x 35
	3600	-----	-----	-----	2/290 x 45	-----	2/290 x 45	2/290 x 35	2/240 x 45

UNCOUPLED ROOF WITH LOADBEARING RIDGEBEAMS AND/OR WALLS

Rafters supporting roof and ceiling loads – non coupled cathedral roof single span

Rafter Span	Rafter Spacing	Unseasoned				Seasoned			
		F5	F7	F8	F11	F5	MGP10	MGP12	F17
Tiled Roof Ceiled 3000		200 x 38	200 x 50	175 x 50	175 x 50	175 x 45	140 x 45	140 x 45	140 x 35
	Overhang	750	750	750	750	750	750	750	750
3600		250 x 50	225 x 50	225 x 50	200 x 50	240 x 35	170 x 45	170 x 45	170 x 35
	Overhang	750	750	750	750	750	750	750	750
4200		275 x 50	275 x 50	250 x 50	250 x 50	240 x 45	240 x 35	190 x 45	190 x 45
	Overhang	750	750	750	750	750	750	750	750
4800		275 x 75	275 x 75	300 x 50	275 x 50	290 x 35	240 x 45	240 x 35	240 x 35
	Overhang	750	750	750	750	750	750	750	750
5400		-----	300 x 75	300 x 75	275 x 75	-----	290 x 35	290 x 35	240 x 45
	Overhang	750	750	750	750	750	750	750	750
Sheet Roof Ceiled 3000		175 x 50	175 x 50	175 x 50	150 x 50	140 x 45	140 x 35	120 x 45	120 x 45
	Overhang	750	750	750	750	750	750	750	750
3600		225 x 50	200 x 50	200 x 50	200 x 50	170 x 45	170 x 35	140 x 45	140 x 45
	Overhang	750	750	750	750	750	750	750	750
4200		250 x 50	250 x 50	225 x 50	225 x 50	240 x 35	190 x 45	170 x 45	170 x 45
	Overhang	750	750	750	750	750	750	750	750
4800		300 x 50	275 x 50	275 x 50	250 x 50	240 x 45	240 x 35	190 x 45	190 x 45
	Overhang	750	750	750	750	750	750	750	750
5400		300 x 75	275 x 75	300 x 50	275 x 50	290 x 35	240 x 45	240 x 35	240 x 35
	Overhang	750	750	750	750	750	750	750	750

NOTE:

- Allowable overhangs are based on a maximum birdsmouth depth of D/3. Where rafters are not birdsmouthed, the allowable overhang may be increased to 30% of the single span for that member, provided that the overhang does not exceed 50% of the actual backspan.
 - Overhang limits are only applicable where rafter ends are supported by a structural fascia.
- Sizes shown in tables in this specification are intended only as a guide to the size and stress grade for a particular member of a building frame. All timber framing should be designed and constructed in accordance with AS1684.2 and/or AS1684.4

Sizes in this specification are based on AS1684.4 Simplified Non-cyclonic areas, with restrictions as follows:-

- Maximum wind classification N2 (33m/s)
- Maximum Roof pitch 30°
- Maximum building width 12.0m

Where a building exceeds the restrictions as listed above, design to comply with AS1684.2 will allow wind speeds up to N4 (50 m/s), roof slopes up to 35°and building widths up to 16.0m.

PERMANENT BRACING OF WALLS AS PER AS1684.2 Section 8 - BCA parts 3.4.3

This section 'Permanent Bracing of walls as per AS1684 shows typical bracing applicable to timber frame construction as explanatory information only.

TYPE 'A' UNITS (Design racking resistance of 2kN). The following bracing units are deemed satisfactory type 'A' braces

- A pair of diagonal timber or metal section braces in opposite directions from each end of the wall as per fig (A) OR galvanised metal tensioned strap bracing as per fig. (B).
- Single diagonal timber or metal section brace as per figure (C).
- A 900mm minimum wide panel of structural plywood as per figure (D)

Type 'A' Bracing – Pair of diagonals from each end of wall		
Timber	Metal Section	Tensioned Straps
50mm x 19mm for studs up to 2.7m long 75mm x 19mm for studs over 2.7m long Fixing: galvanised flat head nail 2.8mm dia. x 50mm long to each plate and stud.	18mm x 16mm x 1.2mm min. galvanised angle brace fixed with one 2.8mm dia. x 30 long galvanised flat head nail to each plate and stud edge.	Flat galvanised straps 0.8mm thick x 20 wide. Fixings: one galvanised flat head nail 2.8mm dia. x 30mm long to each plate and stud edge. Tension straps.

Type 'A' Bracing – Single diagonal at end of wall.	
Timber	Metal Section
75mm x 19mm min. fixed with two 2.8mm dia x 50mm long flat head galvanised mails to each stud and plate.	Galvanised angle brace fixed with two 2.8mm dia x 30 long galvanised flat head nails to each plate and stud

Type 'B' Units (design racking resistance of 4kN. The following bracing units are deemed to be satisfactory type 'B' braces

- A pair of diagonal galvanised metal tension straps of minimum nominal dimension 30mm x 0.8mm in opposing directions on one side of timber frame. Ends of straps shall be bent over top and bottom faces of plates and fixed with four 3.15mm dia. x 30mm long galvanised flat head nails. Braces shall be fixed to stud edges with two similar nails to each crossing. End studs of braces section shall be strapped to top and bottom plates with 30mm x 0.8mm galvanised strap looped over plate and fixed to studs with four galvanised flat head nails 3.15mm dia x 30mm long each end of loop.
- A 900mm minimum wide panel of structural plywood as shown in figure (D). Fixed as follows:

Plywood stress grade F8	Stud spacing 450mm to be 7mm thick ply.	Stud spacing 600mm to be 9mm thick ply.
Plywood stress grade F11	Stud spacing 450mm to be 6mm thick ply.	Stud spacing 600mm to be 7mm thick ply.
Plywood stress grade F14	Stud spacing 450mm to be 4mm thick ply.	Stud spacing 600mm to be 6mm thick ply.

Fixing: 2.8mm dia x 30mm long galvanised flat head nails at 50mm centres along top and bottom plates, 150mm centres along vertical edges and 300mm centres along intermediate studs.

SARKING:

Where sarking is specified or required by any authority the selection of and fixing shall be in accordance with the code of practice as specified in AS/NZS 4200 for pliable roof sarking or reflective foil laminates. All installations must comply with the requirements of BCA part 3.7.4. and AS3959 in Bushfire prone areas.

FLOORING - BCA part 3.4.3

T & G STRIP FLOORING: BCA table 3.4.3.1:

Flooring shall be seasoned and stored in a way to preserve its delivery condition. Flooring boards shall be laid in straight and parallel lines with tongues fitted into grooves and cramped together with pressures suited to moisture content and seasonal conditions. End joints shall be made on a joist and joints in adjoining boards shall be staggered. Flooring shall be kept 12mm clear of walls or wall plates parallel with the direction of laying. Boards of normal width of 75mm and less shall be fixed with one nail at each joist and boards over 75mm shall be fixed with two nails at each joist. Nails in faces of boards are to be well punched to allow for subsequent sanding and stopping. Boards profiled for secret nailing are to be skew nailed through tongues at each joist with nail punched to permit the full entry of the tongue into the groove. Flooring is not to be cut in and fixed before roofing is complete, external walls sheathed or lined and all external openings covered.

SHEET FLOORING:

The minimum height of sheet flooring above ground level and under-floor ventilation shall be in accordance with manufacturers instructions or as required by Council or Lending Authority.

Where sheet flooring is used in platform construction and a decorative finish is required it shall be sealed with a water repellent at time of fixing.

a) Structural Plywood: shall be manufactured in accordance with AS2269 and sheets stamped on the face side with manufacturers name or trade mark. Sheets shall be fixed in accordance with manufacturers instructions as approved.

b) Particle Board: Approved board bonded with phenolic resin to achieve a type 'A' bond as defined in AS/NZS4785 for plywood may be used in platform construction or as fitted flooring. Boards shall be fixed in accordance with manufacturers instructions as approved. The perimeter of flooring should be fully supported by joists or noggins. Other approved particle board may be used providing it is a minimum of 2100mm above the ground.

c) Compressed Fibre Cement: Sheet flooring not less than 18mm thick with density of not less than 1.8g/cm3 may be used in lieu of suspended concrete floors. Sheets shall be fixed in accordance with manufacturers instructions adequately flashed and suitably finished.

ELECTRICAL INSTALLATIONS

Provide all labour and materials necessary for the proper installation of electrical services in accordance with the appropriate AS Rules and requirements of the Local Supply Authority. Arrange with the supply Authority for connection from supply main to meter board. Provide for the proper installation and connect electricity stove/s and hot water unit/s. Provide light and power points as indicated on drawings or as directed and in accordance with AS/NZS1680. Provide box to enclose meters in accordance with the requirements of the Authority concerned. Arrange for inbuilt wiring for telephone, television, computer and security installation as required. AS/NZS 3000 specifies the minimum requirements including safety provisions.

LIGHTING; BCA 3.8.4 Natural lighting must be provided to all habitable rooms of a class 1 building by windows or roof lights or a proportional combination of both, or by light 'borrowed' from an adjoining room. Windows must have a clear aggregate light transmitting area of not less than 10% of the room floor area, and face a court or open verandah/carport. If facing the boundary of an adjoining allotment, must be 900mm min. from that boundary. Roof lights must have a clear aggregate area of not less than 3% of the floor area of the room and face the sky. 'Borrowed' light can be supplied by a clear glazed panel or opening that is not less than 10% of the floor area of a room supplying the light if that room complies with the natural light requirements. Artificial lighting of one lightfitting per 16 sq. metres of floor area must be provided to sanitary compartments, bathrooms, airlocks, showers etc. if natural lighting cannot be supplied.

SMOKE DETECTORS / ALARMS : BCA part 3.7.2 Fire/smoke detectors selected by the owner and complying with the requirements of the Local Government Act and/or state or territory regulations must be fitted in the locations required and approved by the regulatory authority and shall be installed in accordance with AS3786.

LIGHTNING PROTECTION:

Where lightning protection is specified by the proprietor or required under regulatory provisions it shall be installed in accordance with AS1768.

EXTERNAL WALL CLADDING - BCA part 3.5.3

WEATHERBOARDS OR PROFILE SHEETING:

as approved by the leading authority shall be fixed and flashed in accordance with manufacturers instructions and to the satisfaction of the lending authority. Weatherboards with laps as specified by the relevant AS shall be hardwood, pressure treated radiata pine or slash pine, cypress pine, baltic pine or western red cedar. The boards shall have a maximum moisture content of 15% be in long lengths with staggered end joints, securely nailed and fitted with angle stops. Western red cedar used externally shall be fixed with galvanised or cadmium plated fasteners. Boards exceeding 100mm in width shall be double fastened at all bearings. All boards shall be primed or sealed all around including rebates and ends before fixing. Where vertical boarding is used it shall be fixed to battens at not more than 600mm centres and sarking acceptable to the lending authority placed behind the battens to provide air space and fixed to the frame work with adequate provision for discharge of moisture. External boarding shall be in one length or have joints specially designed for external use.

FIBRE CEMENT:

a) Flat Sheeting: Fibre cement sheeting shall be not less than 4.5mm thick and close jointed to full height of walling or above sill level where weatherboard dados are specified. Horizontal joints shall be flashed with 0.42mm galvanised steel turned up 13mm against stud faces and down 12mm over sheet faces, lapped 25mm at joints. Internal angles of walls shall be flashed with 38mm x 38mm x 0.42mm minimum base thickness galvanised steel angles or bitumen coated metal flashing to full height of studs and lapped 50mm at joints. All vertical and horizontal joints and angles shall be covered with timber, fibre cement mouldings as approved by the lending authority. Trimmers of not less than 75mm x 38mm timber shall be provided between ends of floor bearers to support lower edge of sheeting.

b) Profiled sheeting and Weatherboard: As approved by the lending authority shall be fixed and flashed in accordance with the manufacturers instructions and to the satisfaction of the lending authority.

INTERNAL LININGS

Line all internal walls not specified as otherwise with Gypsum plaster board fixed horizontally in full length sheets, or with staggered end joints to ceiling height. Sheets to have recessed edges and of thickness as recommended by the manufacturer for the stud, batten or support spacing. Fixing is to be with galvanised clouts, manufacturer approved screws and/or approved adhesive and be strictly in accordance with manufacturers instructions. Set all internal angles. Note: Where below 1200mm in laundry, bathroom and W.C. and at back of kitchen sink unit and below 1800mm in shower recess, only approved water repellent sheet shall be used. Note: Adhesives must not be used to fix sheets in tiled areas.

FIBREBOARD:

Sheets shall not be less than 4.5mm thick except where tiled. Sheets to be tiled shall not be less than 6mm thick. Where flush jointing is required fibreboard sheets shall be used, fixed and jointed in accordance with manufacturers instructions.

CEILING LININGS

Provide Gypsum plaster board to all internal ceilings unless otherwise specified. Sheets to have recessed edges and to be 10mm thick when fixed to ceiling battens/joists spaced at not more than 450mm and 13mm thick for 600mm spacings. Fixing is to be with galvanised clouts and/or approved adhesive and is to be in accordance with manufacturers recommendations as approved. Provide selected cornices, neatly mitred, properly fixed and scrimmed and set at all joints in full wall lengths where practicable. Gypsum plaster board for ceilings and walls shall be as per AS2589. Sheets of different thickness may be used at other spacings where their manufacture and installation complies with the Deemed to Satisfy Provisions.

PLASTER AND RENDER

To all brick walls not specified as feature brickwork or otherwise (with exception of garage) apply render to minimum thickness of 12mm. Render to consist of one part fresh cement to 3 parts clean sand with 10 per cent hydrated lime added. Use only whilst fresh. All brickwork to be well wetted before plastering is commenced. Point up all flashings externally with cement mortar and make good as required after other trades.

JOINERY

Joinery timber is to be of species seasoned and free from those defects that might effect its appearance and/or durability. All to be D A R accurately cut and fitted, properly mitred and scribed as required and securely fixed. All surfaces to be left free of mill marks or other defects, filled where necessary and ready for painting or staining. Where wood plugging is required it shall be a suitable species properly seasoned.

DOOR FRAMES – BRICK BUILDINGS:

Shall be at least 100mm x 50mm solid rebated properly dowelled to thresholds. Mullions shall be 75mm thick and double rebated.

JAMB LININGS – INTERIOR DOORS ALL BUILDINGS, EXTERIOR DOORS TIMBER FRAMED AND BRICK VENEER:

Linings shall be a minimum of 38mm thick solid rebated to all door openings. Where return plaster reveals occur linings shall be 75mm x 50mm rebated. Alternatively for internal doorways 25mm linings may be used with 12mm planted stops. In brick veneer and timber framed construction 12mm clearance shall be provided over jamb linings to external openings. Linings to openings not having doors or to have swing doors are to be 25mm thick timber securely fixed. Other proprietary linings may be approved by the owner.

DOORS: Fit accurately to door frame. Hang external doors with three 88mm steel butts and internal doors unless otherwise specified with two 88mm steel butts. External doors shall not be less than 2040mm x 820mm x 40mm thick. Where sheeted with plywood, waterproof plywood only shall be used. All framed glazed doors (external or internal) shall be minimum of 40mm thick. Internal doors shall be minimum of 35mm thick and free of warping.

WINDOWS AND FRAMES: In brick veneer construction 10mm clear space shall be left between underside of sill and brickwork. In two storey construction with hardwood timber framing the clearance shall be increased to 20mm.

INSTALLATION:

All windows shall be installed in accordance with the requirements of AS2047-48 for Aluminium windows and AS2047 for timber windows.

STAIRS, HANDRAILS AND BALUSTRADES: BCA 3.9.1 and 3.9.2

Stairways shall be constructed to the layout as shown on plans with treads of equal dimensions except where shown or where winders are required. All risers in any flight shall be of equal height. All flights shall have a minimum of 2 and not more than 18 risers. Relationship of riser to going shall be between 1:2 and 1:1.35 unless otherwise directed or as permitted in AS1657. Balustrades shall be provided to all landings, ramps, decks, roofs and other elevated platforms where the vertical distance from that level is more than 1 metre above the adjoining floor or finished ground level. Height of the balustrade must be a minimum of 1 metre above landings etc. and not less than 865mm above the nosings of any stair treads or floor of a ramp. Openings in balustrades (decorative or otherwise) and space between treads, eg. riser opening must not allow a 125 mm dia sphere to pass through. Resistance to loading forces of a balustrade must be in accordance with A.S. 1170. Where balustrades are constructed of tensioned wires provision shall be made to maintain the wire tension.

ACCESS AND MOBILITY

Where access and mobility requirements are to be addressed in the construction of a new building, AS1428 General Requirements for Access – New Building Work contains the minimum design requirements to enable access for people with disabilities. The design must comply with 'Access to Premises Standards 2010' as referenced in the BCA. A link for advice on the 'Disability (Access to Premises)- Building Standards 2010' is :- <http://wst.tas.gov.au/industries/publications>.

PLUMBING AND DRAINING: National Construction Code Vol 3 PCA (Plumbing Code of Australia) commences 1/7/2012**EAVES GUTTERS VALLEY GUTTERS AND DOWNPIPES:**

Eaves gutters and downpipes of material and finish as nominated on drawings shall be installed as per manufacturers specification to all eaves as required with falls to downpipes in positions shown. All items shall be of material compatible with roof covering and to comply with AS/NZS2179 for metal and AS1273 to UPVC components.

FLASHINGS:

Flash around chimney stacks, exhaust flues and wherever else required with approved flashings dressed well down onto roof slopes and taken vertically at least 75mm. Wedge step flashing into brickwork joints and point up with cement mortar. Eaves gutters, valleys and roof flashings shall be selected from materials compatible with each other and the roof covering to prevent bi-metallic corrosion. (See BHP publications TB8, TB15). Use of lead for flashings, gutters, downpipes and roofing is prohibited if the roof will collect potable water.

WATER SERVICES:

Where a reticulated water supply is available all work shall be carried out by a licensed water plumber. All water supply installations shall be carried out in accordance with 'National Construction Code' Vol 3 APC.

RETICULATED RECYCLED WATER:

Where a utility supplied reticulated recycled water supply is connected as a dual reticulation it is important that no cross connection between the potable and recycled water can occur. There must be at least one external tap for each system and the recycled water system must have lilac coloured components. Identification markings and signage shall be installed as per AS1319 and AS1345. Recycled water cannot be used for human consumption or contact, household cleaning, personal washing or irrigation where fruit and crops are eaten raw or unprocessed.

WET AREAS: BCA 3.8.1

Building elements in wet areas must be water resistant and/or waterproof as listed in table 3.8.1.1 of the BCA Vol 2 and constructed in accordance with AS3740. Water resistance or Waterproofing varies in respect of different building elements such as :- floors and horizontal surfaces, walls, wall junctions and joints, wall and floor junctions and penetrations.

HOT WATER SERVICE:

All installations must comply with AS3500.4 Provide from H/water unit with selected tubing to points necessary. Terminate with taps selected. Provide inlet stop cock to hot water unit. Storage water heaters selection and installation to be as per AS1056.

GAS SERVICE:

The whole of the work is to be carried out as per requirements of the Local Supply Authority. The plumber is to be responsible for the gas service from boundary alignment, including fixing of the meter and cover for same. Installations for bottled gas supply shall comply with the relevant standard. Gas installations shall comply with 'Gas Safety Regulations and Act' and AS5601.

HEATING APPLIANCES BCA 3.7.3: Domestic type Oil, Gas and Solid Fuel heater installations shall comply with AS/NZS2918'Domestic solid fuel burning appliances – Installation'. Installation of gas fired appliances shall be carried out by a licensed gas plumber.

SEWERED AREAS:

Provide a drainage system from pedestal pan and from wastes of all fittings unless a grey water system is to be installed and connect to the sewer main, where shown on site plan all to be in accordance with the rules and requirements of the Authority for Water Supply and Sewerage. Provide at least one gully outside the building. The Authority Certificate to be produced at Completion of the Work.

UNSEWERED AREAS:

Provide a drainage system from all fittings and from grease trap in accordance with the requirements of the Local Authority concerned. Excavate for drains to provide even falls throughout and a minimum cover of 300mm. Lay 100mm socketed vitrified clay, P V C or HDPA pipes to take discharge from wastes of washtubs, bath, shower, washbasin and grease trap. All pipes to be completely jointed with rubber rings or solvent cement as approved. All drain lines to be laid so that water is discharged into an absorption trench provided in position shown on plan. Provide an approved grease trap with lid in position shown to take the water from kitchen sink. Top of trap to be 75mm above finished ground or nearby concrete paving level. All drainage work from fittings to the drainage line outside the building to be in accordance with the rules and requirements of the Water Supply and Sewerage Authority for sewer areas. That Authority 'Special Inspection' Certificate of the work to be produced by the builder. All plumbing and drainage shall be in accordance with the Code of Practice for state or territory and regulating local government area.

GREYWATER REUSE SYSTEMS:

Where a greywater reuse system is proposed the installation shall comply with the following Australian Standards and Codes: AS1546 parts 1 and 3: AS1547: NSW Health 1998 AWTs guideline: NSW Health 2000 Domestic greywater treatment guidelines and sewer single domestic premises. An on site greywater reuse system is not permitted in Reticulated Recycled water areas. Domestic Greywater Treatment Systems (DGTS) and Aerated Wastewater Treatment Systems (AWTS) require a certificate of accreditation from NSW Health.

SEPTIC SYSTEM:

In position shown on site plan provide and install septic system as nominated by the proprietor together with a holding tank and length of absorption trench installed in accordance with the manufacturers instructions and the requirements of the Local Authority. Installations shall comply with AS1546 part 1.

STORM WATER TREATMENT METHODS::

Provide roof water drains from downpipes and from grates in paving where shown on site plan. Drains to be 100mm socketed vitrified clay pipes or PVC laid to an even and regular fall so as to have a minimum cover of 150mm. Drains to discharge into street gutter where possible. Where outlets are shown within the site they are to discharge at least 3000mm clear of the building into rubble packing 600mm diameter and 600mm deep. Acceptable solutions for stormwater drainage to be as per AS/NZS3500 part 3. Stormwater treatment systems should satisfy the following performance requirements:-

1. Conserve Water
2. Prevent Increases In Flooding/Erosion
3. Maintain water balance
4. Control Stormwater Pollution.

Systems suitable for detached dwellings are:- Roof/rainwater tanks: Detention devices: Infiltration devices and Filter strips. These are also suitable for multi-dwelling developments in addition to Stormwater tanks and Bio retention devices.

RAIN WATER TANKS:

Install rainwater tanks of selected material on slab or support as nominated by tank manufacturer. Rainwater tanks may be trickle topped up (max. 2litres/minute) from a potable water supply main and internally reticulated. A dual supply system should have no direct or indirect connection between the mains potable supply and the rainwater tank supply. Inground concrete tanks may be installed as an option with a suitable pressure pump and a testable backflow prevention device as per AS/NZS2845.1 Where an above ground tank is connected to internal reticulation, a meter with a dual check valve is to be installed and a visible air gap between the mains supply and the rainwater tank as per AS3500 and AS2845.2.1. (See NSW Health circular: Use of rainwater tanks where a reticulated mains water supply is available).

DRAINS FROM UNDER BUILDINGS: NOTE- AS 2870 REVISION

All stormwater, sanitary drainage or other discharge pipes emerging from under a building footing or slab or attached to a building shall have a flexible joint incorporated into the pipework outside the footing or slab and within 1 metre of the building perimeter.

NOTE: Drain pipes must not be taken through the footings of the building. All seepage and soakage water is to be effectively dealt with and diverted clear of the buildings as shown on site plan. Trenches for drains, where running parallel to the building must not be within 600mm of the footings of the building.

WALL AND FLOOR TILES

For guidance on installation of ceramic tiles see recommendations as set out in AS3958 parts 1 and 2.

WALLS:

Cover the following wall faces with selected glazed tiles:

To bathroom generally to a height of 135mm.

To bath recess: to a height of 1350mm.

To shower recess to a height of 1800mm.

To enclosing of bath and hobs

To WC to height of one row of tiles or as directed

Above kitchen sink/s and cooking area/s allow for four rows tiles. Finish at top and salient angles with round edge tiles. Provide vent tiles and selected recess fittings. Tiles to be fixed to a backing of Fibre Cement with approved adhesive. Areas for tiles can be increased by proprietors direction or as noted on plans.

FLOORS: Cover floors of bathroom, shower recess, WC and ES with selected tiles, set in cement mortar or approved adhesive and graded to give an even and adequate fall to floor waste.

PAINTING

All paints, stains, varnishes and water colours are to be of approved brands as selected. Materials used for priming and undercoating are to be the same brand as the finishing paints or as recommended by the manufacturers of the finishes used. All finishing colours are to be selected by the proprietor. Do all necessary stopping after the priming has been applied. Rub down all surfaces to a smooth finish prior the application of each successive coat of paint. External joinery or other exposed woodwork to have a clear plastic finish is to be treated with a priming oil containing wood preservative and a water repellent.

EXTERNALLY: All external woodwork to be given one coat of primer, one coat of oil based undercoat and one coat of gloss finish enamel or to be given one coat of clear primer, one coat of flat clear plastic and one coat of clear plastic.

PRIMING WEATHERBOARDS: Any pine is to be primed all round as well as on the ends. Before fixing; hardwood, cypress pine, radiata pine and oregon are to be primed on external faces including rebates. Pressure treated Canada pine is to be primed at ends before fixing.

IRONWORK:

Eaves, gutters, downpipes, exposed service pipes and wrought iron etc. to be cleaned and primed and give one coat of gloss paint all round.

FIBRE CEMENT: Clean and prepare all external fibre cement surfaces and finish with two coats of water based paint.

INTERNALLY: All exposed woodwork in kitchen, bathroom, laundry WC EC to be prepared primed and then given one undercoat and finished with one coat of full gloss paint or to be stained and finished with two coats of clear liquid plastic as selected.

CEILINGS: To be given one coat of sealer and two coats of paint. The finishing coat of bathroom, laundry, and kitchen ceilings to be semi gloss (unless directed otherwise).

WALLS: All rooms except bathroom, laundry and kitchen to be given one coat of sealer and two coats of water based paint. To bathroom, kitchen, WC EC and laundry where no tiled or pre surfaced material is required, walls are to be given one coat of sealer, one coat of undercoat and one coat of gloss oil paint system.

GLAZING: BCA part 3.6

All sashes, doors, fixed lights and other glass in building shall be selected and installed by procedures as set out in AS1288 and/or AS2047 for type, thickness and area of glass according to wind loading, human impact and other considerations for glazing in frames of timber, steel, stainless steel, aluminium and bronze according to type of frame, height of building and glazing compound and for design and glazing of unframed toughened glass assemblies. Specific attention should be made to the selection of frame materials, glazing, location in walls and orientation to the path of the sun for various climate zone. Where windows are not shaded by roof, eaves or other building projections, advice by an approved specialist or manufacturer should be sought to ensure that all installations comply with the Energy Efficiency requirements of the BCA. (Or BASIX in NSW).

FENCING

Provide paling fence 1500mm height to side and rear boundaries. Posts to be 125 x 50mm in sawn approved durable hardwood, morticed for two rails and sunk into ground 600mm at maximum of 2700 mm. Posts at angles in fencing to be 125mm square. Well ram around posts. Where rock is encountered posts are to be set in concrete. Fit two rows of 75 x 50mm hardwood rails into mortises. Cover framing with hardwood palings. Double nail to rails at top and bottom. Cut line at top and lop corners. All timber in ground or concrete to be well tarred or treated with an approved preservative. Allow for repairing any existing recommendations of the manufacturer. Provide front fencing as directed

SWIMMING POOL FENCING:

Swimming pool fencing is to comply with BCA Vol 2 F.2.5.2(a) in conjunction with the Swimming Pools Act 1992 and Swimming Pool Regulation 2008. This applies to fencing of any pools with a depth of water exceeding 300mm.

ALPINE AREAS:

For buildings to be constructed in an alpine area, compliance with the requirements of BCA part 3.7.5. is required. Alpine areas are areas above Australian Height Datum (AHD) as follows:- NSW, VIC, ACT above 1,200 metres AHD. TASMANIA, above 900 metres AHD. For sub alpine areas where significant snow loads may occur see BCA fig. 3.7.5.2. Where snow loads may be applied to a building design according to AS1170.3 is required. (see BCA 3.11.3)

CLIMATE ZONES; Climate Zones classification for various localities are shown in BCA2010 Table1.1.2. Thermal design requirements for climate zones should be as per BCA 2010 Fig. 1.1.4.

EARTHQUAKE:
Earthquake probability shall be determined to BCA 3.11.3 and loading requirements designed to comply with AS1170.4

LANDSCAPING:
The area to be landscaped shall comply with the landscape plan and requirements of the Local Council Authorities. Appropriate landscape design will reduce water usage in lawns and gardens by up to 50%. Selection of native (indigenous plants suited to the local micro climate along with exotic species from California, South Africa and the Mediterranean will normally require minimal maintenance and water use. (BASIX website: see table D.2.1 for indigenous plants in various local government areas).

CAR PARKING: All car parking and loading bays to be kerbed, guttered, sealed, drained, line marked and landscaped. Drainage of surface water into neighbouring properties is NOT permitted except where an easement is obtained. All car parks shall comply with the provision of Local Council Authorities.

COMPLETION:
The building shall be completed in every trade. Sashes, doors, locks and all other equipment shall be checked and left in a satisfactory operating condition. Timber floors shall be at least rough sanded. Where fine sanding is specified see CA39: Code of practice for sanding interior wooden floors. All plant, surplus materials and rubbish is to be removed from site. Gutters and drains shall be cleared and the building generally to be left clean and fit for occupation.
The Builder is to furnish the Owner with:

- | | |
|---|---|
| 1 Notification of Completion | 4 Certificate from Sewerage Authority re-sanitary drainage. |
| 2 All Keys for all doors. | 5 Invoices for all PC items required. |
| 3 Certificate of termite protection treatment | |

It is the responsibility of the builder to arrange any inspections necessary by Local Council, Waterboard or Lending Authorities and/or Principal Certifying Authority.
It is the responsibility of the Owner to apply to Local Supply Authorities for connection of Electricity from mains to meter box.

APPROVAL TO OCCUPY MUST BE OBTAINED

BASIX: The Building Sustainability Index. – NSW (only)

For Class1 and 10 buildings subject to BASIX the BCA energy provisions of Part 2.6 and Part 3.12 of BCA 2009 as varied by the NSW Appendix are applicable. The National House Energy Rating Software (NatHERS) now requires Class 1 buildings to have a 6 Star Rating. Sustainability indices are assessed for Energy, Water Usage and Thermal Comfort. The policy also factors in Stormwater reuse and Landscaping but does not score these.

NSW Government targets of a reduction in mains potable water consumption and reduction in Greenhouse Gas emissions can be achieved by dwelling design and sustainability features. These features may include design elements such as recycled water, rainwater tanks, 3 star min. rated shower heads, taps and toilets, heat pump or solar water heaters, gas space heaters, eaves, awnings and insulation of walls, ceilings and roofs.

A BASIX Certificate must be submitted with a Development Application, Complying Development Certificate and Construction Certificate Application for all of NSW for new homes and for some alterations and additions.

Data required to Complete a BASIX Assessment is described in the BASIX Data Input checklist and this should be used in conjunction with the BASIX Assessment Tool.

Extracts from BASIX are reproduced by courtesy of DIPNR.

SUGGESTED ENERGY SAVING METHODS CAN BE:

Use of gas for heating hot water and cooking. Both indoor and outdoor clothes drying lines. Installing energy saving Light bulbs. To improve the efficiency of the refrigerator by ensuring there is adequate air passing over the refrigerant coils.

- The refrigerator should be completely freestanding; or at least one side or the top of the refrigeration space is completely open.

GREYWATER

- Ensure that public health and the environment are not adversely affected.
- Minimise the adverse impact on the amenity of the premises and provide for the reuse of resources.

GREYWATER DIVERSION DEVICES (GDD)

A greywater diversion device must be in accordance with the NSW Health's Greywater requirements.

DOMESTIC GREYWATER TREATMENT SYSTEMS (DGTS) must be:

- Greywater treatment system device that is accredited by NSW Health in accordance with the DTGS Accreditation Guideline,; or
- An aerated wastewater treatment system (AWTS) accredited by NSW Health or
- A facility that is purpose designed for a particular premises and has Local Government (Approvals) as per Regulation 1999,

THERMAL COMFORT

PERFORMANCE REQUIREMENTS : CAN BE ASSESSED BY THREE DIFFERENT METHODS:

Option 1: **RAPID:** Meet conditions listed in 10 questions within the BASIX Data Input checklist.

NOTE: only for simple, single storey homes (usually) brick veneer dwellings

Option 2 : **DO IT YOURSELF (D.I.Y):** tick box questions on:- Construction type, details of floors, walls, ceilings, roof, windows and skylights cross ventilation.

Option 3 : **SIMULATION METHOD:** Assessments of the thermal performance of the dwelling undertaken through the 'Simulation' method. Assessments are to be conducted by an accredited assessor using approved software.

PRECONDITIONS: The total area of all skylights must not occupy more than 2% of the gross floor area

CONSTRUCTION

(a) Walls Wall types: See wall type diagrams in Specification section insulation R-Value

CROSS VENTILATION

(a) Living area cross ventilation

1. The total area of ventilation openings in all living areas must be greater than 12.5% of the floor area of all living areas.
2. Openings must be provided on opposite or adjacent walls of every living area.

(b) Bedroom cross ventilation

1. The bedroom must contain at least two windows or a window and a skylight, which can be opened

GLAZING AND SKYLIGHTS

(a) Orientation Windows facing different directions have varying requirements to comply with BASIX Thermal Comfort requirements.

(b) Glazing and skylight types

1. Must have the characteristics nominated in Appendix1 Glazing and skylight characteristics. (Available on BASIX website)

SHADING

(a) **Eaves and projections**

1. May be an eave, horizontal opaque projection, awning or pergola and shall be made of a durable material suitable for external use.
2. The projection is measured horizontally from the face of the wall/building.
3. The eave/projection must be located no greater than 2400mm vertically above the sill of the glazing system.

(b) **Vertical adjustable external shading**

1. An adjustable shading device may comprise of shutters, louvers or panels.

(c) **Vertical fixed external shading**

1. A fixed shading device may comprise of shutters, louvers or panels. An adjacent building over 5 m in height and less than 3.1 m from glazing sill is equivalent to fixed vertical shading.

(d) **Controlling solar gain**

1. **BLOCKING SOLAR GAIN:** A shading device must restrict at least 80% of solar radiation at the summer solstice
2. **PERMITTING SOLAR GAIN:** An adjustable shading device may be allowed.

(e) **Concessions to shading requirements may be allowed.**

(a) **Insulation:** Technical and installation requirements for thermal insulation are to be in accordance with the B C A NSW Appendix **ROOF VENTILATION** Can be increased by Wind driven Ventilators and Gable End vents.

Promote the planting of indigenous plant species to preserve the character of the local environment and promote a balanced ecosystem. Ensure that the species selected are adapted to the natural rainfall patterns of the locality.

(a) *The indigenous plants for each local government area are set out in Table D.2.1. of the full BASIX Specification on www.basix.nsw.gov.au*

(b) *In addition, a plant species is considered to be indigenous to a local government area for the purposes of BASIX commitment, if the local council for that area states in writing that the species is indigenous to that local government area.*

Generation of a BASIX Certificate can only be made in the NSW Department of Infrastructure , Planning and Natural Resources BASIX website
www.basix.nsw.gov.au

ADDITIONAL BUILDING REQUIREMENTS: All instructions for work extra to that shown on the plans or any additional requirements must be in writing. Verbal instructions must be confirmed in writing and dated and signed copies are to be retained by the owner and builder.

Signed OWNER Signed BUILDER

BUILDERS LICENCE No.....

MASONRY CONSTRUCTION

Clay Bricks☐

Concrete Bricks☐

Rendered☐

MORTAR JOINTS

Colour.....

SILLS

Brick☐

EXTERNAL WALL SHEETING

Timber Cladding☐

Type.....

FLOOR CONSTRUCTION

Timber☐

FLOORING

T & G☐

Particle Board☐

DECKING

Treated Pine☐

WALL FRAMES

Timber☐

Structural Steel☐

ROOF CONSTRUCTION

Pitched Roof☐

Roof Trusses☐

Flat/Skillion☐

ROOF COVER

Concrete Tiles☐

Zincalume☐

THERMAL INSULATION

Roof/ceiling☐

Walls☐

Floors☐

INTERNAL WALL LININGS

Gypsum Plasterboard☐

Face Brick☐

WET AREA LININGS

WR Gyp. Plasterboard☐

CEILINGS

Gypsum Plasterboard☐

CORNICE

Type.....

DOOR JAMBS

Timber☐

WINDOWS

Timber☐

FLYSCREENS

Timber☐

JOINERY

Timber☐

Architrave Size.....mm

Kitchen Cupboards.....

Front Door Type.....

Other External Doors Type.....

Internal Doors Type.....

Garage Door Type.....

EXTERNAL STAIRS

Timber☐

INTERNAL STAIRS

Timber☐

Steel☐

Concrete☐

Brick☐

as manufactured by.....

Balustrade type

ELECTRICIAN

Provide:

Light Points.....

Power Outlets.....

Light fittings.....

Single Switches.....

Single.....

Smoke Detectors.....

Two way switches.....

Double.....

Exhaust Fans.....

ROOF PLUMBER

Quad Gutters (size.....)☐

Box Gutters☐

Sheerline Gutters☐

GUTTERS/DOWNPINES

Downpipes 100 x 50☐

100 x 75☐

100 x 100☐

Colorbond☐

PVC☐

Copper☐

Aluminium☐

Galvanised☐

Flex. pipe system☐

WATER SERVICE

Copper pipe☐

PVC Pipe☐

RETICULATED RECYCLED WATER

All Reticulation Systems for Recycled Water must have Lilac Coloured components and markings.

RAINWATER STORAGE TANKS

Type.....

Size.....(kl)

Nos.

Pressure Pump☐

STORMWATER STORAGE TANKS

Type.....

Size.....(kl)

HOT WATER SERVICE

Electric☐

Gas☐

Solar☐

Mains Pressure☐

Gravity Fed☐

Cylinder capacity.....litres

INTERNAL SEWER SERVICE

Copper☐

PVC☐

DRAINER

Sewer connection☐

Septic System☐

Aerated System☐

PVC pipes☐

Vitrified clay pipes☐

Copper pipes☐

FENCING

Brick☐

Paling☐

Rail☐

Brushwood☐

Front Boundary☐

Side Boundary☐

Rear Boundary☐

Colorbond☐

As manufactured by

Type

POOL

Type.....

Inground☐

Above Ground☐

Pool Cover☐

This Schedule is to be fully completed. Items applicable should be marked - items with blank spaces will NOT be included in the works

PROPRIETOR.....

BUILDER.....

DATE/...../.....

SCHEDULE OF RATES / P.C. ALLOWANCES AND MATERIALS

ITEMS	MODEL OR TYPE	PRIME COST
1. CONCRETE PIERS TO FOOTINGS		\$
2. ROCK EXCAVATION: per cubic metre		\$
3. AGRICULTURAL DRAINS: per lin. metre		\$
4. STORMWATER.....		\$
5. SEWER CONNECTIONS.....		\$
6. CERAMIC TILES WALL \$ PER M2 S/O		\$
S/O=SUPPLY ONLY FLOOR \$ PER M2 S/O		\$
QUARRY \$ PER M2 S/O		\$
7. SEPTIC INSTALLATIONS.....		\$
8. GREYWATER TREATMENT INSTALLATION		\$
9. BATHROOM VANITY & CABINET		\$
10. EN-SUITE VANITY & CABINET		\$
11. BASIN		\$
12. BATH.....		\$
13. TOWEL RAILS.....		\$
14. SOAP HOLDERS		\$
15. MIRRORS.....		\$
16. TOILET SUITES		\$
17. SHOWER SCREENS		\$
18. LAUNDRY TUB		\$
19. STAINLESS STEEL SINK		\$
20. KITCHEN CUPBOARDS		\$
21. OVEN.....		\$
22. HOT PLATES		\$
23. STOVE.....		\$
24. DISHWASHER		\$
25. EXHAUST FANS		\$
26. RANGE HOOD		\$
27. HOT WATER UNIT.....		\$
28. SMOKE/FIRE DETECTORS		\$
29. PHONE WIRING/FAX WIRING		\$
30. T.V. WIRING/COMPUTER WIRING		\$
31. INTERCOM WIRING		\$
32. SECURITY INSTALLATION.....		\$
33. AIR CONDITIONING, SINGLE UNIT.....		\$
34. INTERNAL VACUUM SYSTEM.....		\$
35. FRONT GATE.....		\$
36. FRONT FENCE		\$
37. CLOTHES HOIST.....		\$
38. CONCRETE PATHS per lin. metre.....		\$
39. GARAGE DOORS (remote controlled)		\$
40. LANDSCAPING (As per Design Supplied).....		\$
41. UNIT PAVING		\$
42. RAINWATER TANKS.....		\$
43. RETICULATED RECYCLED WATER SYSTEM ...		\$
44.		\$
45.		\$
46.		\$

Where there are additional items or different types of the same item a duplicate list should be added and agreed on by the proprietor and builder.

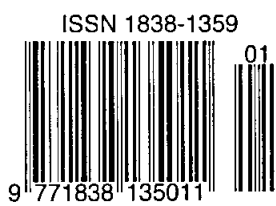
NOTE: The builder is to allow Prime Costs amounts of items set out in this Schedule above. All items to be selected by Owner. The Builders tender is to include the provision of all items, including the cost of cartage, freight, fixing and fitting as part of his contract. Adjustment for substituted fittings will be made on the basis of the prevailing retail price.

PROPRIETOR..... DATE/...../.....

BUILDER..... DATE...../...../.....

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Burkin Residence

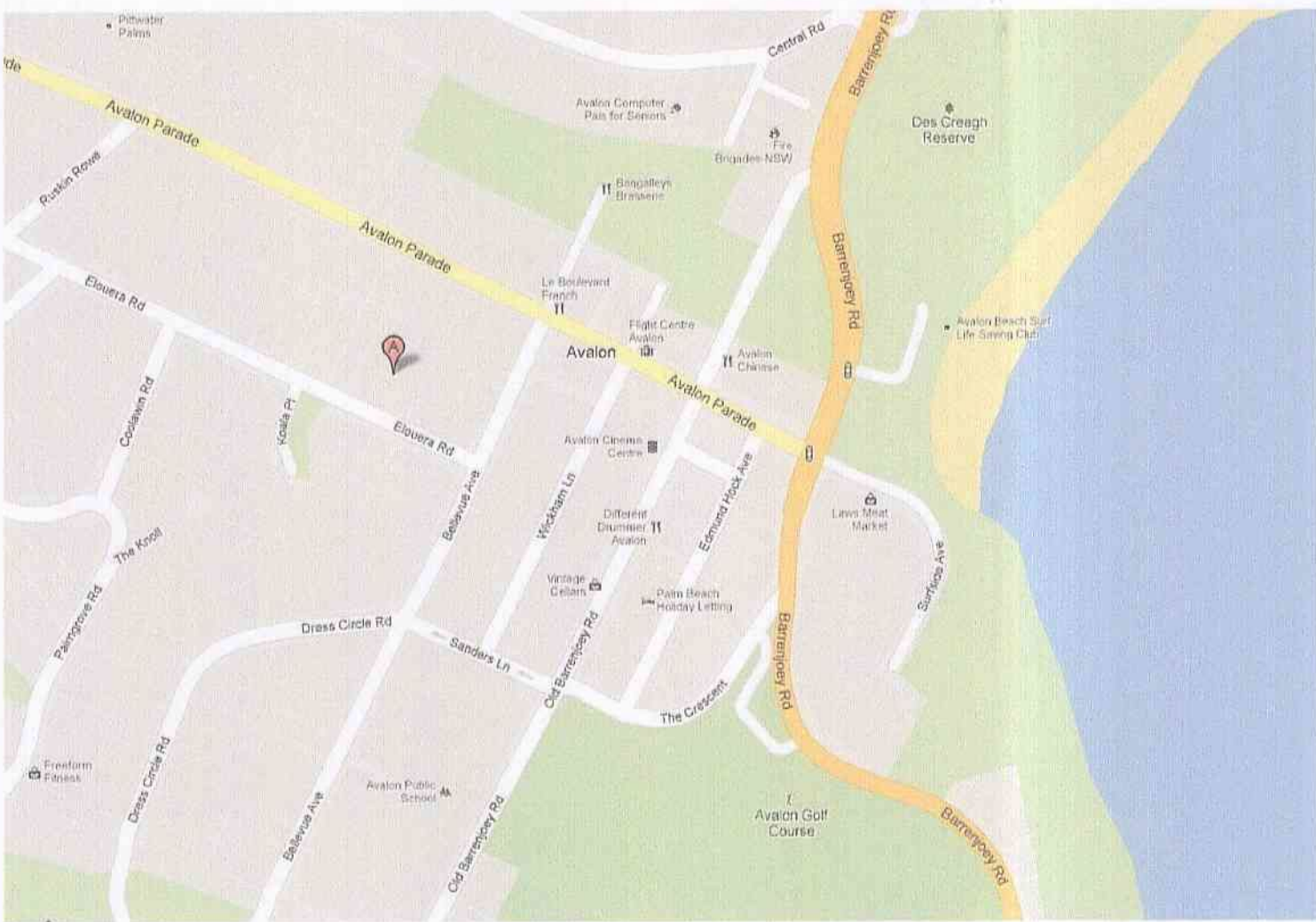
4 Elouera Road,
Avalon NSW 2107



3 PHOTO MONTAGE
1 : 1

Construction Certificate

Part demolition of the residence, remove roof of garage, alterations and additions to the existing building, relcad existing walls and landscaping



1 LOCALITY PLAN
1 : 200



2 LOCALITY PLAN 2
1 : 200

Sheet List				
Sheet Number	Sheet Name	Current Revision Description	Current Revision	Current Revision Date
A-0000	TITLE SHEET	Construction Certificate	B	21.05.2013
A-0001	PERSPECTIVES	Construction Certificate	B	21.05.2013
A-0002	PERSPECTIVES	Construction Certificate	B	21.05.2013
A-1000	SITE PLANS	Construction Certificate	B	21.05.2013
A-1300	AREA PLANS	Construction Certificate	B	21.05.2013
A-2101	FLOOR PLANS	Construction Certificate	B	21.05.2013
A-3100	ELEVATIONS	Construction Certificate	B	21.05.2013
A-3200	SECTIONS	Construction Certificate	B	21.05.2013
A-3201	SECTION CUT AND FILL	Construction Certificate	B	21.05.2013
A-3901	SHADOW DIAGRAMS	Construction Certificate	B	21.05.2013
A-3902	SHADOW DIAGRAMS	Construction Certificate	B	21.05.2013
A-3903	SHADOW DIAGRAMS	Construction Certificate	B	21.05.2013

Walter Barda Design

architecture
landscape
interiors

2.04 13-15 Wentworth Avenue Sydney NSW 2000
www.walterbardadesign.com ABN: 48 072 136 513
Office: 02 9380 2340 Facsimile: 02 9380 2324

Client

Mr Michael Burkin

Basic Requirements

certificate number: A130210

Fixtures and Systems

Hot water:
The new hot water system is to be gas instantaneous
Lighting:
40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or LED lamps.
Shower heads to be a minimum 3 Star Rating or no greater than 6L/min
Toilets to be a minimum 3 Star Rating or no greater than 4L average flush
New or altered taps to be a minimum 3 Star Rating or no greater than 6L/min
Construction
Concrete slab on ground floor:
Nil insulation requirement
Suspended floor with enclosed subfloor framed (R0.7):
R0.60 (down) or R1.20 (including construction)
External cavity brick wall: Nil insulation requirement
Roof insulation is:
75mm foil backed blanket R1.45(up), medium(SA 0.475-0.7)
Glazing Requirements
Windows:
As per basic schedule, frame and glass type to all windows and doors
timber frame, single clear, U-Value 5.71, SHGC 0.86
Skylights glazing requirements:
timber framed, low-E internal argon filled / clear external,
(or U-value:2.5, SHGC 0.465)

B Construction Certificate

21.05.2013

A Development Application

22.12.2011

No. Description Date

Revisions

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BURKIN RESIDENCE

Project Number 2011_04

4 ELOUERA ROAD,
AVALON NSW 2107
LOT 108, DP 9151

Project Status DEVELOPMENT APPLICATION

Sheet TITLE SHEET

Scale @ A1 As indicated

Drawing Number A-0000

Issue B

Drawn By MJ

Checked By MJ

Approved By WB

Print Date & Time 23/05/2013 12:03:45 PM

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This plan / document
forms part of
Construction Certificate
no. 2013 / 5060

COUNCIL COPY

Client

Mr Michael Burkin

Basic Requirements
certificate number: A130210

Picture and Systems

Hot water:
The new hot water system is to be gas instantaneous
Lighting:
40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or LED lamps.
Shower heads to be a minimum 3 Star Rating or no greater than 6L/min
Toilets to be a minimum 3 Star Rating or no greater than 4L average flush
New or altered taps to be a minimum 3 Star Rating or no greater than 6L/min

Construction

Concrete slab on ground floor:
Nil insulation requirement
Suspended floor with endosed subfloor framed (R0.7):
R0.60 (ceiling) or R1.00 (including construction)
External cavity brick wall: Nil insulation requirement
Roof insulation is:
75mm foil backed blanket R1.45 (ceiling), medium (SA 0.475-0.7)

Glazing Requirements

Windows:
As per basic schedule, frame and glass type to all windows and doors
timber frame, single clear, U-value 5.71, UHGC 0.66
Slipglass glazing requirements:
timber framed, low-E internal argon filled / clear external,
(or U-value 2.5, SHGC 0.456)

B	Construction Certificate	21/05/2013
A	Development Application	22/12/2011
No.	Description	Date
Revisions		

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BURKIN RESIDENCE		
Project Number	2011_04	4 ELOUERA ROAD, AVALON NSW 2107 LOT 108, DP 9151
Project Status	DEVELOPMENT APPLICATION	
Sheet	SITE PLANS	

Scale @ A1 As indicated

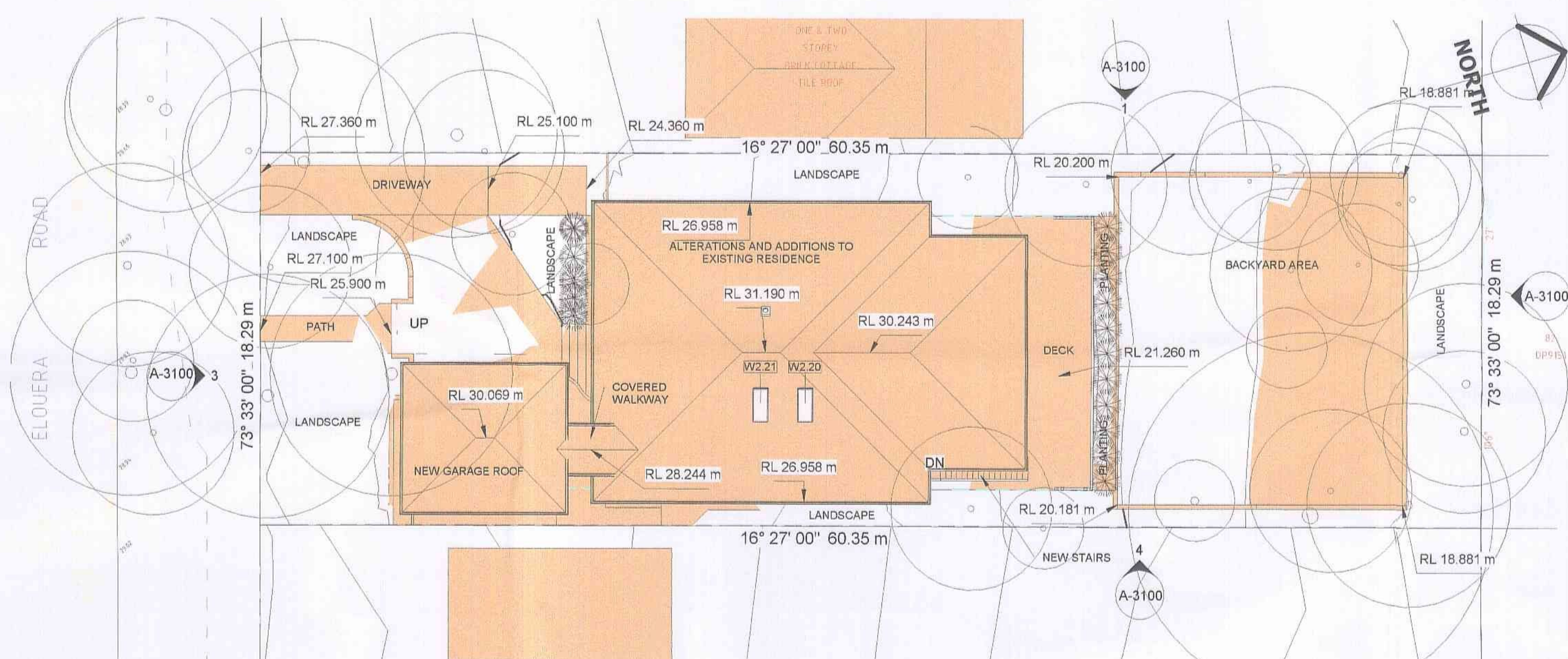
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A-1000	B
Drawn By	Checked By
MJ	MJ
Approved By	WB

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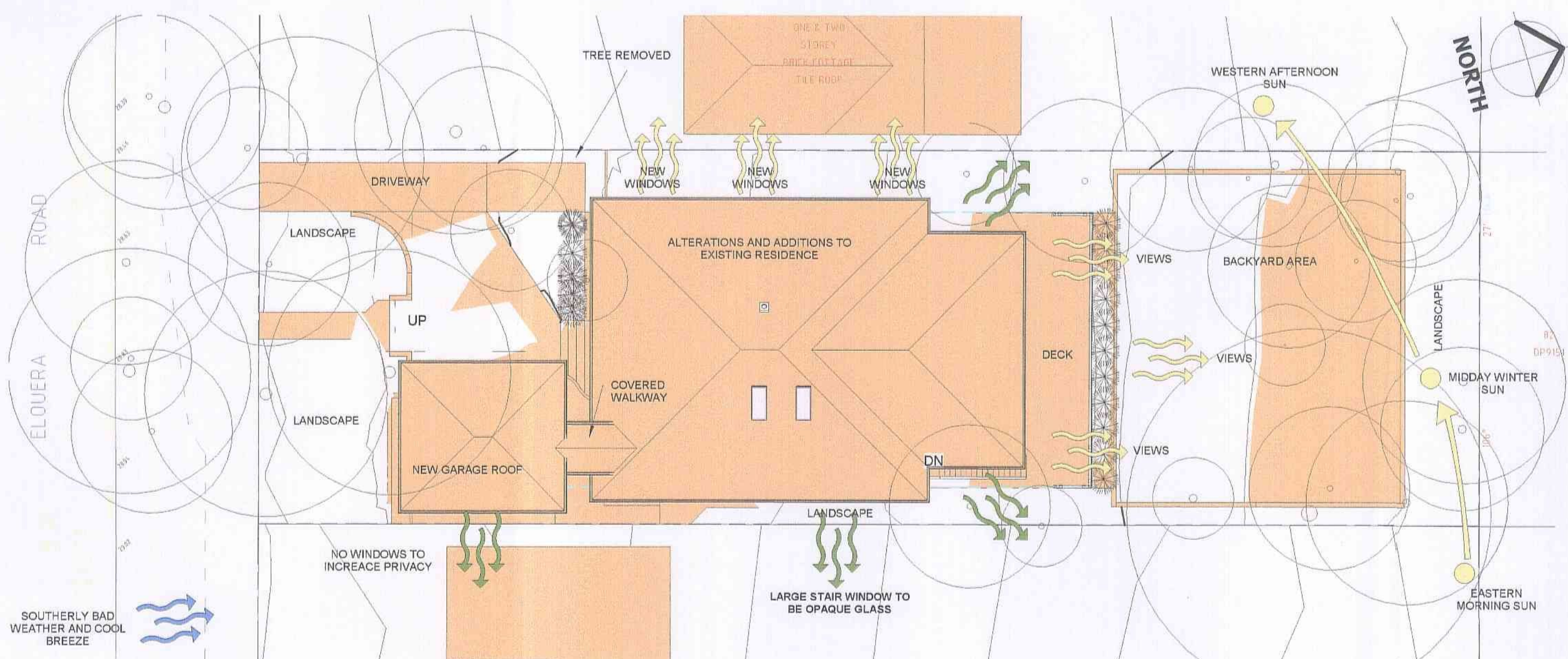
1 EXISTING SITE PLAN

1 : 200



2 PROPOSED SITE PLAN

1 : 200



3 SITE ANALYSIS PLAN

1 : 200

- Building to incorporate BASIX commitments to comply with the attached BASIX Certificate No. A130210 dated 21 December 2011
- Demolition works to comply with AS 2601 - 2001 'The Demolition of Structures'
- Smoke Alarms to be installed in accordance with AS 3786-1993 'Smoke alarms'
- Termite Management to comply with AS 3660 - 2000 'Termite Management - New Building Work'
- Glazing to comply with AS 1288 - 2006 'Glass in Buildings - Selection & Installation' and AS 2047 - 1999 'Windows in Buildings - Selection & Installation'
- Waterproofing of wet areas to comply with AS 3740 - 2004 'Waterproofing of Wet Areas in Residential Buildings'
- Doors to fully enclosed sanitary compartments to comply with Part 3.8.3 'Facilities' of the Building Code of Australia
- External Glazing & Cladding being of minimal reflectance (maximum of 20%)
- External Finishes being in natural, recessive, non-reflective colours and textures
- Balustrades construction to comply with Part 3.9.2.3 - 'Balustrades' of the Building Code of Australia
- Damp-proof membrane must be 'high impact', 0.2mm thick polyethylene film

NOTE: TREE PROTECTION MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH ARBORIST REPORT PREPARED BY NATURALLY TREES DATED 21 SEPTEMBER 2012 AND CONDITIONS D7 (I - V (INCLUSIVE)) & D8 OF THE DEVELOPMENT CONSENT.

NOTE: SEDIMENT & EROSION CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED DURING THE LIFE OF THE PROJECT.



Client

Mr Michael Burkin

Basic Requirements
certificate number: A130210

Fixtures and Systems

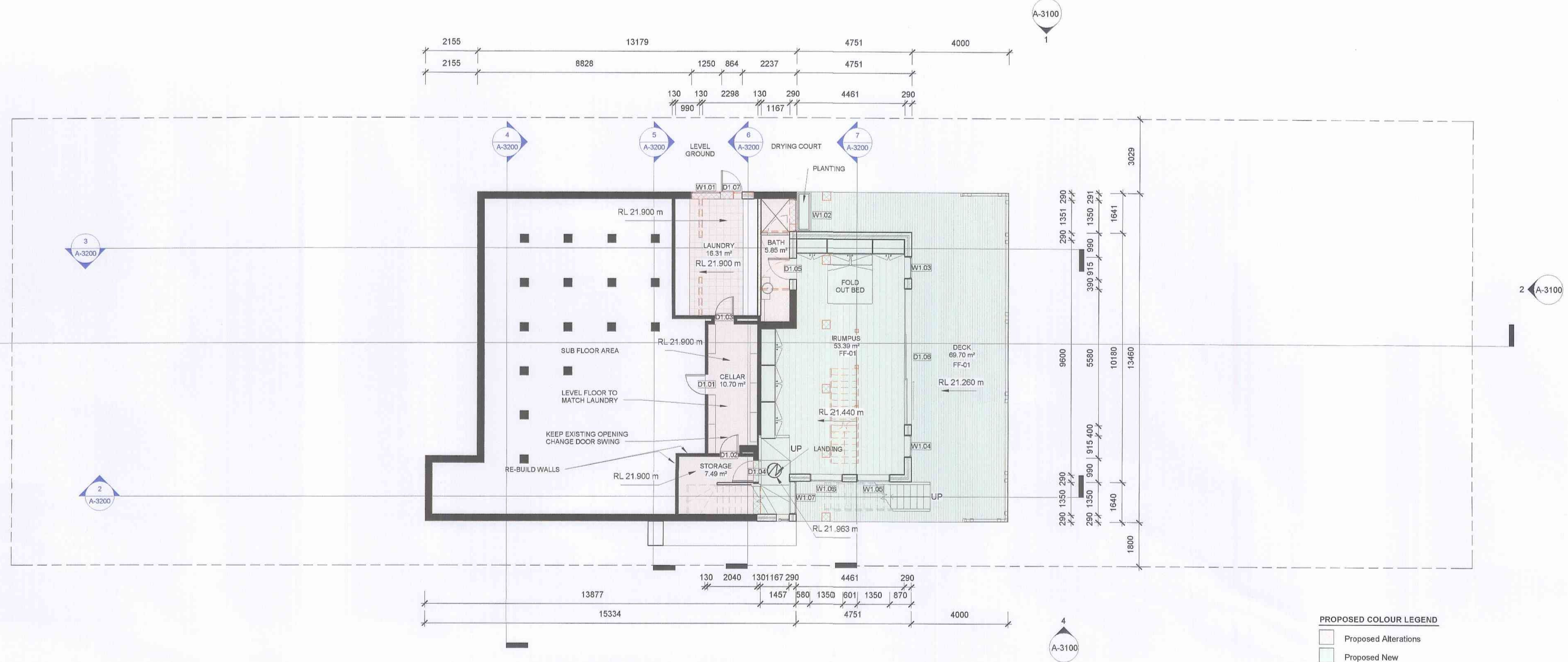
Hot water:
The new hot water system is to be gas instantaneous.
Lighting:
40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or LED lamps.
Shower heads to be a minimum 3 Star Rating or no greater than 8L/min.
Toilets to be a minimum 3 Star Rating or no greater than 4L average flush.
New or altered taps to be a minimum 3 Star Rating or no greater than 8L/min.

Construction

Concrete slab on ground floor.
Wall insulation requirement.
Suspended floor with enclosed subfloor framed (R0.7):
R0.60 (down) (or R1.20 including construction)
External cavity brick wall: Wall insulation requirement.
Roof insulation is:
75mm full backed isonite R1.45 (up), medium (SA 0.475-0.7)

Glazing Requirements

Windows:
As per best schedule, frame and glass type to all windows and doors.
Timber frame, single clear, U-Value 5.71, UHG0.06.
Skylights glazing requirements:
Timber frame, low-E internal argon filled / clear external,
(or U-value 2.5, SHGC 0.456)



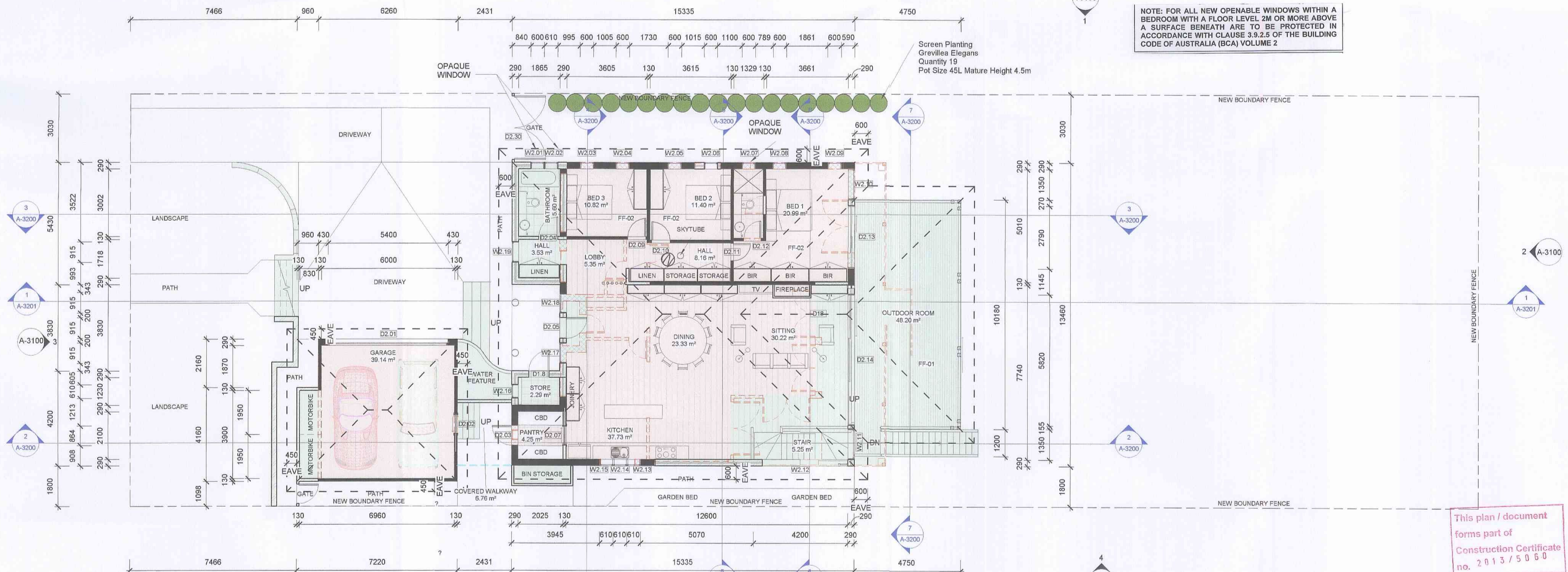
PROPOSED COLOUR LEGEND

Proposed Alterations
Proposed New

NEW LEVEL 1

1 : 100

NOTE: FOR ALL NEW OPENABLE WINDOWS WITHIN A BEDROOM WITH A FLOOR LEVEL 2M OR MORE ABOVE A SURFACE BENEATH ARE TO BE PROTECTED IN ACCORDANCE WITH CLAUSE 3.9.2.5 OF THE BUILDING CODE OF AUSTRALIA (BCA) VOLUME 2



LEVEL 2

1 : 100

suota abm.

B	Construction Certificate	21.05.2013
A	Development Application	22.12.2011
No.	Description	Date

Revisions

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BURKIN RESIDENCE		
Project Number	2011_04	4 ELOUERA ROAD, AVALON NSW 2107 LOT 108, DP 9151
Project Status	DEVELOPMENT APPLICATION	

Sheet FLOOR PLANS

Scale @ A1 1 : 100

Drawing Number	A-2101	Issue	B
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Drawn By	MJ	Checked By	MJ	Approved By	WB
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This plan / document forms part of Construction Certificate no. 2013/5060

Client

Mr Michael Burkin

Basic Requirements
certificate number: A130210

Fixtures and Systems

Hot water:
The new hot water system is to be gas instantaneous
Lighting:
40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or LED lamps.
Shower heads to be a minimum 3 Star Rating or no greater than 8L/min
Toilets to be a minimum 3 Star Rating or no greater than 4L average flush
New or altered taps to be a minimum 3 Star Rating or no greater than 6L/min

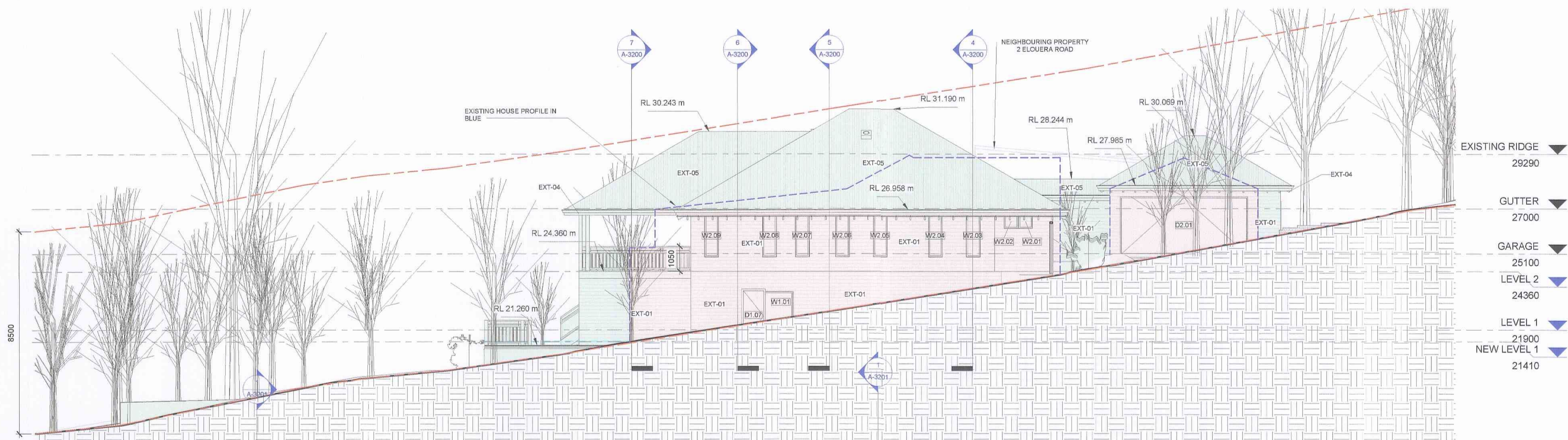
Construction

Concrete slab on ground floor:
Nil insulation requirement
Suspended floor with enclosed subfloor framed (RG-7):
R0.60 (down) (or R1.30 including construction)
External cavity back wall: Nil insulation requirement
Roof insulation to:
75mm foil backed blanket R1.45(up), medium(SA 0.475-0.7)

Glazing Requirements

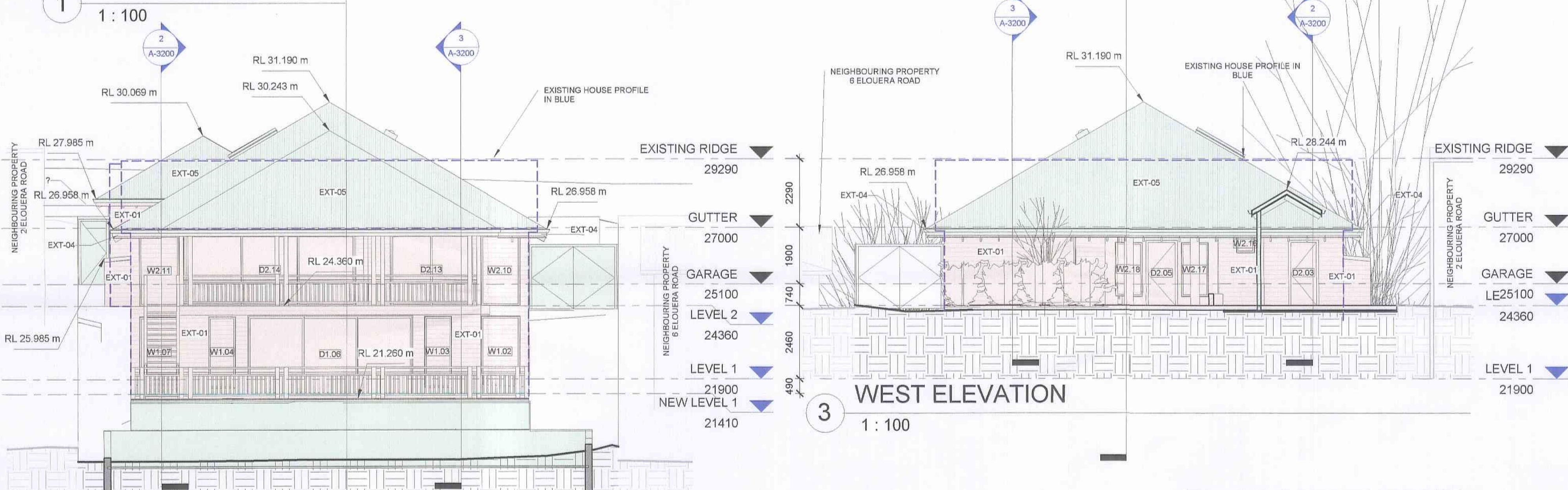
Windows:
As per basic schedule, frame and glass type to all windows and doors
timber frame, single clear, U-Value 5.71, UHGC 0.65

Skylights glazing requirements:
timber frame, low-E internal argon filled / clear external,
(or U-value 2.5, SHGC 0.45)



NORTH ELEVATION

1 : 100

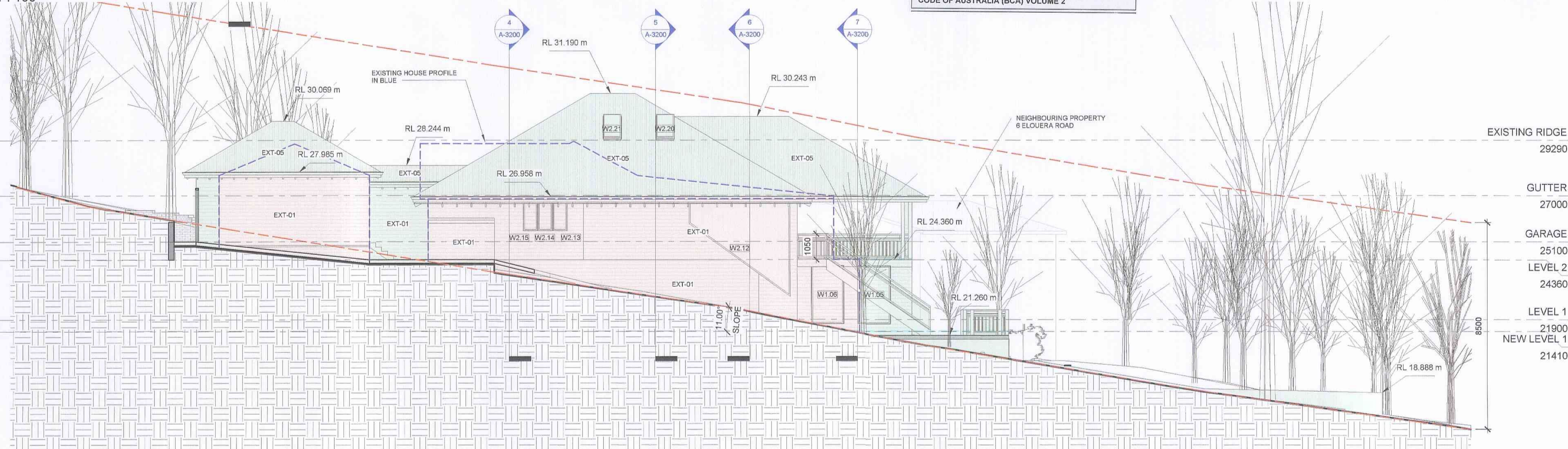


WEST ELEVATION

1 : 100

EAST ELEVATION

1 : 100



SOUTH ELEVATION

1 : 100

PROPOSED COLOUR LEGEND

- Proposed Alterations
- Proposed New

Finishes Schedule

Code	Description
FF-01	Internal Timber Flooring - 150mm x 25mm T&G Blackbutt floor boards, Stained Sikkens Dark Oak Stain (samples to be provided and approved prior to staining floors)
FF-02	Carpet - Super tuft.
FF-03	Area Floor Tile - Bisanna Tiles, Taupe Natural, 350x350mm (to be confirmed)

External Finishes Schedule

Code	Description
EXT-01	External Timber Cladding, H2 treated pine weatherboards 'Splayed' profile 200mm x 20mm, Painted Porters 'Grey Pepper'
EXT-02	External Timber Cladding, H2 treated pine weatherboards 'Log Cabin' 90mm x 20mm, Painted Porters 'Grey Pepper'
EXT-04	Eave Treatment, Raked eave lined with eco-ply shadowclad, plant on rafter ends to detail, 150mm Half Round Colorbond gutter 'Windspray', eave lining and rafter ends painted Porters 'Oyster White'
EXT-05	Corrugated roofing, colourbond windspray, gutter and downpipe colourbond windspray

Internal Finishes Schedule

Code	Description
IWF-01	Internal Wall lining, MDF wall lining sheets, smooth finish with v-joints at 150mm spacing, Skirting MDF Stamford profile 190x18mm profile, paint finish Porters Mineral Paint 'Oyster White'
IWF-02	Wet Area Wall Tile - Bisanna Tiles, Sabbia Chiaro, 700 x 350mm (to be confirmed)

NOTE: All colours to be confirmed and signed off prior to purchase of painting or coating finished surfaces

NOTE: FOR ALL NEW OPENABLE WINDOWS WITHIN A BEDROOM WITH A FLOOR LEVEL 2M OR MORE ABOVE A SURFACE BENEATH ARE TO BE PROTECTED IN ACCORDANCE WITH CLAUSE 3.9.2.5 OF THE BUILDING CODE OF AUSTRALIA (BCA) VOLUME 2

this plan / document
forms part of
Construction Certificate
no. 2013 / 5060

No.	Description	Date
B	Construction Certificate	21.05.2013
A	Development Application	22.12.2011

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BURKIN RESIDENCE

Project Number
2011_04
4 ELOUERA ROAD,
AVALON NSW 2107
LOT 108, DP 9151

Project Status
DEVELOPMENT
APPLICATION

Sheet

ELEVATIONS

Scale @ A1 1 : 100

Drawing Number	Issue
A-3100	B

Drawn By MJ Checked By MJ Approved By WB

Print Date & Time 21/05/2013 3:04:07 PM
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Client:

Mr Michael Burkin

Basic Requirements
certificate number: A130210

Fixtures and Systems

Hot water:
The new hot water system is to be gas instantaneous
Lighting:
40% of new or altered light fixtures are fitted with fluorescent, compact
fluorescent, or LED lamps.
Shower heads to be a minimum 3 Star Rating or no greater than 6L/min
Toilets to be a minimum 3 Star Rating or no greater than 4L average flush
New or altered taps to be a minimum 3 Star Rating or no greater than 6L/min

Construction

Concrete slab on ground floor:
Nil insulation requirement
Suspended floor with enclosed subfloor framed (R0.7):
R0.80 (down) or R1.30 (including construction)
External cavity brick wall: Nil insulation requirement
Roof insulation is:
75mm foil backed blanket R1.45 (up), medium (SA 0.475-0.7)

Glazing Requirements

Windows:
As per basic schedule, frame and glass type to all windows and doors
timber frame, single clear, U-Value 5.71, UHGIC 0.66
Skylights glazing requirements:
timber framed, low-E internal argon filled / clear external,
(or U-value 2.5, SHGC 0.456)

Code	Description
FF-01	Internal Timber Flooring - 150mm x 25mm T&G Blackbutt floor boards, Stained Sikkens Dark Oak Stain (samples to be provided and approved prior to staining floors)
FF-02	Carpet - Super tuft.
FF-03	Area Floor Tile - Bisanna Tiles, Taupe Natural, 350x350mm (to be confirmed)

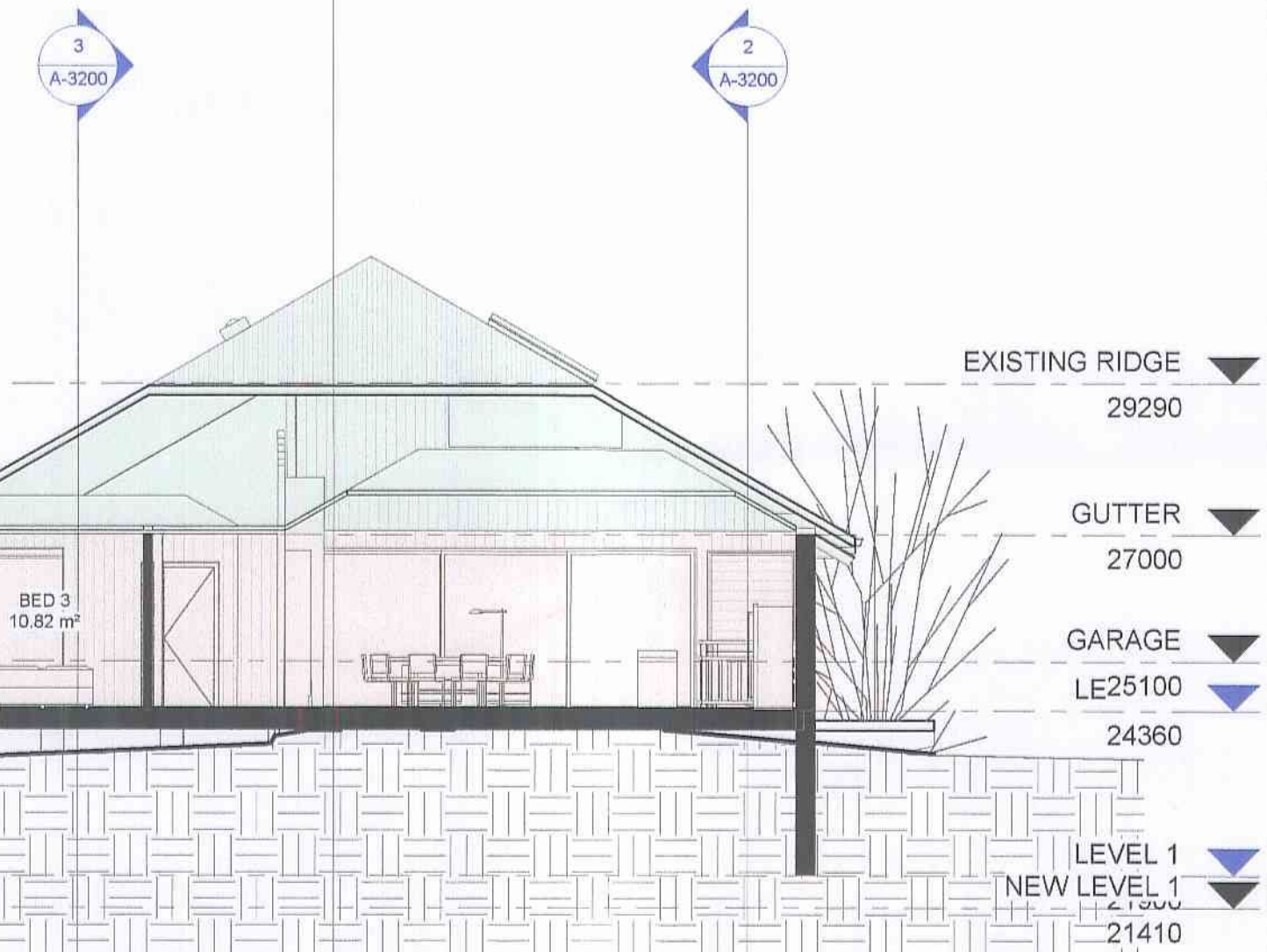
Code	Description
EXT-01	External Timber Cladding, H2 treated pine weatherboards 'Splayed' profile, 200mm x 20mm, Painted Porters 'Grey Pepper'
EXT-02	External Timber Cladding, H2 treated pine weatherboards 'Log Cabin' 90mm x 20mm, Painted Porters 'Grey Pepper'
EXT-04	Eave Treatment, Raked eave lined with eco-ply shadowboard, plant on rafter ends to detail, 150mm Half Round Colorbond gutter 'Windspray', eave lining and rafter ends painted Porters 'Oyster White'
EXT-05	Corrugated roofing, colourbond windspray, gutter and downpipe colourbond windspray

Code	Description
IWF-01	Internal Wall lining, MDF wall lining sheets, smooth finish with v-joints at 150mm spacing, Skirting MDF Stamford profile 190x18mm profile, paint finish Porters Mineral Paint 'Oyster White'
IWF-02	Wet Area Wall Tile - Bisanna Tiles, Sabbia Chiaro, 700 x 350mm (to be confirmed)

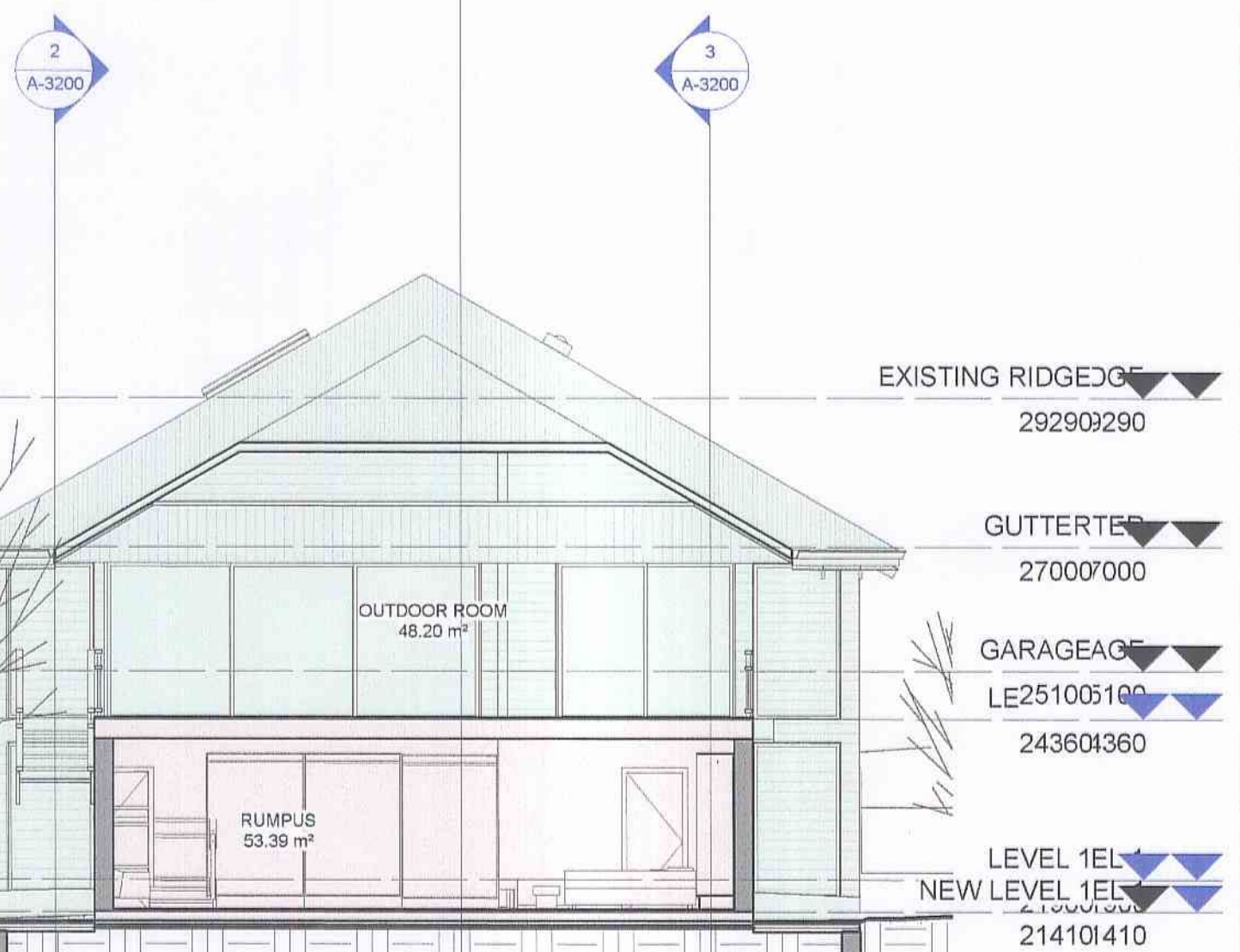
NOTE: All colours to be confirmed and signed off prior to purchase of painting or coating finished surfaces

PROPOSED COLOUR LEGEND

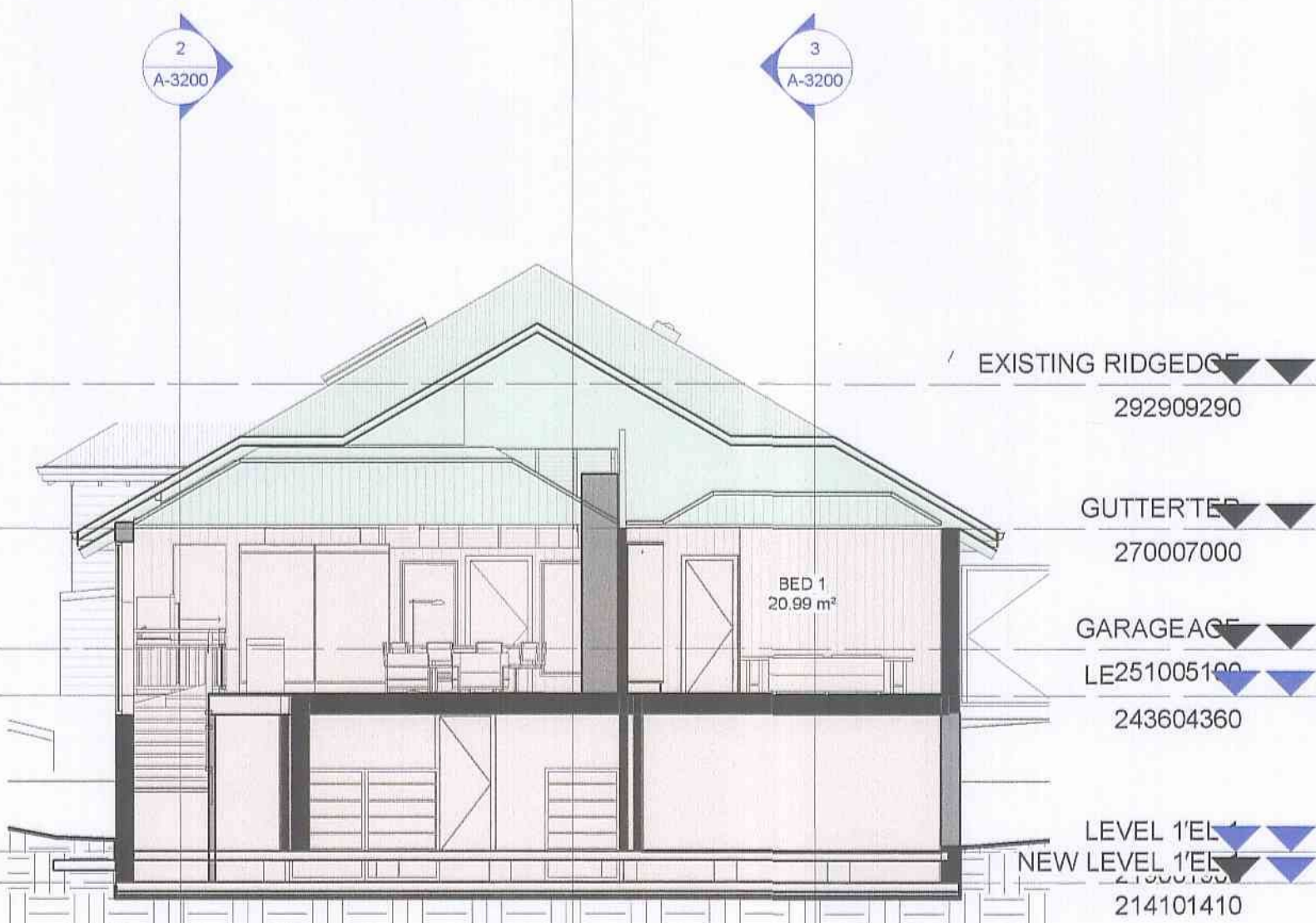
	Proposed Alterations
	Proposed New



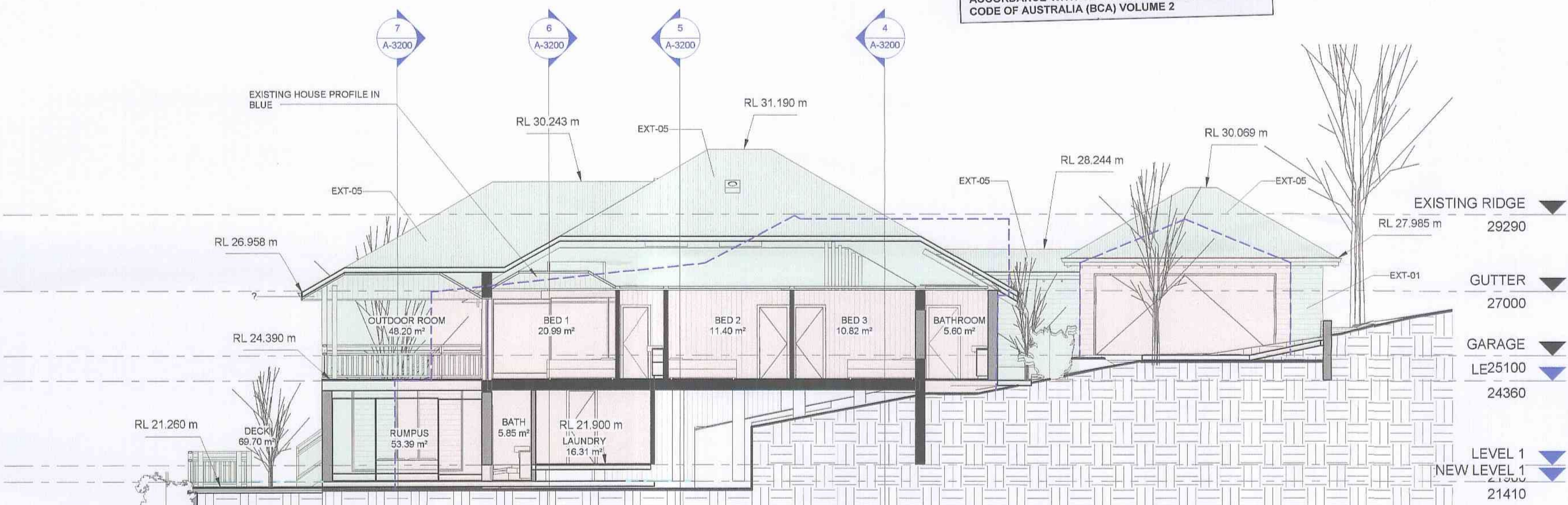
Section 5
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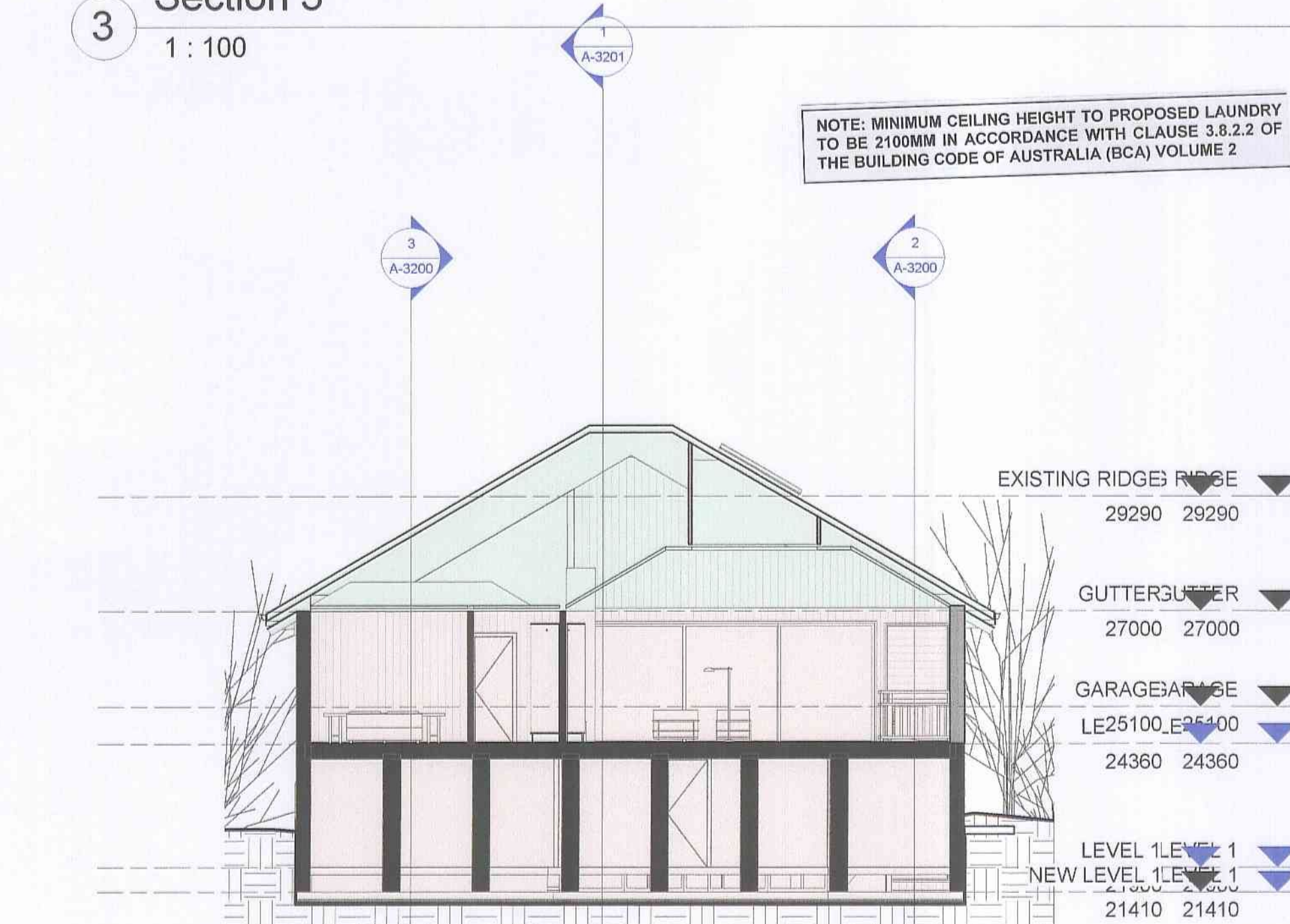
Section 8
1 : 100



Section 7
1 : 100

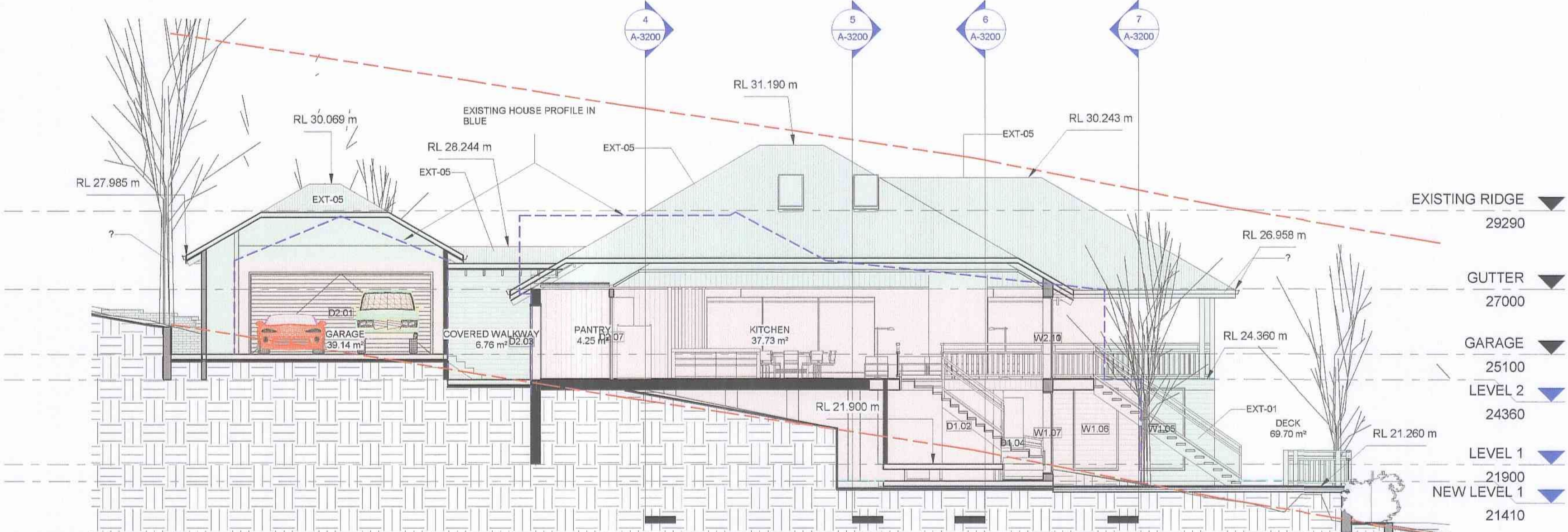


Section 3
1 : 100



Section 6
1 : 100

Section 2
1 : 100



NOTE: FOR ALL NEW OPENABLE WINDOWS WITHIN A BEDROOM WITH A FLOOR LEVEL 2M OR MORE ABOVE A SURFACE BENEATH ARE TO BE PROTECTED IN ACCORDANCE WITH CLAUSE 3.9.2.5 OF THE BUILDING CODE OF AUSTRALIA (BCA) VOLUME 2

NOTE: MINIMUM CEILING HEIGHT TO PROPOSED LAUNDRY TO BE 2100MM IN ACCORDANCE WITH CLAUSE 3.8.2.2 OF THE BUILDING CODE OF AUSTRALIA (BCA) VOLUME 2

This plan / document
forms part of
Construction Certificate
no. 2013 / 5060

B	Construction Certificate	21.05.2013
A	Development Application	22.12.2011

No. Description Date

Revisions

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BURKIN RESIDENCE
Project Number 2011_04
4 ELOUERA ROAD, AVALON NSW 2107 LOT 108, DP 9151

Project Status DEVELOPMENT APPLICATION
Sheet

SECTIONS

Scale @ A1 1 : 100

Drawing Number A-3200 B

Drawn By MJ Checked By MJ Approved By WB

Print Date & Time 21/05/2013 3:04:24 PM

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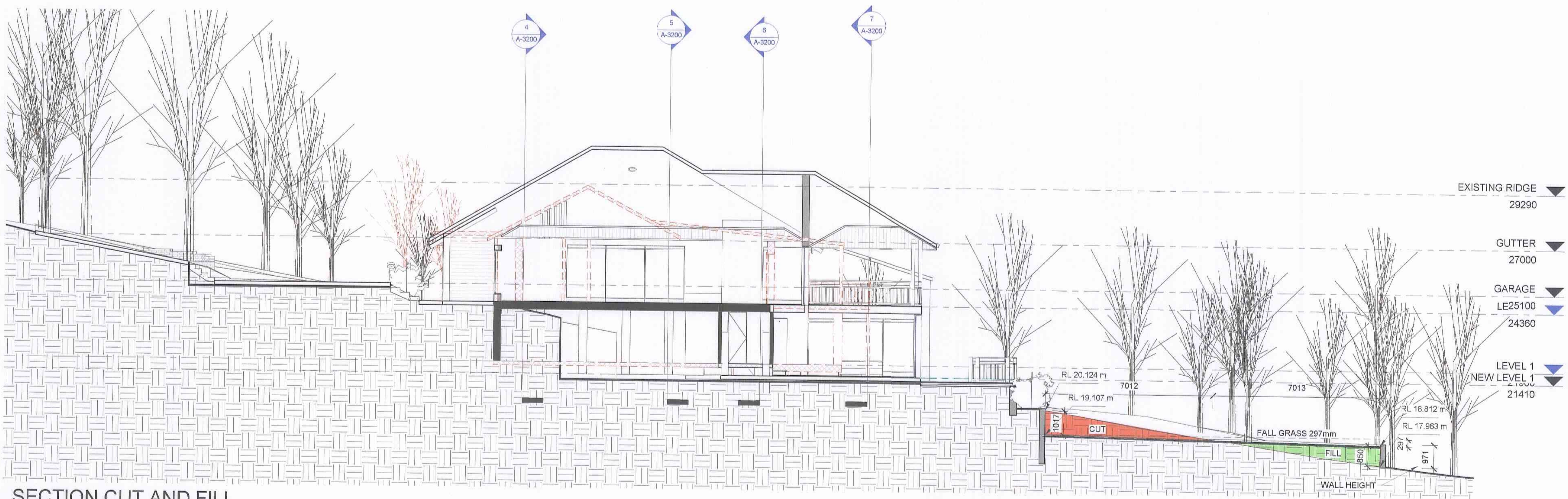
Walter Barda Design

architecture
landscape
interiors

2.04 13-15 Wentworth Avenue Sydney NSW 2000
www.walterbardadesign.com ABN: 48 072 186 613
Office: 02 9360 2340 Facsimile: 02 9360 2324

Client

Mr Michael Burkin



This plan / document
forms part of
Construction Certificate
no. 2 0 1 3 / 5 0 6 0

B	Construction Certificate	21.05.2013
A	Development Application	22.12.2011
No.	Description	Date

Revisions

This Drawing must not be used for Construction unless signed as Approved

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BURKIN RESIDENCE

Project Number 2011_04

4 ELOUERA ROAD, AVALON NSW 2107

LOT 108, DP 9151

Project Status DEVELOPMENT APPLICATION

Scale SECTION CUT AND FILL

Scale @ A1 1 : 100

Drawing Number

A-3201

Issue B

Drawn By MJ

Checked By MJ

Approved By WB

Print Date & Time 21/05/2013 3:04:27 PM

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

Development Application for _____
Name of Applicant _____
Address of site <u>4 ELENORA RD AVALON.</u>

PART A: Declaration made by Structural or Civil Engineer in relation to the Incorporation of the Geotechnical issues into the project design

I, PAUL BEKKER on behalf of PAN BEKKER ENG DESIGN BUILD
(insert name) (trading or company name)
on this the 23.5.13
(date)

certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009. I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$2million. I also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development and that

Please mark appropriate box

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

Geotechnical Report Details:

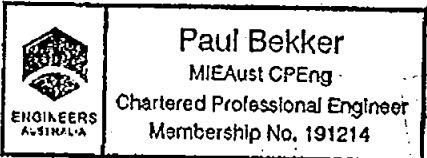
Report Title:
Report Date:
Author:
Author's Company/Organisation: <u>GED ENVIRO CONSULTING</u>

Structural Documents list:

<u>102301 - SOA TO SO9A</u>

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

Signature [Signature]
Name PAUL BEKKER
Chartered Professional Status MIEAust ACCREDITED CEM/BPB
Membership No. 191214
Company PAN BEKKER ENG DESIGN BUILD



This plan / document
forms part of
Construction Certificate
no. 2015 / 5060

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

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

I, SOLERN LIEW on behalf of GEOENVIRO CONSULTANCY PTY LTD
(insert name) (trading or company name)

on this the 21/5/2013
(date)

certify that I am a Geotechnical Engineer or Engineering Geologist and/or Coastal Engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$2million. I also certify that I have reviewed the design plans and structural design plans for the Construction Certificate Stage and that I am satisfied that:

Please mark appropriate box

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

Geotechnical Report Details:

Report Title: <u>GEOTECHNICAL INVESTIGATION REPORT REF JG12651A-F1</u>
Report Date: <u>6th MARCH 2012</u>
Author: <u>SOLERN LIEW - GEOENVIRO CONSULTANCY PLC</u>

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

<u>ENGINEERING DRAWINGS BY ^{PAUL} BEKKER ENGINEERING DESIGN</u>
<u>BURO PTY LTD DRAWING NO 62301 S00-S09 + SE1</u>
<u>DATED JAN 2013</u>

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

Signature [Signature]

Name SOLERN LIEW

Chartered Professional Status MIEA CPENG NPER3 (CIVIL + GEOTECHNICS)

Membership No. 616438

Company GEOENVIRO CONSULTANCY PTY LTD

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no. 2013/5060

BEKKER

paul bekker engineering design buro Pty limited

abn 89 118 772 517

po box 591, northbridge, nsw 1560

2/11 rangers road, neutral bay, nsw 2089

telephone 9953 6244

facsimile 9953 6266

email address bekker@spin.net.au

March 8, 2013

PB/bm 62301

STRUCTURAL
CIVIL
AND
WATERPROOFING
ENGINEERS

Mr M Burkin
C/o Walter Barda Design
Suite 2.04
13-15 Wentworth Avenue
SYDNEY NSW 2000

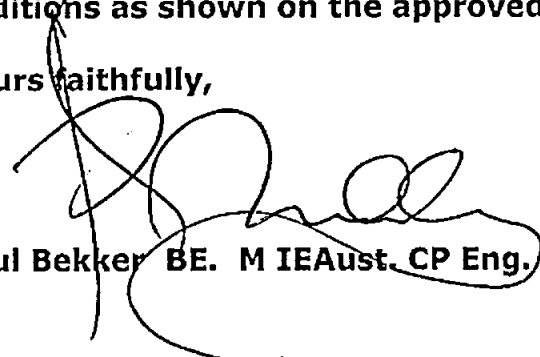
Atten: Mr M Juda

RE: RESIDENTIAL ALTERATIONS & ADDITIONS
4 ELOUERA ROAD
AVALON

Dear Michael,

We have inspected the above premises and confirm that the existing building is structurally adequate to carry the proposed additions as shown on the approved DA drawings.

Yours faithfully,


Paul Bekker BE. M IEAust. CP Eng. M ACEA

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SYDNEY WATER APPROVED

1. Position of structure in relation to Sydney Water's assets is satisfactory.
2. Connections to Sydney Water sewer/water services may only be made in accordance with the issue of a permit to which this consent is attached.
3. It is the owner's responsibility to ensure that all proposed fittings will drain to Sydney Water's sewer.
4. Any Plumbing and/or Drainage Work to be carried out in accordance with the Sydney Water Act 1994, AS 3500 and the NSW Code of practice.
5. Gullies, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Wall, any Verandah, Floor or other cover unless otherwise approved by Sydney Water.
6. Property No. 341514

Reece Waterloo,
Quick Check Agent on behalf of
SYDNEY WATER

67,01,13

☒ A Development Application		22.12.2011
No. _____		Date _____
Description _____ Revisions _____		
PITTWATER COUNCIL APPROVED DEVELOPMENT CONSENT PLANS		
NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF BURKIN RESIDENCE DEVELOPMENT CONSENT.		
THIS APPROVAL DOES NOT AUTHORISE WORKS ON THE ADJACENT ROAD RESERVE OR ANY COUNCIL RESERVE		4 ELOUERA ROAD. AVALON NSW 2107 LOT 108, DP 9151
Project Number <u>2011/04</u>		Project Status <u>DEVELOPMENT APPLICATION</u>
Sheet SITE PLANS		
Scale @ A1 As indicated		
Drawing Number A-1000		Issue A
Drawn By MJ	Checked By MJ	Approved By WB
Print Date & Time 23.12.2011 10:11:02 AM		
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facsimile 9953 6266

email address bekker@spin.net.au

62301 / March 8, 2013

CERTIFICATE OF DESIGN INTENT STORMWATER ENGINEERING CONSULTANCY

CONSTRUCTION CERTIFICATE

STRUCTURAL
CIVIL
AND
WATERPROOFING
ENGINEERS

ADDRESS OF DEVELOPMENT: 4 Elouera Rd, Avalon

PROJECT: Residential Alterations & Additions

Pursuant to the provisions of Clause A2.2 of the Building Code of Australia, I, Paul Bekker of 2/11 Rangers Rd Neutral Bay, being a practicing stormwater engineer, a corporate member of the Institution of Engineers Australia, a member of the ACEA and ASCE and the holder of documentary evidence from the Institute to that effect, ph 9953 6244, Fax: 9953 6266, Mob: 0411 570 948, hereby certify that the stormwater engineering drawings for this project are designed to comply with: -

- a) The relevant clauses of the Building Code of Australia and the Consent Conditions.
- b) The relevant Australian Standards listed in the Building Code of Australia as follows:

AS1170.1, 2 & .4 (amend '94), AS1289, AS1684, AS2159, AS 2327, AS2500, AS3500, AS3600, AS3700 & AS4100.

- c) The engineering plans submitted to the Accredited Certifier for approval are: PBEDB drawings 62301 - S00A to S09A

Signature:

Paul Bekker BE, MIE Aust, CP Eng, M ACEA

Date: March 8, 2013

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no. 2013 / 5060



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paul bekker engineering design buro Pty limited

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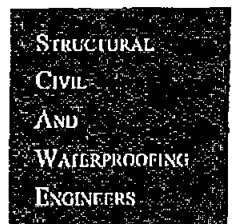
telephone 9953 6244

facsimile 9953 6266

email address bekker@spin.net.au

62301 / March 8, 2013

CERTIFICATE OF DESIGN INTENT STRUCTURAL ENGINEERING CONSULTANCY CONSTRUCTION CERTIFICATE



ADDRESS OF DEVELOPMENT: 4 Elouera Rd, Avalon

PROJECT: Residential Alterations & Additions

Pursuant to the provisions of Clause A2.2 of the Building Code of Australia, I, Paul Bekker of 2/22 Rangers Rd Neutral Bay, being a practicing structural engineer, a corporate member of the Institution of Engineers Australia, a member of the ACEA and ASCE and the holder of documentary evidence from the Institute to that effect, ph 9953 6244, Fax: 9953 6266, Mob: 0411 570 948, hereby certify that the structural engineering drawings for this project are designed to comply with: -

- a) The relevant clauses of the Building Code of Australia and the Consent Conditions.
- b) The relevant Australian Standards listed In the Building Code of Australia as follows:

AS1170.1, 2 & .4 (amend '94), AS1289, AS1684, AS2159, AS 2327, AS2500, AS3500, AS3600, AS3700 & AS4100.

- c) The engineering plans submitted to the Accredited Certifier for approval are: PBEDB drawings 62301 - S00A to S09A

Signature:

Paul Bekker BE, MIE Aust. CP Eng. M.ACEA

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Date: March 8, 2013



ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW

DRG No.	DRAWING TITLE
S00	COVER SHEET
S01	LOWER FOOTING & DRAINAGE PLAN
S02	HIGHER FOOTING & LEVEL 1 PLAN
S03	FOOTING & LEVEL 1 DETAILS
S04	LEVEL 2 PLAN
S05	LEVEL 2 DETAILS
S06	CEILING & ROOF FRAMING PLANS

DRG No.	DRAWING TITLE
S06	CEILING & ROOF FRAMING PLANS
S07	ELEVATIONS
S08	CEILING & ROOF DETAILS SHEET 1
S09	CEILING & ROOF DETAILS SHEET 2
SE1	SOIL & EROSION CONTROL PLAN

GENERAL NOTES.

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
- G2. THE CONTRACTOR SHALL CHECK AND BE RESPONSIBLE FOR THE CORRECTNESS OF ALL DIMENSIONS AND SETTING OUT. ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT.
- G3. STABILITY OF THE BUILDING DURING CONSTRUCTION AND EXCAVATION IN THE VICINITY OF ADJACENT BUILDINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO PART OF THE STRUCTURE SHALL BE OVERSTRESSED DURING CONSTRUCTION. APPROVAL OF ALL PROPOSALS MUST BE GRANTED BY THE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
- G4. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT SAA CODES BUILDING CODE OF AUSTRALIA AND LOCAL GOVERNMENT ORDINANCES. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT SAA CODES. THE BUILDING CODE OF AUSTRALIA, THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY AND THE SPECIFICATION.
- G5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS BEFORE THE REINFORCEMENT IS COMPLETED. THE CONTRACTOR SHALL ALLOW 2 HOURS AFTER THE COMPLETION OF THE REINFORCEMENT FOR THE ENGINEER'S INSPECTION. CONCRETE SHALL NOT BE ORDERED UNTIL THE REINFORCEMENT IS APPROVED BY THE ENGINEER.
- G6. NO CHANGES SHALL BE MADE WITHOUT THE CONSENT OF THE ENGINEER.
- G7. DESIGN WIND LOADS - IN ACCORDANCE WITH AS 1170. 2.
- G8. NET BASIC WIND PRESSURE $V_u = 50 \text{ m/s}$
- G9. REGIONAL FACTOR - NORMAL
- G10. TERRAIN AND HEIGHT FACTOR - SUBURBAN SHELTERED
- G11. TOPOGRAPHIC FACTOR - 1.0
- G12. AREA REDUCTION FACTOR - 1.0
- G13. DESIGN LIVE LOADS IN ACCORDANCE WITH AS 1170. 1.

ELEMENT	DESIGN LIVE LOAD
FLOORS	1.5 kPa
STORAGE	1.5 kPa
BALCONIES	4.0 kPa

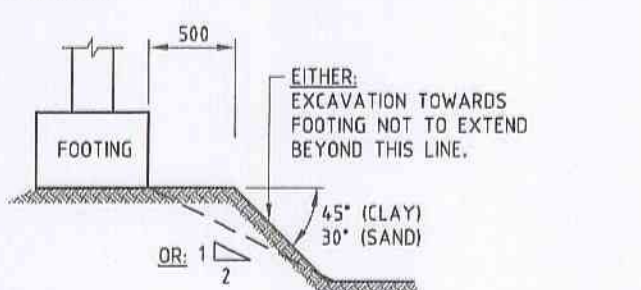
- G14. DESIGN SUPERIMPOSED LOADS ARE AS SHOWN ON THE ARCHITECTURAL DRAWINGS CURRENT AT THE TIME OF DESIGN.
- G15. EARTHQUAKE DATA IS AS 1170.4

FOUNDATIONS

- F1. THE SITE HAS BEEN INVESTIGATED BY GEOTECHNICAL ENGINEERS
- GEOTECHNICAL CONSULTANCY P/L
- Report Number - JG12651A-r1 Dated 6th March 2012
- REFER TO THE GEOTECHNICAL REPORT FOR MORE DETAILED INFORMATION.
- F2. FOOTINGS HAVE BEEN DESIGNED FOR THE FOLLOWING BEARING PRESSURES. FOUNDATION MATERIAL SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER BEFORE PLACING CONCRETE.

ELEMENT	BEARING PRESSURE
FOOTINGS	PILES

- F3. THE SITE CLASSIFICATION IN ACCORDANCE WITH AS 3600 RESIDENTIAL SLABS AND FOOTINGS IS CLASS - 1. SITE.....
- BRICKWORK TO BE BUILT AS ARTICULATED MASONRY.
- F4. ALL WALLS AND COLUMNS SHALL BE CONCENTRIC WITH SUPPORTING FOOTING UNLESS NOTED OTHERWISE ON DRAWINGS.
- F5. EXCAVATION SHALL NOT EXTEND BELOW A LINE DIPPING AT 45° AND AWAY FROM THE NEAREST UNDERSIDE CORNER OF ANY EXISTING OR PROPOSED FOOTING WHEN EXCAVATING IN CLAY, AND 30° WHEN EXCAVATING IN SAND OR A 1V : 2H SLOPE.



CONCRETE

- C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT SAA CODE AS 3600, WITH AMENDMENTS, EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- C2. CONCRETE QUALITY.

ELEMENT	SLUMP (MAX/MIN) mm	MAX. SIZE AGGREGATE mm	CEMENT TYPE AS 1315	CONCRETE GRADE MPa
FOOTINGS AND PITS	80	20	GP	25
INTERNAL CONCRETE	80	20	GP	32
EXTERNAL CONCRETE	80	20	GP	32
BLOCKWALL CORE FILL	80	20	GP	20

- C3. MAXIMUM ALLOWABLE CONCRETE SHRINKAGE 500 MICRONS AT 56 DAYS. NO ADMIXTURE TO BE USED WITHOUT PRIOR APPROVAL.
- C4. CLEAR CONCRETE COVER TO REINFORCEMENT FOR DURABILITY SHALL COMPLY WITH AS 3600.

CONCRETE COVER FOR CORROSION PROTECTION	COVER IN mm
CONCRETE PLACEMENT CLASSIFICATION	
EXTERIOR ENVIRONMENT CONCRETE ON GROUND NO WATERPROOF MEMBRANE	65
EXTERIOR ENVIRONMENT CONCRETE ON GROUND WITH WATERPROOF MEMBRANE	55
INTERIOR ENVIRONMENT CONCRETE ON GROUND NO WATERPROOF MEMBRANE	40
INTERIOR ENVIRONMENT CONCRETE ON GROUND WITH WATERPROOF MEMBRANE	30
INTERIOR ENVIRONMENT ABOVE GROUND	25
EXTERIOR ENVIRONMENT ABOVE GROUND	45

- MINIMUM COVER FOR CONCRETE PLACEMENT TO BE NOT LESS THAN EITHER MINIMUM AGGREGATE SIZE OR NOMINAL SIZE OF BAR OR TENDON TO WHICH COVER IS MEASURED.
- CONCRETE EXPOSED TO CORROSIVE VAPOURS, CORROSIVE GROUND WATER, SEA WATER OR SPRAY IS TO HAVE REINFORCEMENT COVER AS NOTED ON THE DRAWINGS PLUS 10mm.
- PROVIDE LEAN CONCRETE COVER FOR REINFORCEMENT FOR FIRE RATING REQUIREMENTS NOTED ON ARCHITECTS DRAWINGS COMPLYING WITH AS 3600.
- C5. FOR SLABS SUBJECTED TO RAINWATER ENSURE THAT THE SURFACE IS FINISHED OFF BY POWER TROWEL TO ENSURE ALL SETTING CRACKS ARE REMOVED.
- C6. CURE ALL CONCRETE USING AN APPROVED METHOD IN ACCORDANCE WITH A.C.E.E. SPECIFICATION. CURING COMPOUNDS SHOULD NOT BE USED WITHOUT PRIOR APPROVAL.
- C7. FOR ALL DRAINAGE, WATERSTOPS AND WATERPROOFING DETAILS REFER TO ARCHITECTS AND HYDRAULIC CONSULTANTS DRAWINGS AND SPECIFICATIONS. FOR ALL CHAMFERS, REGLETS, DROPOVERES ETC. REFER ARCHITECTS DRAWINGS.
- C8. CONDUITS, PIPES, ETC., SHALL NOT BE PLACED IN THE CONCRETE COVER TO REINFORCEMENT AND NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- C9. THE DEPTH OF BEAMS IS GIVEN FIRST AND INCLUDES THE SLAB THICKNESS. CONCRETE SIZES DO NOT INCLUDE THE THICKNESS OF APPLIED FINISHES.
- C10. CONSTRUCTION JOINTS, WHERE NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED.
- C11. FORMWORK SHALL REMAIN IN POSITION FOR THE TIME SPECIFIED, WHERE SLABS AND BEAMS ARE TO SUPPORT MASONRY OVER, FORMWORK AND PROPS MUST BE REMOVED PRIOR TO THE CONSTRUCTION OF MASONRY.
- C12. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. THE VIBRATOR SHALL NOT BE USED TO SPREAD CONCRETE. CONCRETE SHALL NOT BE FREE POURED FROM A HEIGHT GREATER THAN 1 METRE.

CONCRETE (continued)

- C13. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- C14. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
- C15. SPLICES IN THE MAIN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY THE ENGINEER.
- SPLICES IN DISTRIBUTION REINFORCEMENT MAY BE POSITIONED AS NECESSARY WITH SPLICES OF SUFFICIENT LENGTH TO DEVELOP THE FULL STRENGTH OF THE BARS.
- MINIMUM END LAPS TO FABRIC SHALL BE 225 mm U.N.O.
- MINIMUM END LAPS TO FABRIC SHALL BE 450 mm U.N.O.
- REINFORCEMENT SHALL BE SECURELY TIED AT ALL LAPS AND INTERSECTIONS WITH 25mm BLACK ANNEALED WIRE. THE WRITTEN APPROVAL OF THE SUPERINTENDENT SHALL BE OBTAINED FOR OTHER SPLICES WHERE THE LAP LENGTH IS NOT SHOWN. IT SHALL DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- C16. ALL UNSUPPORTED BARS SHALL BE TIED IN A TRANSVERSE DIRECTION WITH M20-300 U.N.O.
- C17. REINFORCEMENT SHALL BE SUPPORTED ON APPROVED PLASTIC BAR CHAIRS AT NO MORE THAN 1000 mm CENTRES BOTH WAYS IN SLABS AND AT 1000 mm CENTRES IN BEAMS.
- C18. FABRIC REINFORCEMENT TO SLABS ON GROUND SHALL BE SUPPORTED ON CHAIRS OR FORCED INTO THE CONCRETE AFTER PLACING AND BEFORE FINISHING. FABRIC SHALL NOT BE LAID ON THE GROUND AND PULLED INTO POSITION THROUGH THE CONCRETE.
- C19. $\equiv$ DENOTES MAIN WIRES OF RECTANGULAR FABRIC TO AS 3094.
- $\equiv$ DENOTES SQUARE FABRIC TO AS 1304.
- N DENOTES HARD DRAWN WIRE REINFORCING FABRIC TO AS 1304.
- R DENOTES 230R HOT ROLLED PLAIN ROUND BARS TO AS 1302.
- S DENOTES GRADE 230S HOT ROLLED DEFORMED BARS TO AS 1302.
- N DENOTES TEMPORARY HIGH YIELD STRENGTH DEFORMED BARS, GRADE 410Y, TO AS 1302.
- FABRIC SHALL BE SUPPLIED IN FLAT SHEETS, ROLLS WILL NOT BE ACCEPTED.
- C20. FABRIC REINFORCEMENT NOTATION:-
- S200 - 200 B INDICATES
- S.....DENOTES NUMBER OF BARS REQUIRED
- N.....DENOTES GRADE OF REINFORCEMENT
- 2L.....DENOTES BAR DIAMETER IN MILLIMETRES
- 200.....DENOTES BAR SPACING IN MILLIMETRES
- TYPICAL ABBREVIATIONS
- B.....DENOTES BARS IN BOTTOM LAYER
- T.....DENOTES BARS IN TOP LAYER
- AL.....DENOTES BARS ALTERNATING
- NF.....DENOTES BARS IN NEAR FACE
- FF.....DENOTES BARS IN FAR FACE
- EF.....DENOTES BARS IN EACH FACE
- U.N.O. UNLESS NOTED OTHERWISE.
- C22. RE-ENTRANT CORNERS
- 2-NO.2 DIAGONAL CORNER BARS 1200mm LONG SHALL BE FIXED AT ALL RE-ENTRANT CORNERS OF OPENINGS IN SLABS AND WALLS.
- C23. FORMWORK
- FORMWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH AS3610 AND BE CLASS 2.
- FORMWORK SHALL REMAIN IN POSITION FOR A MINIMUM OF 21 DAYS AFTER PLACING OF CONCRETE. PRIOR TO THE REMOVAL OF FORMWORK APPROVAL SHALL BE OBTAINED FROM THE ENGINEER. ALTERNATIVELY SLAB MAY BE STRIPPED AND BACKPROPPED AFTER 10 DAYS.
- BACKPROPPING TO REMAIN IN PLACE FOR 21 DAYS, WHERE BACKPROPPING OF THE SLAB WILL BE REQUIRED. THE CONTRACTOR SHALL SUBMIT A BACK-PROPPING LAYOUT TO THE ENGINEER FOR APPROVAL, WHERE SLABS AND BEAMS ARE TO SUPPORT MASONRY, THE FORMWORK AND PROPS MUST BE REMOVED BEFORE COMMENCEMENT OF LAYING OF MASONRY.

TIMBER

- T1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1684 EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- T2. TIMBER GRADES SHALL BE AS NOTED ON THE DRAWINGS.
- T3. ALL CLEATS SHALL BE MIN 6mm PLATE, ALL BOLTS GALVANISED 16mm COMMERCIAL GRADE. ALL CONNECTIONS TWO BOLTS MIN.
- T4. ALL TIMBER TO BE TREATED TO COMPLY WITH SPECIFICATION REQUIREMENTS.
- T5. TIMBER ROOF TRUSSES ARE TO BE DESIGNED FOR THE REQUIRED LOADS BY A SATISFIED QUALIFIED TRUSS DESIGNER. ALL CALCULATIONS TO BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.

STRUCTURAL STEELWORK

- S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100, AS 4400 AND AS 1554 EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- S2. ALL STEEL SHALL BE IN ACCORDANCE WITH (U.N.O.) -
- AS 3679 - GRADE 300 FOR ROLLED SECTIONS
- AS 1163 - GRADE 350 FOR RIS & SRS SECTIONS
- AS 1163 - GRADE 250 FOR CHS SECTIONS UP TO 165 DIA
- AS 1163 - GRADE 350 FOR CHS SECTIONS OVER 165 DIA
- AS 1163 - GRADE 450 FOR ALL HIGH STRENGTH STEEL
- S3. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET FROM E&I XX ELECTRODES. ALL BOLTS M20 COMMERCIAL GRADE AND ALL CLEATS AND GUSSETS 16mm PLATE. ALL CONNECTIONS TWO BOLTS MINIMUM U.N.O.
- S4. FOR WELDED AND BOLTED JOINTS THE FOLLOWING NOTATION IS USED.
- WELDS - SYMBOLS IN ACCORDANCE WITH AS 1191 PART 3
- BOLTS - DESIGNATED BY THE NUMBER DIAMETER AND GRADE
- TIGHTENING PROCEDURE.
- E.G. 4/16M-4.5 4/16 DIA COMMERCIAL
- GRADE BOLTS SHOLD TIGHT
- 6/M20-8.8TF 6 M20 DIA HIGH STRENGTH
- STRUCTURAL BOLTS FULLY TENSIONED IN A NON SLIP JOINT.
- 6/M24-8.8TB 6 M24 DIA HIGH STRENGTH
- STRUCTURAL BOLTS FULLY TENSIONED IN A BEARING JOINT (SIDE SLIP ALLOWED)
- S5. COMMERCIAL GRADE BOLTS SHALL CONFORM TO AS 1111 AND AS 1250. HIGH STRENGTH STRUCTURAL BOLTS SHALL CONFORM TO AS 1252 AND AS 1511. WELDS SHALL CONFORM TO AS 1554 AND WELDING ELECTRODES TO AS 1553.
- S6. CONTACT SURFACES OF TF CONNECTIONS SHALL BE LEFT UNPAINTED AND FREE OF SCALE UNLESS OTHERWISE SPECIFIED.
- S7. BOLTS IN TF AND TB CONNECTIONS SHALL BE TIGHTENED USING THE PART TURN METHOD OR LOAD INDICATING WASHERS CALIBRATED TORQUE WRENCHES SHALL NOT BE USED. A HARDENED WASHER SHALL BE USED UNDER THE BOLT HEAD OR NUT WHEREVER IS ROTATED THE REUSE OF FULLY TENSIONED BOLTS IS PROHIBITED.
- S8. CONCRETE ENCASED STEELWORK SHALL HAVE A MINIMUM OF 50mm OF CONCRETE ENCASEMENT. REINFORCED WITH W5 WIRE WRAPPING AT 150 CENTRES OR FOW41 FABRIC.
- S9. ALL EXPOSED STRUCTURAL STEELWORK SHALL BE NOT DIPPED GALVANISED. OTHER STRUCTURAL STEELWORK SHALL HAVE THE FOLLOWING SURFACE TREATMENT IN ACCORDANCE WITH AS 2312 AND THE SPECIFICATION BELOW.

ELEMENT	SURFACE CLEANING	PRIME COAT	TOP COAT
ALL U.N.O.	WIRE BRUSH CLASS 2.0	ONE COAT ROZC	TO ARCH SPEC
EXPOSED	PICKLED	HOT DIP GALVANISE	TO ARCH SPEC
FIRE RATED	PICKLED	INTUMESCENT PAINT TO ARCH SPEC	TO ARCH SPEC

- S10. THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL AND TIMBER TO STEEL, WHETHER OR NOT DETAILED ON THE DRAWINGS.
- S11. THE BUILDER SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING AND ENSURE THE SAFETY AND STABILITY OF THE STRUCTURE DURING ERECTION AND CONSTRUCTION.
- S12. THE CONTRACTOR SHALL PREPARE AND SUBMIT 5 COPIES OF ALL WORKSHOP DRAWINGS TO THE SUPERINTENDENT FOR APPROVAL. ALLOW SUFFICIENT TIME FOR ENGINEER TO CHECK SHOP DRAWINGS. FABRICATION SHALL NOT COMMENCE UNTIL ALL APPROVALS HAVE BEEN OBTAINED.

SITE OCCUPATIONAL HEALTH & SAFETY REQUIREMENTS

- O1. THE BUILDER SHALL ENSURE THE SITE OPERATES UNDER THE APPLICABLE STATUTORY AUTHORITY'S OHS REQUIREMENTS FOR A CONSTRUCTION SITE. TO ACHIEVE THIS END THE BUILDER SHALL PREPARE AN OHS MANAGEMENT PLAN FOR THE SITE FOR THE ENTIRE CONSTRUCTION PERIOD. THE OHS MANAGEMENT PLAN SHALL BE PREPARED BY A SATISFIED QUALIFIED ENTITY. THE BUILDER MUST ENSURE ADHERENCE TO THE RECOMMENDATION OF THE OHS MANAGEMENT PLAN AT ALL TIMES.
- THESE PRELIMINARY DRAWINGS IN NO WAY CONSTITUTE AN OHS MANAGEMENT PLAN OR PROVIDE SPECIFIC OHS INSTRUCTION. ALL REFERENCE SHOULD BE MADE TO THE OHS MANAGEMENT PLAN.

COMPLIANCE WITH BUILDING CODE OF AUSTRALIA (BCA) & AUSTRALIAN STANDARDS (AS)

- O1. THE BUILDER IS RESPONSIBLE FOR COMPLETING A BUILDING WHICH COMPLIES WITH ALL RELEVANT BCA AND AUSTRALIAN STANDARD REQUIREMENTS. IN THIS REGARD THE BUILDER SHALL TAKE THE ADVICE OF THE ARCHITECTS DRAWINGS AND SPECIFICATION AND THE RELEVANT BCA REPORTS.
- THESE STRUCTURAL DRAWINGS DEPICT THE STRUCTURAL STRENGTH, DEFLECTION AND BASIC FIRE RATING CRITERIA REQUIRED BY THE AUSTRALIAN STANDARD STRUCTURAL CODES BUT DO NOT NECESSARILY ENCOMPASS ALL OF THE REQUIREMENTS OF THE BCA, ENVIRONMENTAL & AESTHETIC ISSUES SUCH AS ACOUSTIC PERFORMANCE, IMPACT RESISTANCE, ADDITIONAL FIRE RESISTANCE ETC MAY REQUIRE THE ADDITION OF A SURFACE COATING OR COVERING OVER OF THE STRUCTURAL MEMBER. THE BUILDER SHALL REFER TO ALL ADDITIONAL INFORMATION SUCH AS BASIC, ACOUSTIC & IMPACT REPORTS, BCA SECTION J COMPLIANCE & ALTERNATIVE FIRE ENGINEERING SOLUTION REPORTS ETC.

BRICKWORK AND BLOCKWORK

- B1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT CODE AS 3700 EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- B2. STRENGTH OF BRICKS, CLASS OF BLOCKS AND TYPE OF MORTAR PORTLAND CEMENT HYDRATED LIME : SAND SHALL BE AS FOLLOWS:-

ELEMENT	MATERIAL	UNCONFINED COMPRESSIVE STRENGTH (MPa)	MORTAR TYPE CEMENT:LIME:SAND
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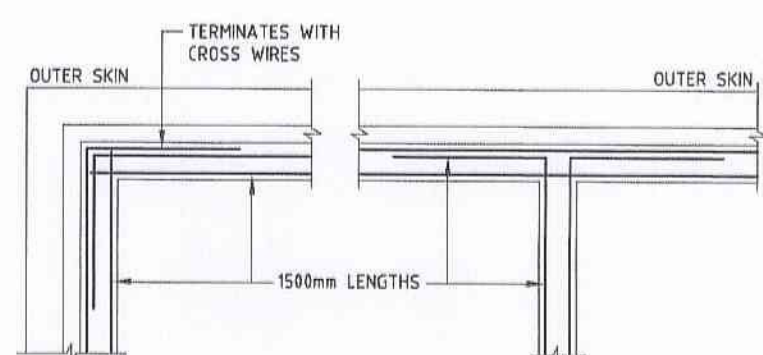
1-3 STOREYS LOAD BEARING	BRICK-CLAY BLOCK-CONCRETE	20 MPa 20 MPa 12 MPa	1:1:6 M3 1:1:6 M3 1:1:6 M3
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4 STOREYS LOAD BEARING	BRICK-CLAY BLOCK-CONCRETE	40 MPa 40 MPa 20 MPa	1:1/3:3 M4 1:1/3:3 M4 1:1/3:3 M4
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RETAINING AND BASEMENT WALLS	CONCRETE BLOCK	20 MPa	1:1/4:6 FOR BLOCKWORK GROUT REFER TO CONCRETE QUALITY
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NOTE THE CHARACTERISTIC EXPANSION OF BRICKWORK SHALL NOT EXCEED 0.8 mm/m.

- B3. FOR MASONRY SUPPORTING SLABS AND BEAMS PROVIDE A HORIZONTAL FLAT BED OF MORTAR ON TOP OF THE BRICKWORK WITH TWO LAYERS OF SUPER ALGOR OVER OR OTHER TREATMENT AS APPROVED.
- B4. MASONRY WALLS MUST NOT BE CONSTRUCTED ON SUSPENDED CONCRETE SLABS AND BEAMS UNTIL ALL FORMWORK AND BACKPROPPING IS REMOVED.
- B5. ALL BRICKWORK LAID ON SUSPENDED SLABS - TO BE JOINTED FOR THE REQUIREMENTS FOR ARTICULATED BRICKWORK.
- B6. AS A MINIMUM PROVIDE VERTICAL CONTROL JOINTS IN BRICK AND BLOCK WALLS AT 6000mm MAX APART (PROVIDE M.E.T. 3-1 AT 6000mm CENTRES VERTICALLY) BRICK AND BLOCKWORK JOINTS TO BE INSTALLED IN ACCORDANCE WITH AS3700 BRICK CODE REQUIREMENTS.
- B7. ALL LOADBEARING BRICKS, IF ANY, SHALL BE LAID FROGS UP EXCEPT THE TOP COURSE WHICH SHALL BE LAID FROGS DOWN THE TOP TWO COURSES OF BRICKS SHALL BE LAID WITH BRICK REINFORCEMENT IN THE JOINTS.
- B8. WHEREVER BRICKWORKS ARE BUILT OFF CONCRETE SLABS, WITH THE EXCEPTION OF THE EXTERNAL OUTER SKIN OF CAVITY WALLS, THEY SHALL BE LAID ON A LIGHT GAUGE BUILDING PAPER TO PERMIT FREE MOVEMENT OF THE SLAB IN RELATION TO THE BRICKWORK.
- B9. WHERE WALLS ARE NON-LOADBEARING, AT EITHER HORIZONTAL OR VERTICAL FACES, THEY SHALL BE SEPARATED FROM BUT TIED TO THE STRUCTURE.
- B10. NO HOLES OR CHASES SHALL BE CUT INTO LOADBEARING BRICKWORK OR BLOCKWORK WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT'S REPRESENTATIVE.
- B11. WHERE AAC BLOCKWORK IS USED CONSTRUCTION SHALL BE STRICTLY IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS.
- B12. ALL CONCRETE BLOCK WALLS SHALL BE BUILT TO A CONCRETE BLOCK GAUGE SUCH THAT BLOCK JOINT DIMENSIONS ARE MULTIPLES OF 100 mm IN PLAN USING STRETCHER BOND LAY.
- B13. THE LOWER CONCRETE BLOCK COURSES SHALL BE STANDARD CLEAN-OUT BLOCKS.
- B14. PROCEDURE TO CREATE OPENING IN EXISTING WALL
- NEEDLE EXISTING BRICKWORK BY BREAKING THROUGH EXISTING WALL ABOVE BRICKWORK TO BE REMOVED. INSERT 150UC23 NEEDLES AT APPROX 800mm MAX CRS SUPPORTED ON PROPRIETARY PROPS/FRAMES ABLE TO CARRY 40 kN AT THE APPROPRIATE BRACKED HEIGHT. WEDGE NEEDLES HARD AGAINST UNDERSIDE OF BRICKWORK. PROVIDE LATERAL BRACING TO STABILISE PROPS/FRAMES AS REQUIRED. PRE-DEFLECT BEAM DOWNWARDS 1/300 BY WEDGING AT MID-SPAN OR PULLING DOWN WITH TURNER. REMOVE BRICKWORK AND INSTALL STEEL BEAM. RAN PACK MOIST GROUT (1:3 CEMENT/SAND) BETWEEN BEAM AND UNDERSIDE OF BRICKWORK COMMENCING AT MID SPAN AND WORKING TOWARDS ENDS. ALLOW GROUT TO CURE. RE-BRICK AND MAKE GOOD TO ALL AFFECTED AREAS. FIRE RATE BEAM TO ARCHITECT'S DETAILS IF REQUIRED BY BCA.
- NOTE: IRRESPECTIVE OF CARE TAKEN TO INSTALL THE NEEDLING AND SUPPORT BEAM WITHOUT AFFECTING THE BRICKWORK OVER TO REMAIN, THERE IS ALWAYS THE POSSIBILITY OF MINOR CRACKING OCCURRING IN THE BRICKWORK OVER. MAKE AN ALLOWANCE TO RECTIFY SUCH DAMAGE.
- B15. WALL TIES SHALL BE PROVIDED AT 400mm MAXIMUM CENTRES HORIZONTALLY AND VERTICALLY AND CONSIST OF STAINLESS STEEL GRADE 316 UNLESS NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATION. TIES TO BE BUILT AT A RATE OF 5 PER sq.m OF WALL PLUS ADDITIONAL TIES AT 300mm CENTRES ADJACENT TO OPENINGS AND CONTROL JOINTS.
- B16. WHEREVER INTERNAL BRICK OR BLOCK WALLS ABUT CONCRETE WALLS OR COLUMNS, PROVIDE GALVANISED CORNER FRAME TIES AT 4 COURSE VERTICAL CENTRES FOR BRICKWORK AND 2 COURSE VERTICAL CENTRES FOR BLOCKWORK. USE MASONRY EXPANSION TIE (M.E.T.) 1-2 200 LONG.
- B17. WHEREVER EXTERNAL BRICK OR BLOCK WALLS ABUT CONCRETE WALLS OR COLUMNS, PROVIDE HOT DIPPED GALVANISED HEAVY DUTY FRAME TIES M.E.T. 1-5 AT 4 COURSE VERTICAL CENTRES FOR BRICKWORK AND 2 COURSE VERTICAL CENTRES FOR BLOCKWORK.
- B18. WHEREVER BRICK OR BLOCK WALLS ABUT BEAMS OR SLABS OVER PROVIDE GALVANISED M.E.T. 4-2 HEAD RESTRAINT TIES AT EVERY FOURTH PERPEND FOR BRICKWORK AND EVERY SECOND PERPEND FOR BLOCKWORK.
- B19. FOR A BUILDING IN AN EARTHQUAKE ZONE THE BRICK TIES MUST COMPLY WITH ALL SAA CODE REQUIREMENTS.
- B20. BRICK TIES TO EXTERNAL WALLS SHALL BE STAINLESS STEEL GRADE 316.
- B21. GALVANISED PARALLEL WIRE BRICK REINFORCEMENT SHALL BE PLACED IN THE INNER SKIN OF THE CAVITY WALLS AT ALL CORNERS, OVER WINDOWS AND DOOR OPENINGS AND IN CROSS WALLS WHERE THEY CONNECT TO EXTERNAL WALLS. THE REINFORCEMENT SHALL EXTEND 1500mm INTO THE CORNERS AND CROSS WALLS AND 1000mm PAST WINDOWS AND DOOR OPENINGS REFER TO BRICKWORK DETAIL ABOVE.



AT CORNERS AT CROSSWALLS

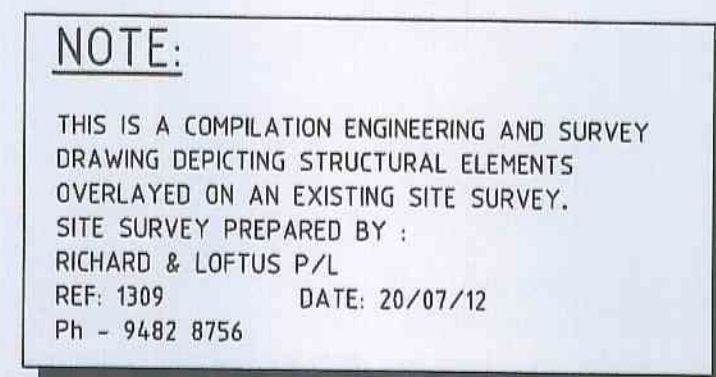
WARNING

The stamping of this plan by Inlight Building Certifies Pty Ltd does not relieve:

- The applicant's responsibility to obtain approval from Sydney Water or other utilities.
- The Structural Engineer of their responsibility to ensure the structural adequacy of this project.
- The Applicant, Structural Engineer or other Professional of their responsibility to ensure these stamped details are consistent with the Issued Construction Certificate Architectural Details.

This plan / document forms part of Construction Certificate no. 2013 / 5060

A	08.03.13	FOR TENDER & CONSTRUCTION CERTIFICATE
REV	DATE	DESCRIPTION
ARCH		
Walter Barda Design architecture landscape interiors 2/04 13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com.au ABN: 48 072 138 513 Office: 02 9360 2340 Facsimile: 02 9360 2324		
PROJECT		
ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107		
DRG		
COVER SHEET		
BEKKER paul bekker engineering design buru pty limited CONSULT AUSTRALIA MEMBER		
suite 2/11 rangers road, neutral bay, nsw 2059 phone: (02) 9953 6244 fax: (02) 9953 6266 postal address: po box 591 neutral bay, nsw 2059 email: paul.bekker@pbn.net.au		
DESIGNED		
SCALE	DATE	DRG NO.
-	JAN. 2013	62301 S00
		REV A



- THE SITE HAS BEEN INVESTIGATED BY GEOENVIRO CONSULTANCY P/L AND HAS BEEN CLASSIFIED AS A PROBLEM SITE CLASS ' P '.
- THE SITE IS SUBJECT TO AN ARBORIST REPORT BY NATURALLY TREES ARBORICULTURAL CONSULTING P/L REPORT NO. BURKIN AIA DATED 21/09/12. ALL FOOTINGS & DRAINAGE TO TO INSTALLED SUBJECT TO THE CONSTRAINTS OF THIS REPORT.
- FOOTINGS ARE TO BE STEEL SCREW PILES TAKING TO SUFFICIENT DEPTH TO ACHIEVE THE LOADS NOMINATED.
- PILING CONTRACTOR TO PROVIDE CERTIFICATE THAT PILES HAVE ACHIEVED THE LOAD & CRITERIA.

LEGEND

- 
- EXISTING WALL & FOOTING
- NEW FOOTING BEAM
- 200 mm BLOCK WALL
GROUT FILL CORES WITH 20MPa CONCRETE
- STEEL SCREW PILES WITH 150 kN SAFE WORKING LOAD TO BE GUARANTEED AND CERTIFIED BY SCREW PILE CONTRACTOR.

GEOTECHNICAL REPORT

1. REFER GEOTECHNICAL RREPORT FOR ALLOWABLE SAFE BEARING CAPACITY AND) FOR ALL SITE STABILITY DETAILS.

EXCAVATION NOTES

1. ALL EXCAVATION IS TO COMPLY WITH WORKCOVER AUTHORITY OF N.S.W.
" CODE OF PRACTICE - EXCAVATION WORK. "
2. MINIMIZE VIBRATIONS TO ACCEPTABLE LEVELS DURING EXCAVATIONS.
PROVIDE MONITORING AS RECOMMENDED BY GEOTECHNICAL ENGINEER.
3. REFER GEOTECHNICAL ENGINEERS REPORT FOR EXCAVATION METHOD NOTES.

GEOTECHNICAL ENGINEER NOTES:

- EXCAVATION TO BE CARRIED OUT UNDER GEOTECHNICAL ENGINEER'S SUPERVISION
1. GEOTECHNICAL ENGINEER TO INVESTIGATE SITE AND REPORT PRIOR TO COMMENCEMENT.
 2. GEOTECHNICAL ENGINEER (GE) TO COMMENT ON SUITABILITY OF THE SUBCONTRACTOR'S METHOD OF EXCAVATION AS REMOVAL PROCEEDS.

SITE SETOUT

REFER TO THE ARCHITECTS DRAWINGS FOR THE ACCURATE SETOUT AND DIMENSIONS THE BUILDING WORKS, NOTE THE PBED DRAWINGS ARE INDICATIVE ONLY. CONFIRM WITH ARCHITECT BEFORE COMMENCEMENT.

PIT NOTES

ALL PITS ARE TO BE PRECAST CONCRETE TO COUNCIL'S SPECIFICATIONS AND DETAILS. CONFIRM ALL INVERT LEVELS FOR PITS & DRAINAGE LINES ON SITE PRIOR TO COMMENCING WORK.

NOTE:

1. BUILDER TO INVESTIGATE LEVELS AND SERVICES ON SITE PRIOR TO COMMENCEMENT.
2. BUILDER IS TO ALLOW FOR ALL SAWCUTTING, TEMPORARY SHORING, COMPACTED BACKFILLING AS MAY BE REQUIRED TO COMPLETE THE PROJECT.

PILING NOTES

1. THE SITE HAS BEEN INVESTIGATED BY GEOENVIRON CONSULTANCY P/L REFER TO GEOTECHNICAL REPORT No. JG12651A-1 DATED MARCH 6, 2012.
2. THE PILING CONTRACTOR SHALL DESIGN THE PILES IN ACCORDANCE WITH AS 2159 PILING CODE .
3. THE PILING CONTRACTOR SHALL CARRY OUT FURTHER SITE INVESTIGATION OR TESTS AT HIS COST IF REQUIRED FOR THE CONFORMATION OF DESIGN ASSUMPTIONS.
4. PRIOR TO COMMENCEMENT OF PILING, THE CONTRACTOR SHALL SUBMIT FOR ACCEPTANCE THE CONTRACTOR'S GUARANTEE OF THE PERFORMANCE OF THE PILES TO CARRY THE DESIGNATED LOADS. GUARANTEE TO BE FOR A MINIMUM 10 YEAR PERIOD FROM INSTALLATION.
5. LOADS AS ON THE DRAWINGS ARE THE WORKING LOADS APPLIED TO THE PILES OR PILE GROUP & INCLUDE THE DEAD LOAD OF THE PILE CAPPING BEAM OVER.
6. THE CONTRACTOR SHALL SETOUT THE BUILDING IN ACCORDANCE WITH THE ARCHITECTS DRAWINGS.
7. PILING RECORDS SHALL BE KEPT & SUBMITTED TO THE AUTHORITIES AS REQUIRED. COPY OF PILING RECORDS SHALL ALSO BE SUBMITTED TO THE ENGINEER.
8. AT THE COMPLETION OF THE PILING THE PILING CONTRACTOR SHALL PROVIDE A SURVEYORS AS BUILT DRAWING OF THE PILES AND A REGISTERED ENGINEERS CERTIFICATION OF THE PILE CAPACITIES. IF PILES ARE BEYOND +/- 70mm of DESIGNATED LOCATION, SCREW PILE IS TO BE REMOVED & REPLACED IN REQUIRED LOCATION

SCREW PILES TO BE DESIGNED, INSTALLED AND CERTIFIED BY SCREW PILE CONTRACTOR.

REFER GEOTECH REPORT REF. NO JG12651A

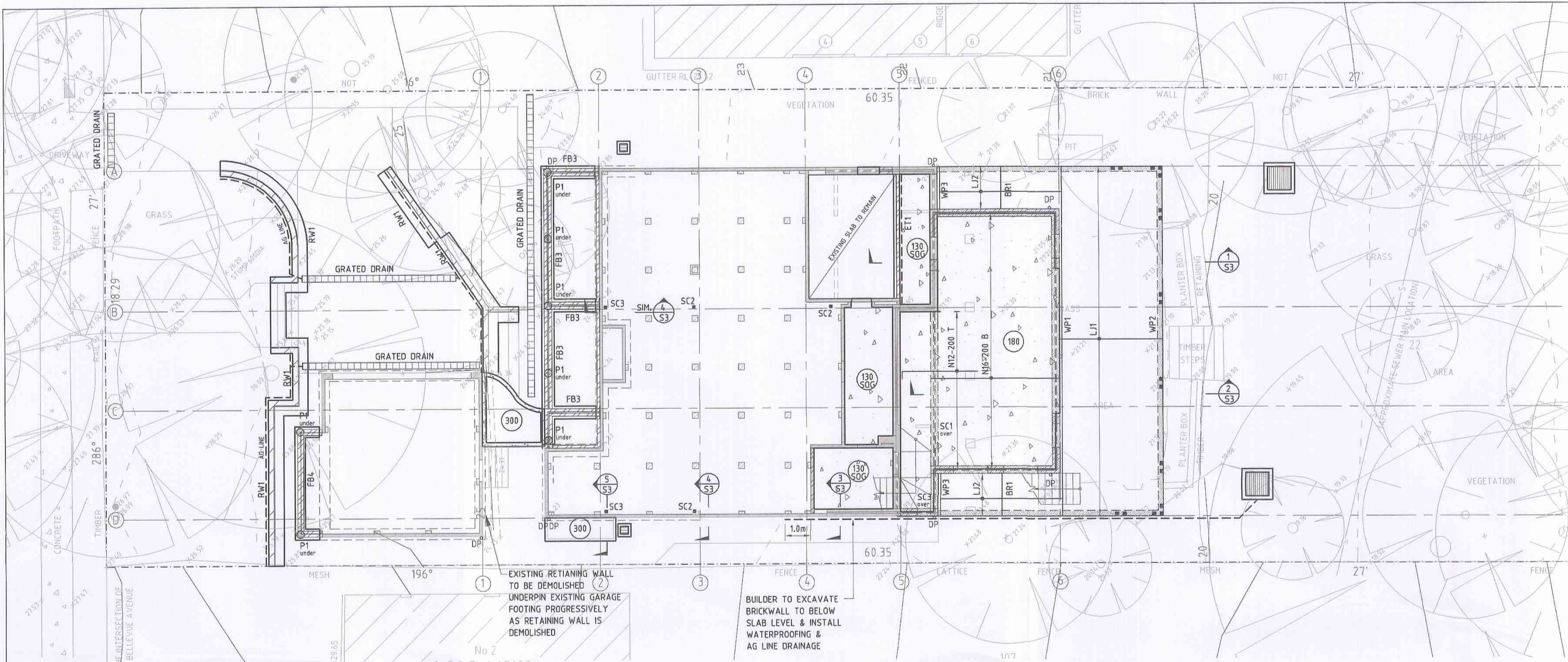
BY GEOENVIRO CONSULTANCY P/L AND DATED MARCH 6, 2012

NOTES - STORMWATER DRAINAGE :

1. PROVIDE ALL SURFACE DRAINAGE WITHIN LANDSCAPED AREAS TO SUIT THE LANDSCAPE LAYOUT TO ARCHITECTS & LANDSCAPE ARCHITECTS REQUIREMENTS
2. PROVIDE AG. LINES WITHIN PLANTERS AND LANDSCAPED AREAS WHERE REQUIRED.
3. PROVIDE CLEANOUT PIPS AT ALL CHANGES IN DIRECTION OF DRAINAGE LINES.
4. BUILDER TO ENSURE ALL PIPES ARE FLUSHED CLEAN PRIOR TO HANDOVER.
5. BUILDER SHALL ENSURE ALL AREAS REQUIRING STORMWATER HAVE OVERTOWS, WHETHER SHOWN ON THE DRAWINGS OR NOT. PROVIDE ONE 100mmØ OVERTLOW FOR EACH 100m² OF CATCHMENT AREA.
6. BUILDER TO PROVIDE ALL DRAINAGE REQUIREMENTS TO COMPLY WITH AS 3500.

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forms part of
Construction Certificate
no. **2013 / 5060**

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ARCH	Walter Barda Design architecture landscape interiors 2/24 -13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com.au ABN: 48 172 136 513 Office: 02 9360 2340 Facsimile: 02 9360 2324		
PJECT	ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107		
DWG	LOWER FOOTING & DRAINAGE PLAN		
BEKKER paul bekker engineering design buro pty limited suite 2/11 rangers road, neutral bay nsw 2089 phone: (02) 9953 6244 fax: (02) 9953 6266 postal address: po box 591 northbridge, nsw 1569 			
DESIGNED			
SCALE	DATE	DWG No.	REV
1:100	JAN.-2013	62301 S01	A



HIGHER FOOTING & LEVEL 1 PLAN

180mm MINIMUM THICK SUSPENDED SLAB U.N.O.

PROVIDE SL82 MESH TOP & BOTTOM THROUGHOUT PLUS ADDITIONAL BARS AS SHOWN ON PLAN & SECTIONS
PROVIDE SL82 MESH TOP & BOTTOM THROUGHOUT PLUS ADDITIONAL BARS AS SHOWN ON PLAN
ON 0.2mm THICK VAPOUR BARRIER
ON 30mm LAYER OF SAND BEDDING
ON LOOSE FILL

LEGEND

- LOAD BEARING WALLS UNDER
- EXISTING BRICK WALLS OVER
- NEW BRICK WALLS OVER
- NEW TIMBER WALLS OVER
- NEW NON LOAD-BEARING WALLS OVER
- 180 DENOTES SLAB THICKNESS
- NEW CONCRETE SLAB

GENERAL NOTES

- REFER TO HYDRAULIC ENGINEERS DRAWINGS FOR SEWER DETAILS.
- REFER TO ARCHITECTS DRAWINGS FOR FINISHED FLOOR LEVELS.
- PROVIDE ALL NECESSARY WATERPROOFING, FLASHING, FALLS AND DRAINAGE AS REQUIRED FOR DECKINGS, AND ROOF FRAMING TO ARCHITECTS DETAILS.
- TIMBER WALL & FLOOR FRAMING AND BRACING IS TO COMPLY WITH AS1684 NATIONAL TIMBER CODE AND WITH ALL RELEVANT ARCHITECTURAL DETAILS.
- PROVIDE DOUBLE FLOOR JOINTS UNDER ALL WALLS THAT SPAN IN THE SAME DIRECTION WHETHER SHOWN ON PLAN OR NOT. FIX JOISTS TOGETHER WITH 1-M16 COACH BOLT AT 450mm MAXIMUM CENTRES STAGGERED
- PROVIDE LINTELS OVER ALL DOOR/WINDOW OPENINGS TO AUSTRALIAN STANDARDS. ENSURE LINTELS IN THE EXISTING BRICKWALL & OPENING IN SATISFACTORY CONDITION. MAY NOT BE SHOWN BE SHOWN ON PLANS FOR CLARITY.

SLAB ON GROUND

130mm THICK SLAB U.N.O. PLUS RIBS

PROVIDE SL82 MESH TOP THROUGHOUT
PLUS ADDITIONAL BARS AS SHOWN ON PLAN
ON 0.2mm THICK VAPOUR BARRIER
ON 30mm LAYER OF SAND BEDDING
ON COMPACTED SUB-GRADE

NOTE:

- COMPACT SLAB SUBGRADE TO MIN 98% STANDARD DRY DENSITY AT $\pm 2\%$ OPTIMUM MOISTURE CONTENT.
- REFER HYDRAULIC ENGINEERS DRAWINGS FOR SEWER DETAILS.
- ELECTRICAL AND PLUMBING SERVICES SHALL NOT BE CAST INTO SLAB.
- REFER TO ARCHITECTS DRAWINGS FOR FINISHED SLAB LEVELS AND FALLS.
- TRENCHES FOR SERVICES TO BE BACK FILLED TO GIVE SAME COMPACTION AS SUBGRADE.
- ALL BLOCKWORK, BRICK TIES, AND BRICK STIFFENERS TO COMPLY WITH COUNCIL EARTHQUAKE REQUIREMENTS.
- NON-LOAD BEARING WALLS TO BE BUILT OFF SLABS.
- PROVIDE WALL SEEPAGE AND UNDERFLOOR DRAINAGE

WALL CONSTRUCTION

BRICK WALLS

BRICK WALLS ARE TO BE BUILT IN ACCORDANCE WITH THE BRICK CODE AND BCA REQUIREMENTS INCLUDING ALL DAMP COURSING, BRICK TIES AND FLASHING ETC.

INTERNAL WALLS AND INTERNAL SKIN OF EXTERNAL WALLS SUPPORTING CONCRETE SLAB OVER

- BRICKS MAY BE COMMONS MIN 20MPa UNCONFINED COMPRESSIVE STRENGTH
- LINTELS OVER OPENINGS TO BE 85mm OR 170mm PRESTRESSED BRICK OR CONCRETE LINTELS APPROPRIATE FOR THE OPENING SIZE
- SLIP JOINT MATERIAL TP BE INSTALLED ATOP EACH LOAD BEARING WALL.

EXTERNAL SKIN

- BRICKS TO BE FACE BRICK TO ARCHITECTS SPECIFICATION
- LINTELS TO BE STEEL ANGEL TO LINTEL SCHEDULE
- PROVIDE ALL DAMP COURSES, FLASHING AND WEEPHOLES TO ENSURE NO MOISTURE PENETRATION INTO THE BUILDING
- TOP COURSE OF BRICK WALL TO BE TIED TO EACH STUD WITH BRICKTIES

STEELWORK/TIMBER MEMBER SCHEDULE

MARK	SIZE	REMARKS
WP1	240 X 45	TIMBER WALL PLATE TREATED SEASONED F7 EXTERNAL GRADE
WP2	90 X 45	TIMBER WALL PLATE TREATED SEASONED F7 EXTERNAL GRADE
WP3	140 X 45	TIMBER WALL PLATE TREATED SEASONED F7 EXTERNAL GRADE
BR1	2/90 X 45	TIMBER BEARER TREATED SEASONED F7 EXTERNAL GRADE
LJ1	240 X 45 @ 450 c/c	TIMBER JOISTS TREATED SEASONED F7 EXTERNAL GRADE
LJ2	140 X 35 @ 450 c/c	TIMBER JOISTS TREATED SEASONED F7 EXTERNAL GRADE
SC1	90 X 90 X 9 SHS	STEEL COLUMN

NOTE:

- PROVIDE TIMBER LINTELS OVER TIMBER DOOR/WINDOW OPENINGS TO AUSTRALIAN TIMBER CODE AS1684. ENSURE LINTELS IN EXISTING BRICKWALL & OPENING IN SATISFACTORY CONDITION
- DIAGONAL, FLOOR, WALL & ROOF BRACING TO AUSTRALIAN TIMBER CODE AS1684
- ALL EXPOSED TIMBER TO BE EXTERNAL GRADE OR TREATED FOR EXTERNAL USE
- ALL EXPOSED STEEL MEMBER S TO BE H.D. GALVZD.
- ALL FLOOR JOISTS TO BE BLOCKED TO THE REQUIREMENTS OF THE DESIGN MANUALS
- BUILDER TO CONFIRM ALL TIMBERSIZING WITH REFERENCE TO DESIGN MANUALS PRIOR TO ORDERING MATERIALS & ERECTION

NOTE:

THIS IS A COMPILATION ENGINEERING AND SURVEY DRAWING DEPICTING STRUCTURAL ELEMENTS OVERLAYED ON AN EXISTING SITE SURVEY. SITE SURVEY PREPARED BY : RICHARD & LOFTUS P/L REF: 1309 DATE: 20/07/12 Ph - 9482 8756

NOTE:

ALL FALLS, WATERPROOFING AND DRAINAGE OUTLETS FOR PLANTER BOXES, TERRACES TO ARCHITECTS DETAILS. TYPICAL.

NOTE:

PROVIDE VERTICAL JOINTS TO BRICK / BLOCK WORK TO ARCHITECTS SPECIFICATIONS & AS3700 BRICK CODE.

NOTE:

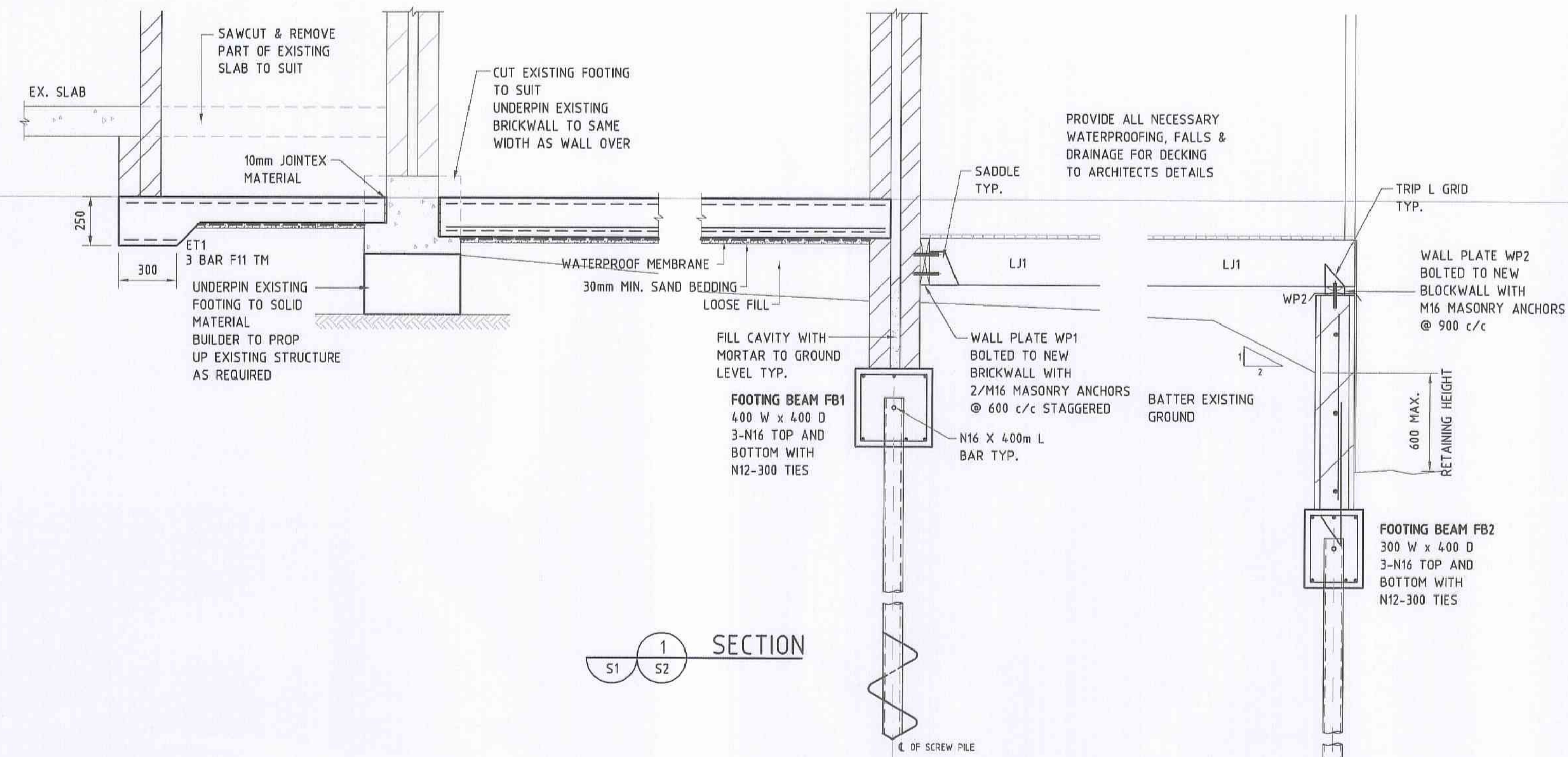
BRICKWORK IS TO BE ARTICULATED TO ARCHITECTS SPECIFICATIONS & AS3700 BRICK CODE.

NOTE:

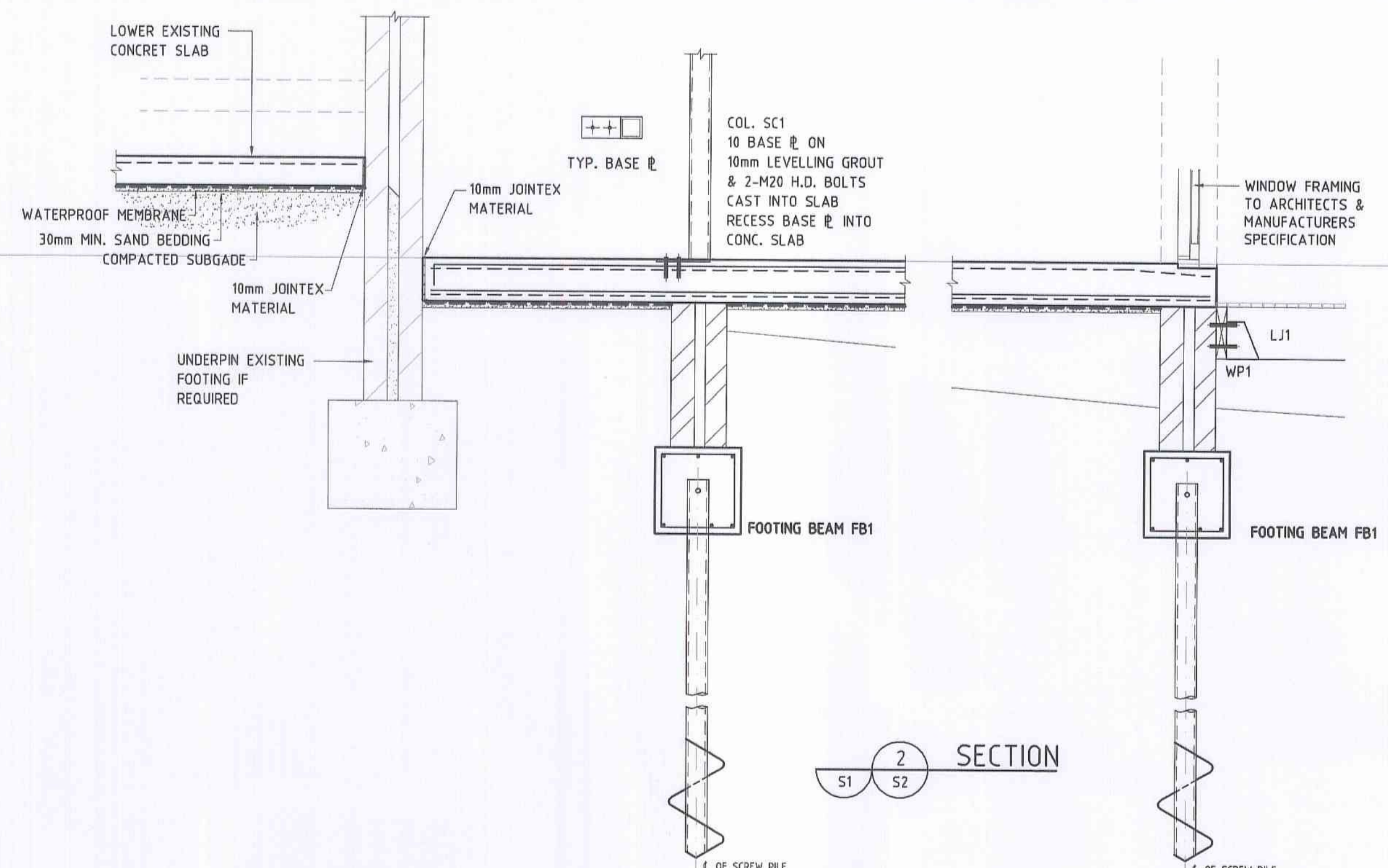
ENSURE ALL BRICKWORK IS SUPPORTED DURING CONSTRUCTION. PROVIDE APPROPRIATE TIES AS REQUIRED FOR EARTHQUAKE CODE.

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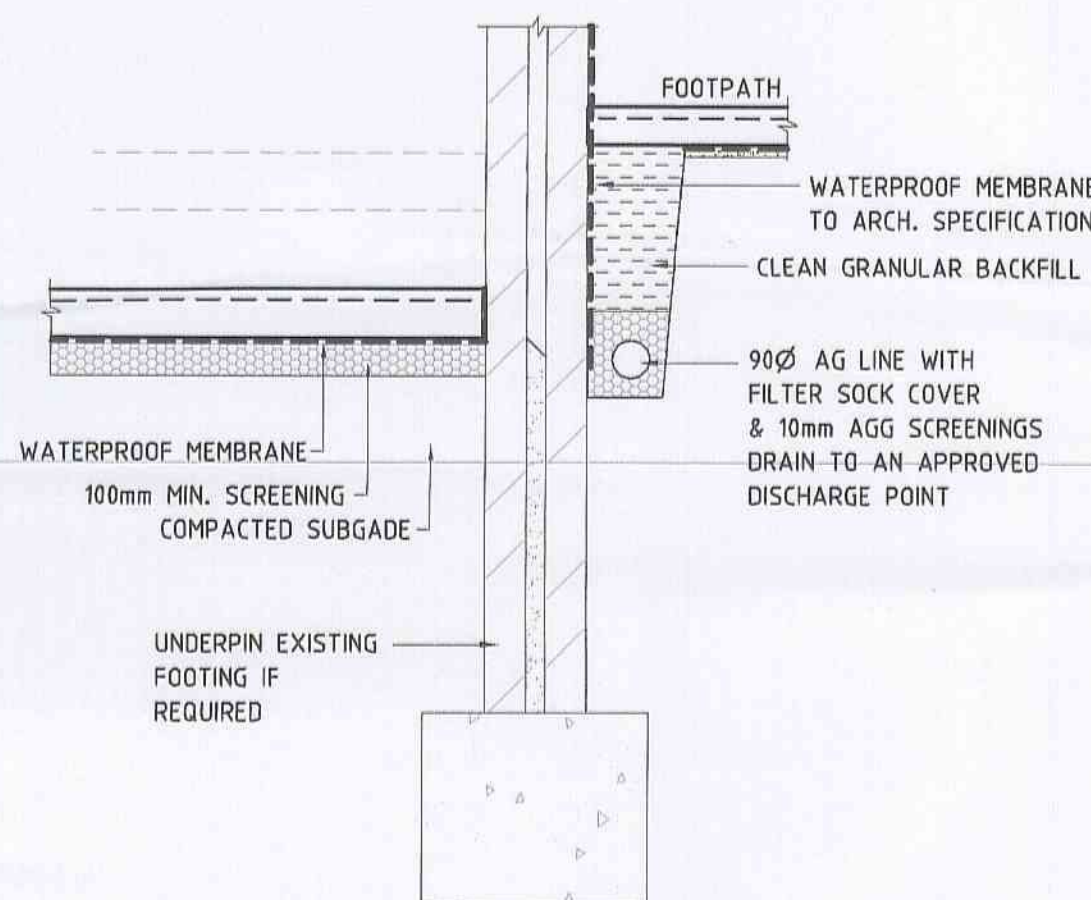
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DRG		
HIGHER FOOTING & LEVEL 1 PLAN		
BEKKER paul bekker engineering design buro pty limited suite 2/11 rangers road, neutral bay nsw 2089 abn 89 117 772 517 phone: (02) 9553 6244 fax: (02) 9553 6266 email: bekker@spin.net.au postal address: po box 591 northbridge, nsw 1560 CONSULT AUSTRALIA MEMBER		
DESIGNED		
SCALE	DATE	DRG No.
1:100	JAN.-2013	62301 S02
		REV A



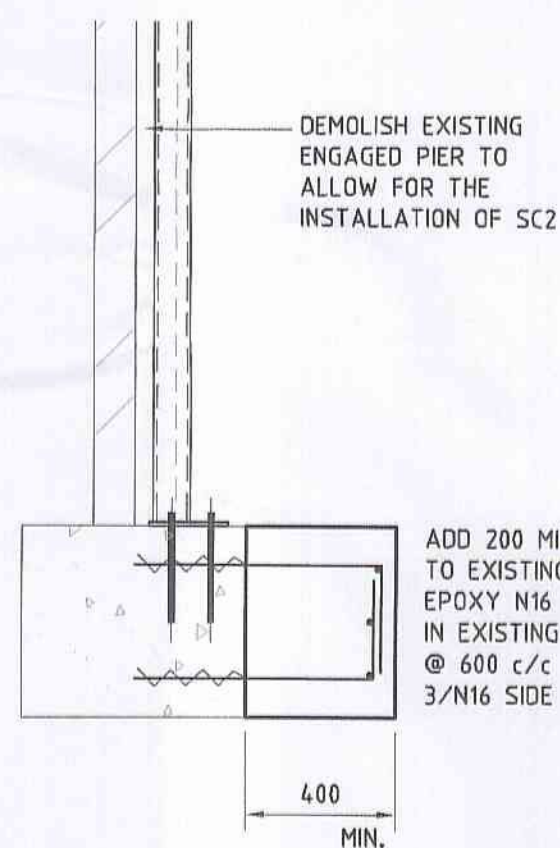
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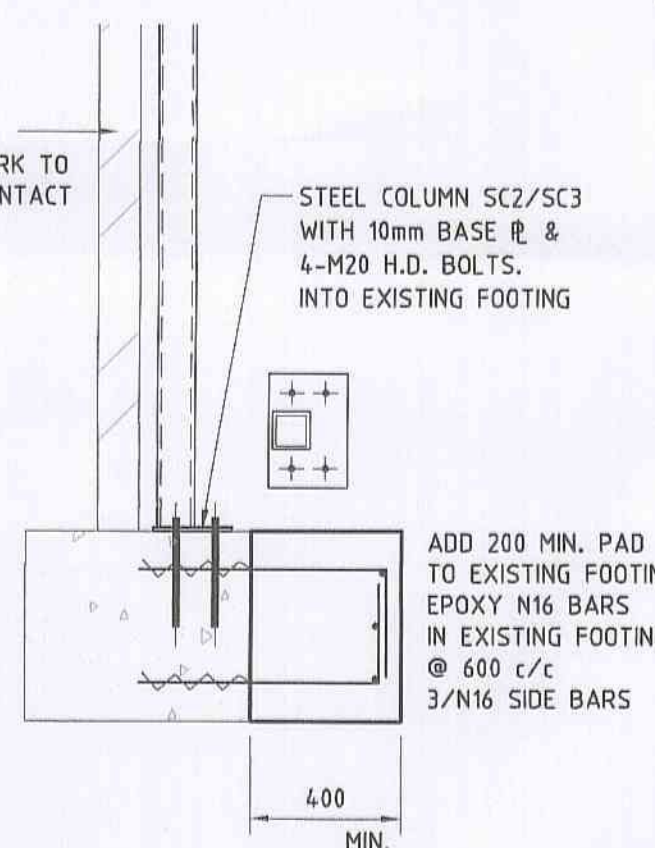
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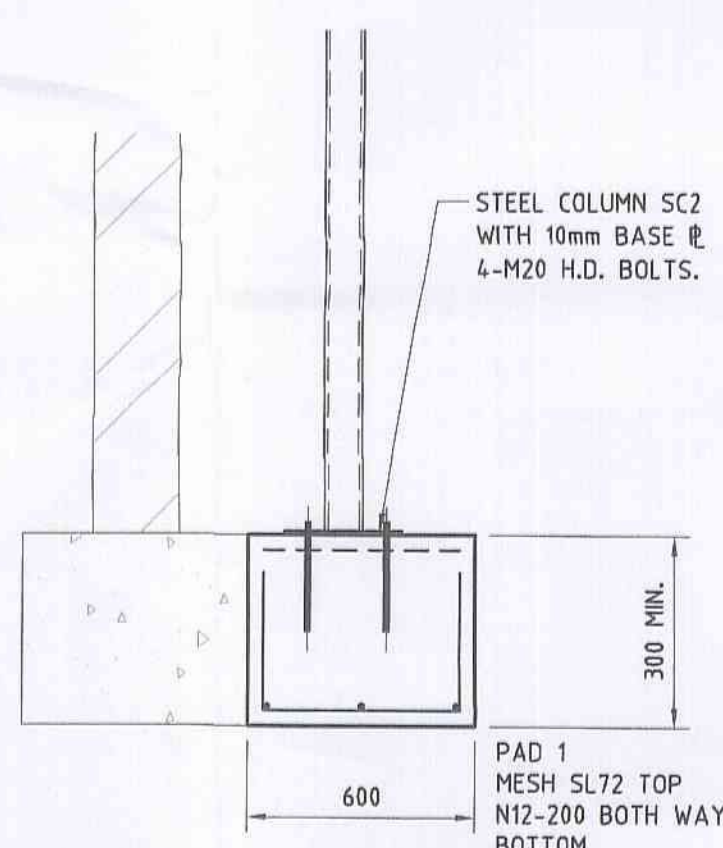
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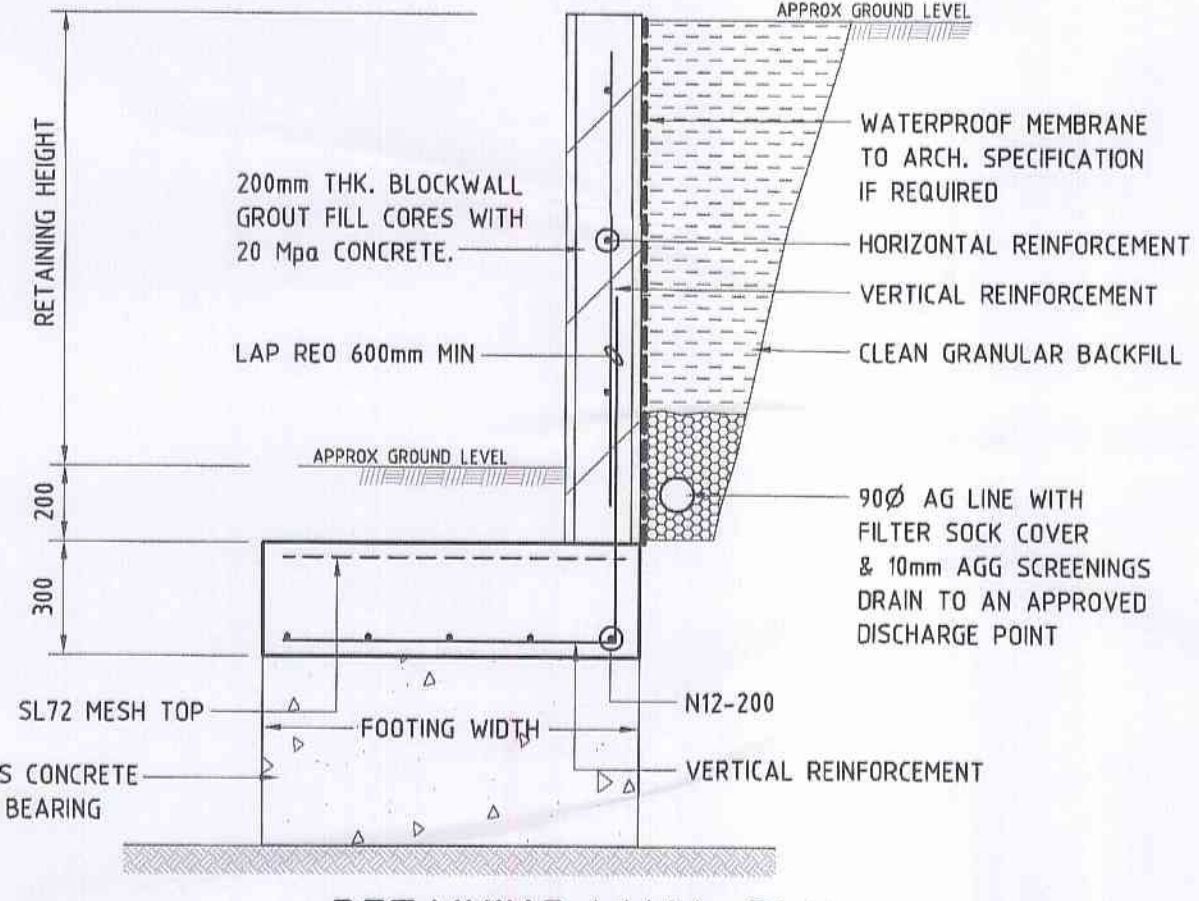
SECTION 4



SECTION 5



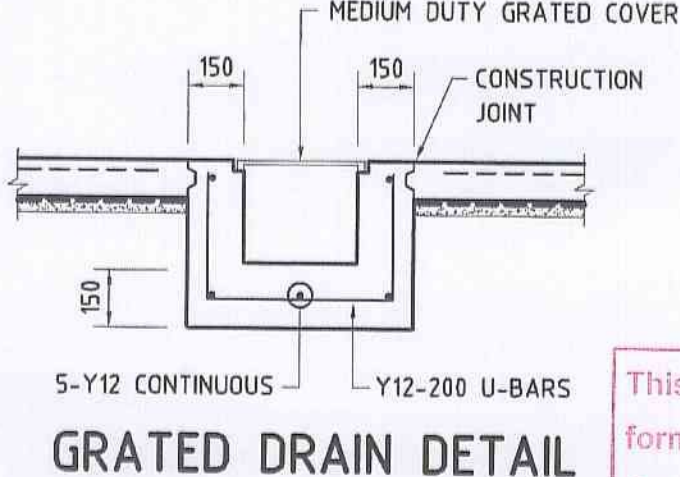
COL. SC2/PAD 1



RETAINING WALL RW1
TYPICAL RETAINING WALL DETAIL

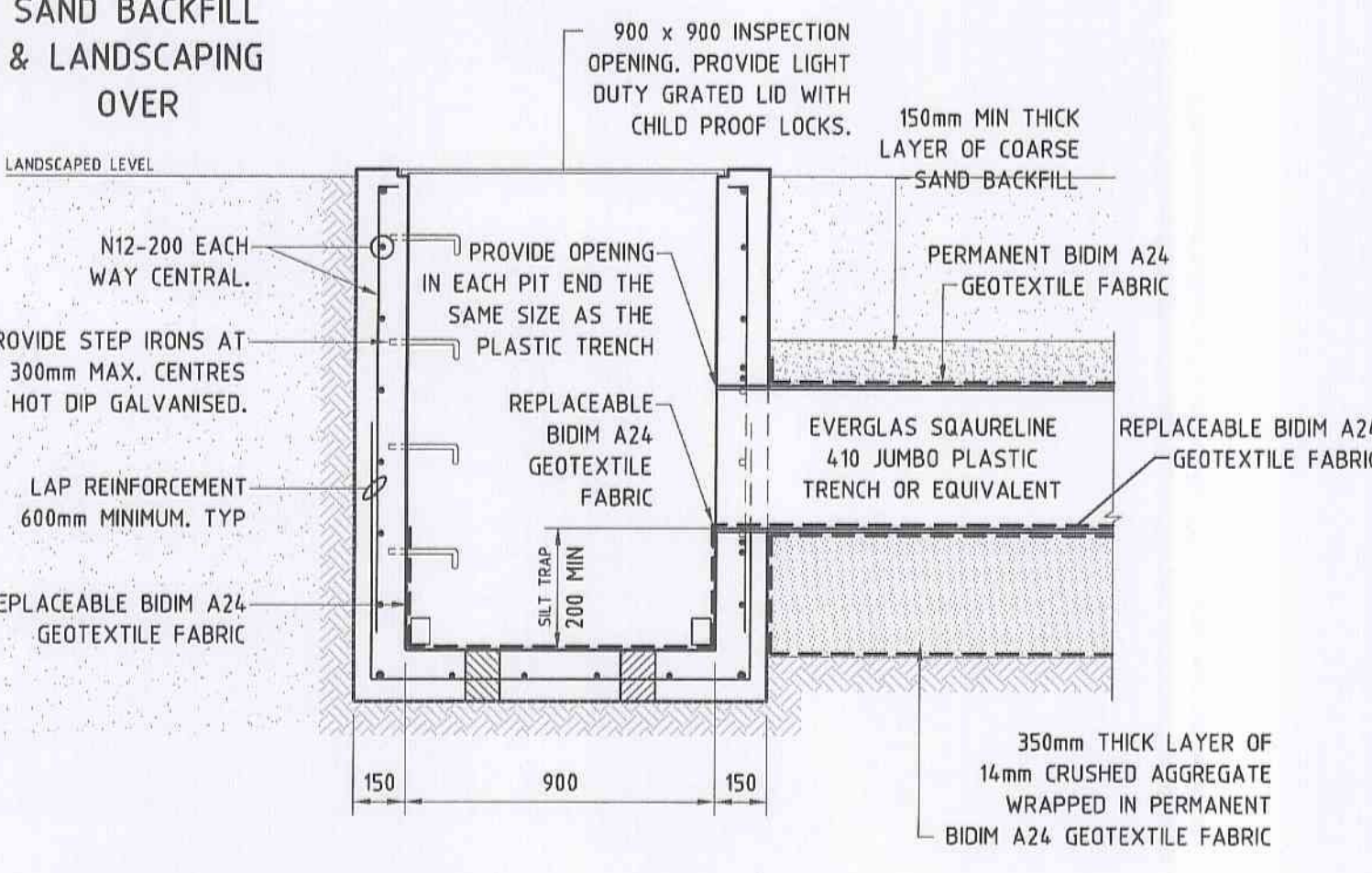
HEIGHT OF WALL	FOOTING WIDTH	VERTICAL REO	HORIZONTAL REO
1000 MAX	600mm	N12-400	N12-400
1000-1800 MAX	1100mm	N16-400	N12-400

- FOOTING TO BEAR ON NATURAL GROUND WITH A SAFE BEARING CAPACITY OF ~ 150 kPa.
- PROVIDE VERTICAL JOINTS AT 8m MAX. CENTRES.

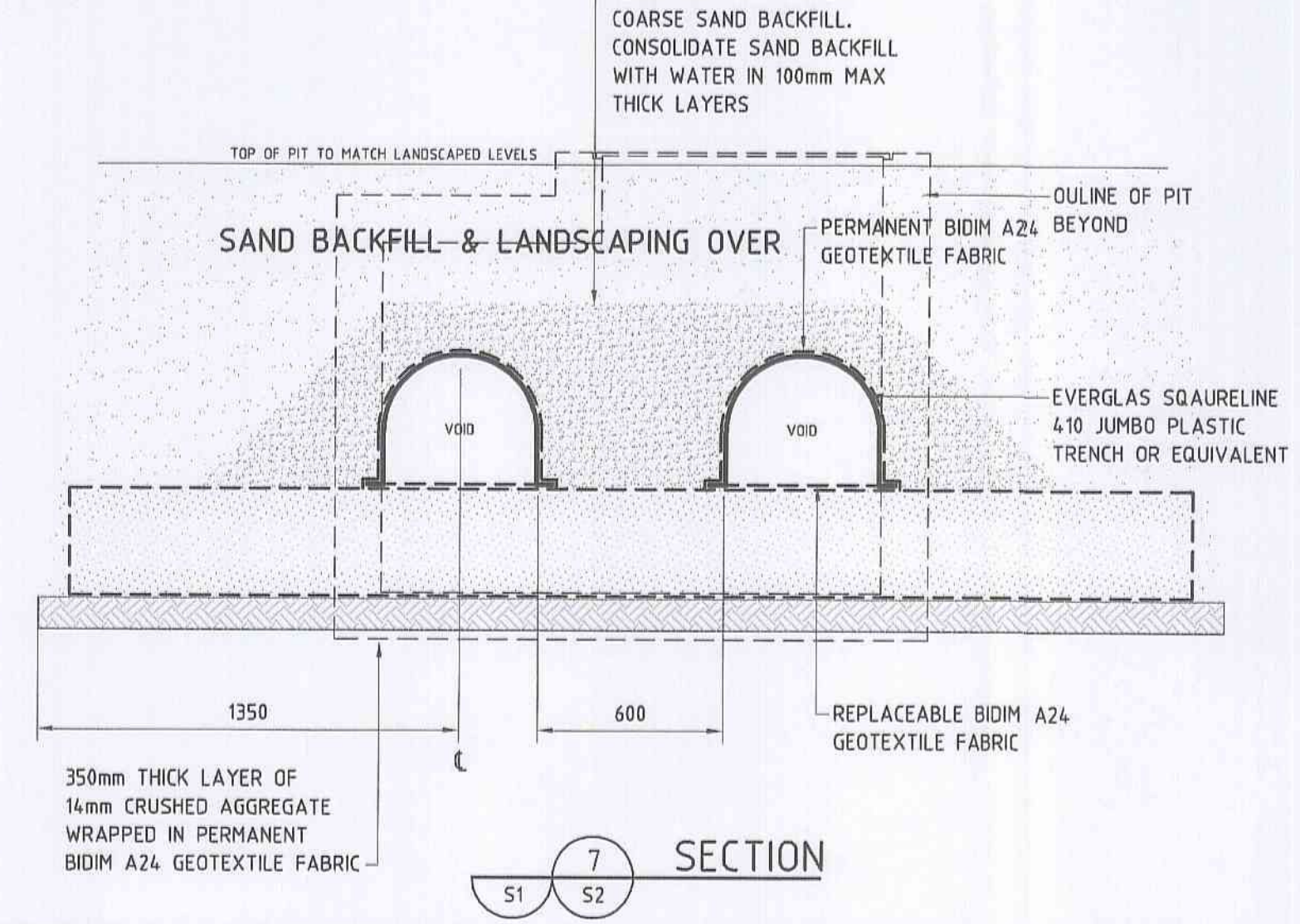


GRATED DRAIN DETAIL

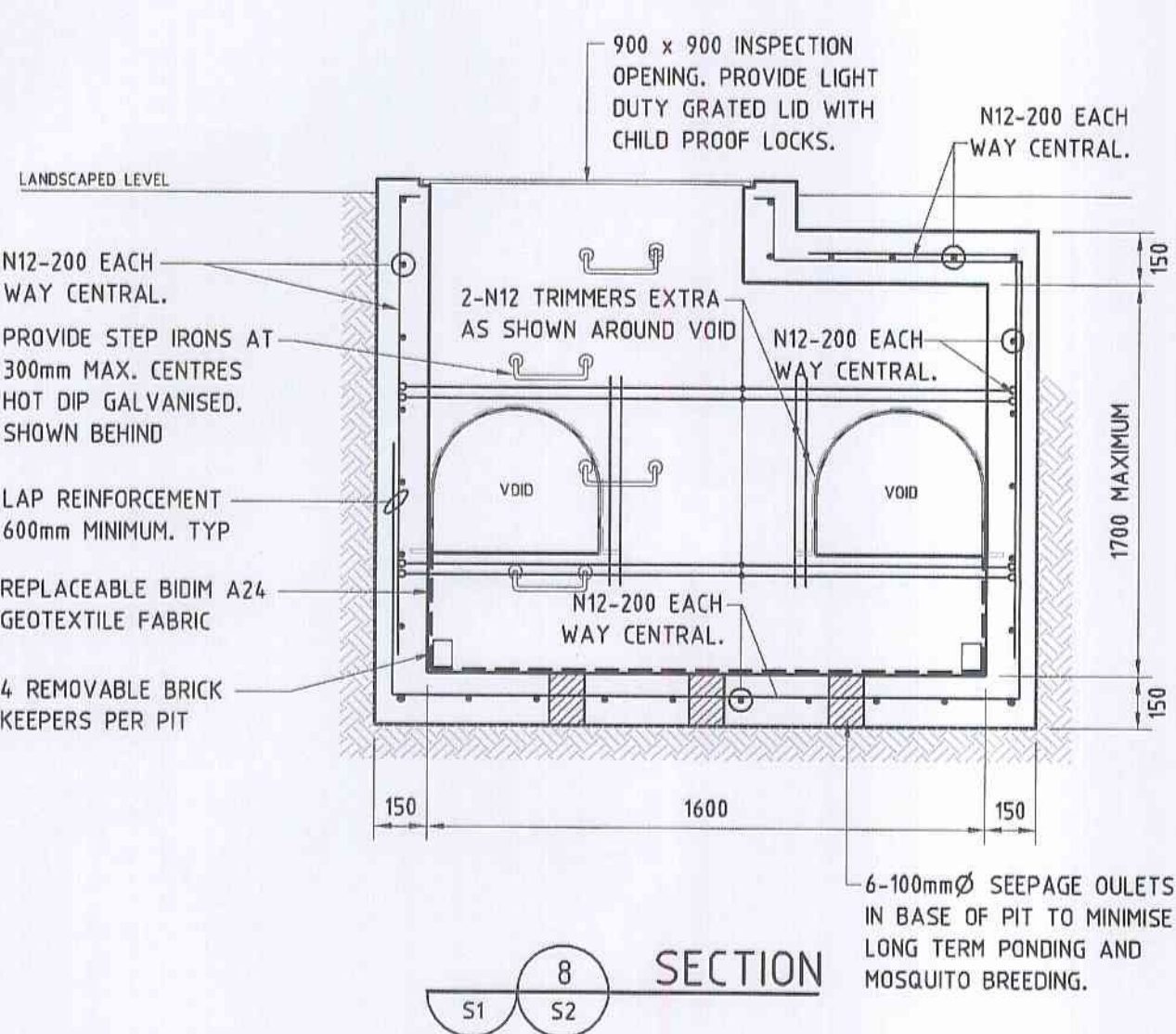
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SECTION 6

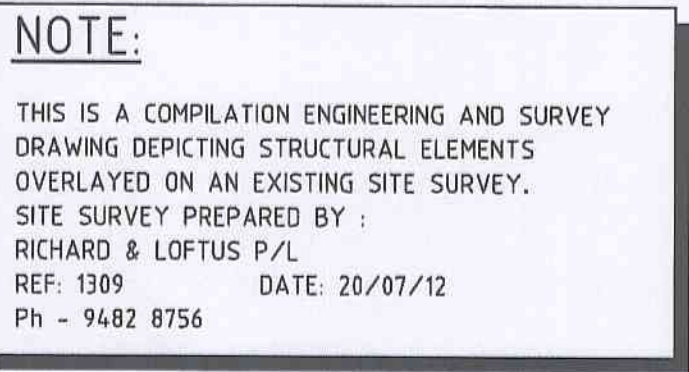


SECTION 7

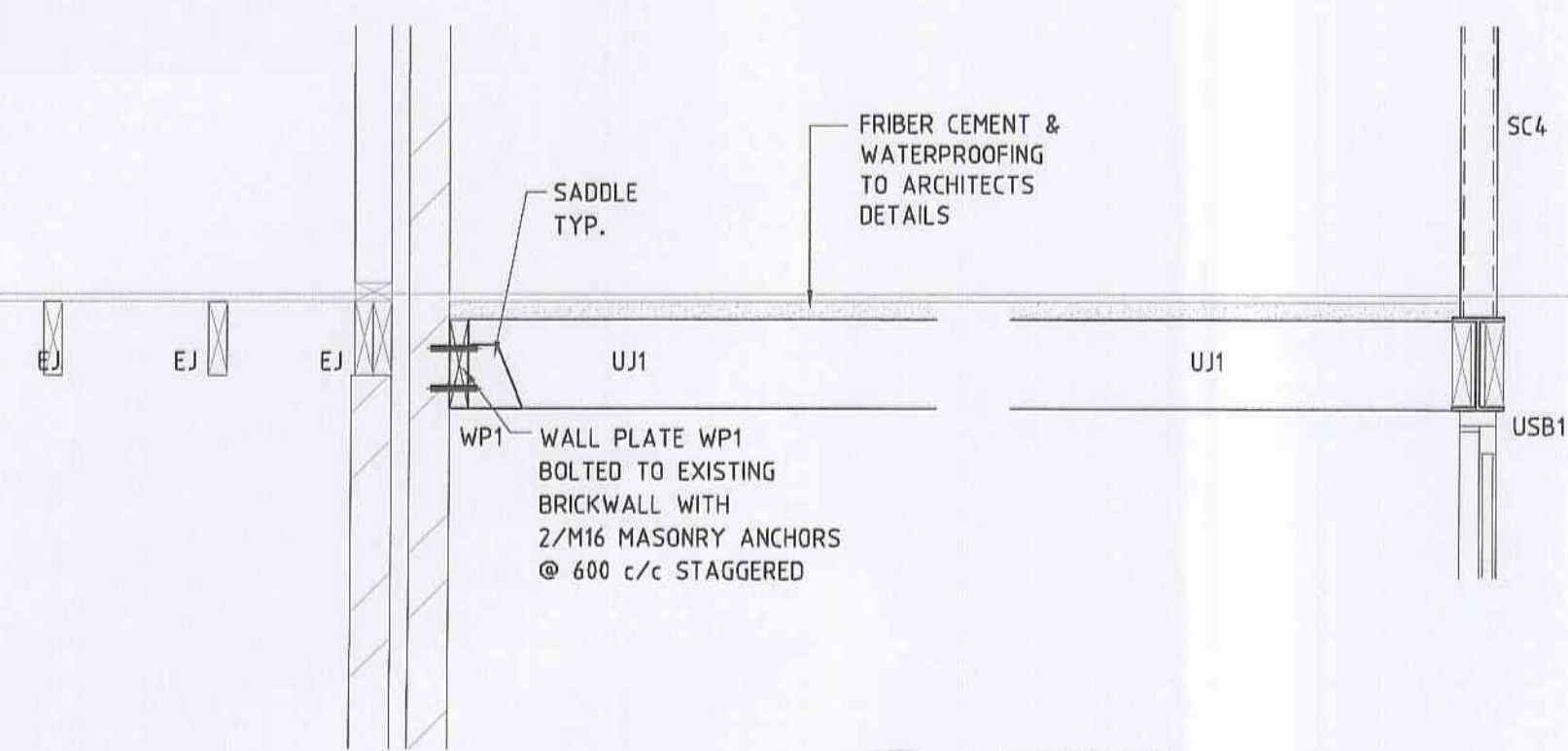


SECTION 8

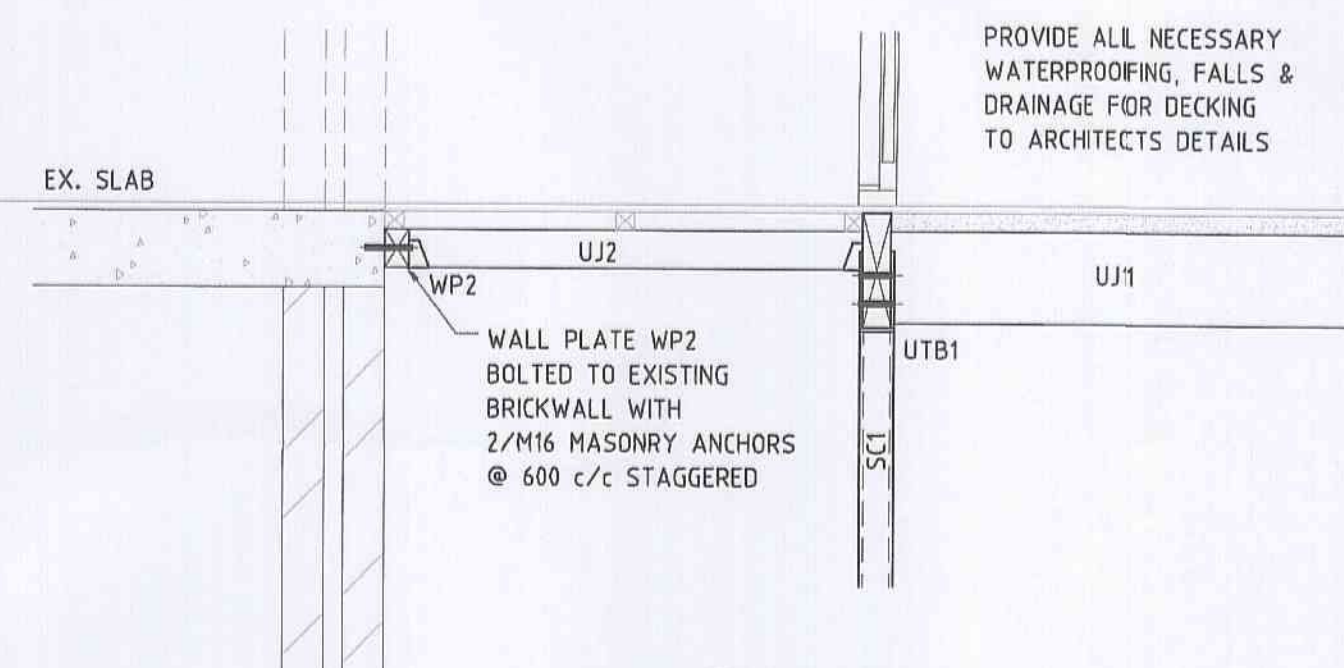
A	08.03.13	FOR TENDER & CONSTRUCTION CERTIFICATE	
REV	DATE	DESCRIPTION	
ARCH			
Walter Barda Design architecture landscape interiors 2/04-13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com ABN: 48 072 136 313 Office: 02 9360 2340 Facsimile: 02 9360 2324			
PROJECT			
ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107			
DRG			
FOOTING & LEVEL 1 DETAILS			
BEKKER paul bekker engineering design buro pty limited CONSULT AUSTRALIA MEMBER suite 2/11 ringiers road, neutral bay nsw 2289 phone: (02) 9953 6244 fax: (02) 9953 6266 postal address: po box 591 northbridge, nsw 1560 ahb 89 117 772 517 email: bekker@epin.net.au			
DESIGNED			
SCALE	DATE	DRG No.	REV
1:100	JAN. 2013	62301 S03	A



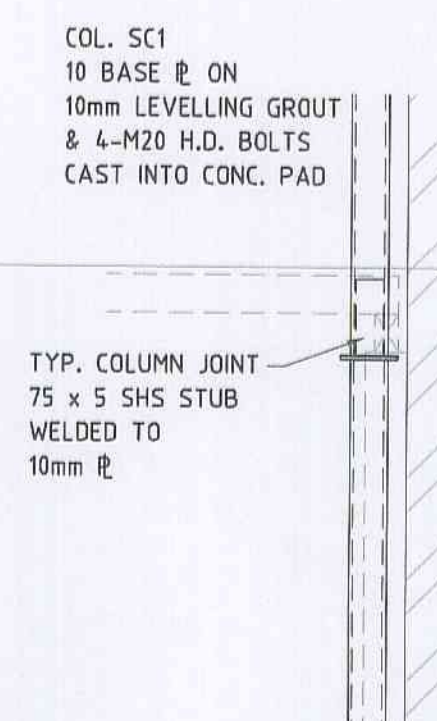
DESIGNED			
SCALE	DATE	DRG No.	REV
1:100	JAN. *2013	62301	S04 A



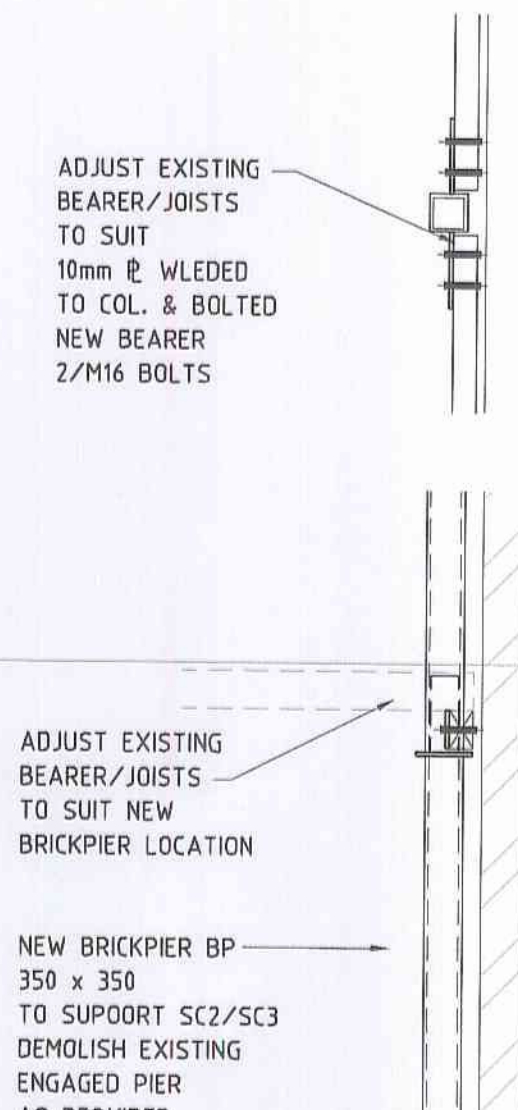
1 SECTION
S4



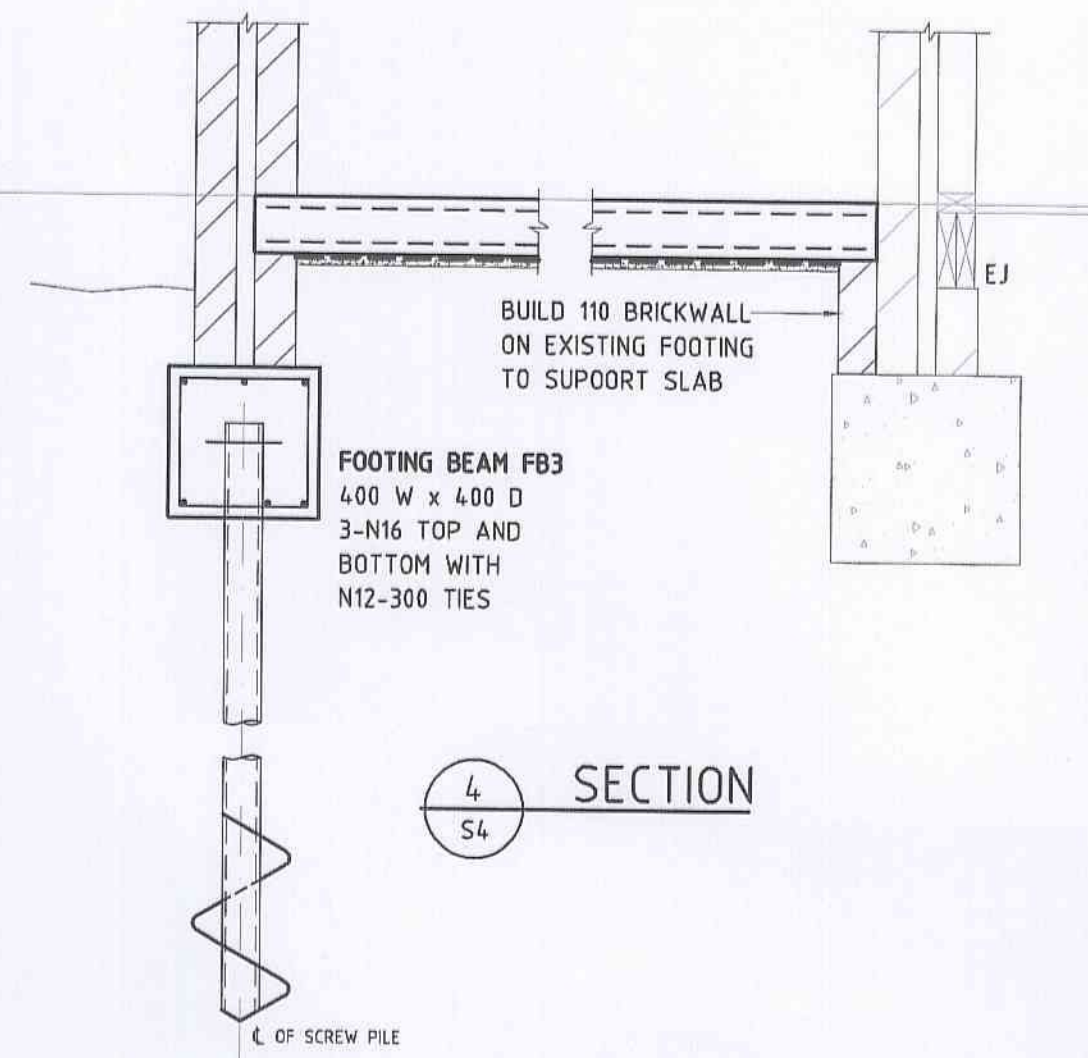
2 SECTION
S4



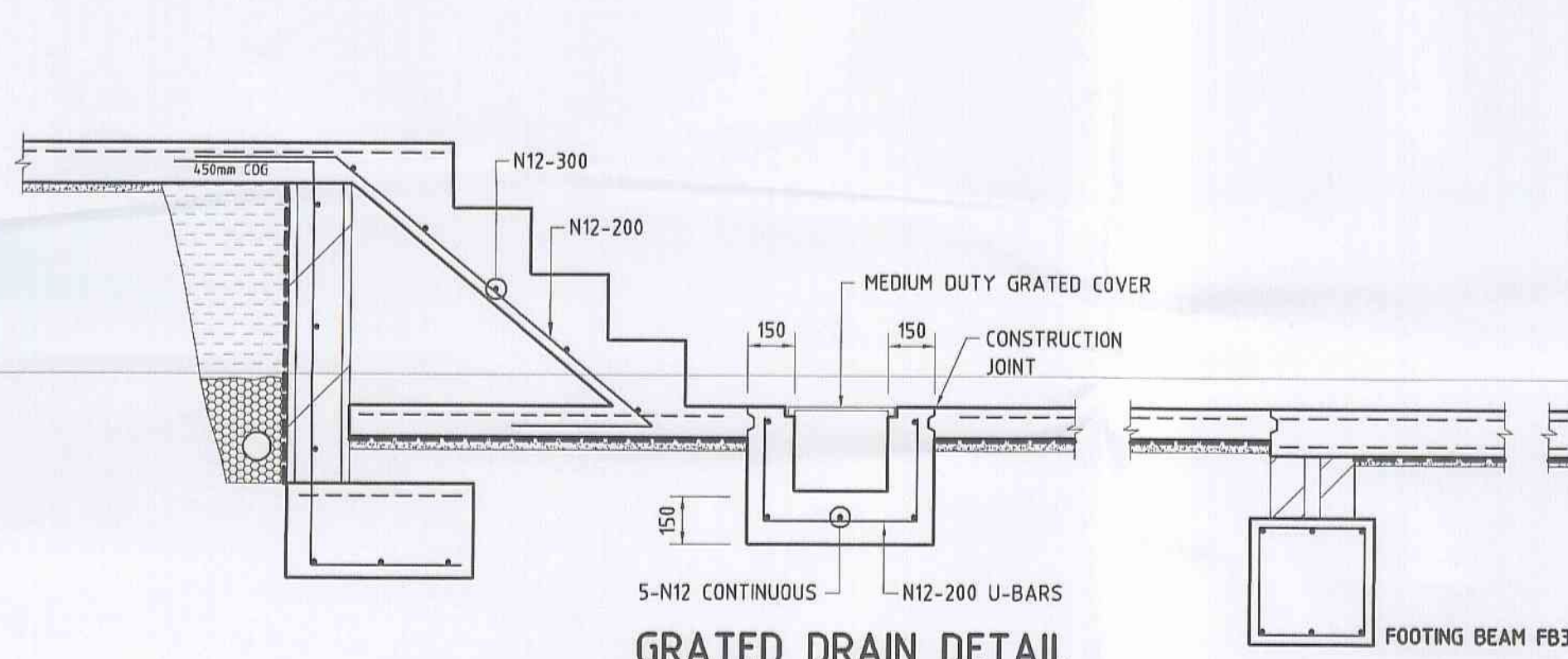
3 SECTION
S4



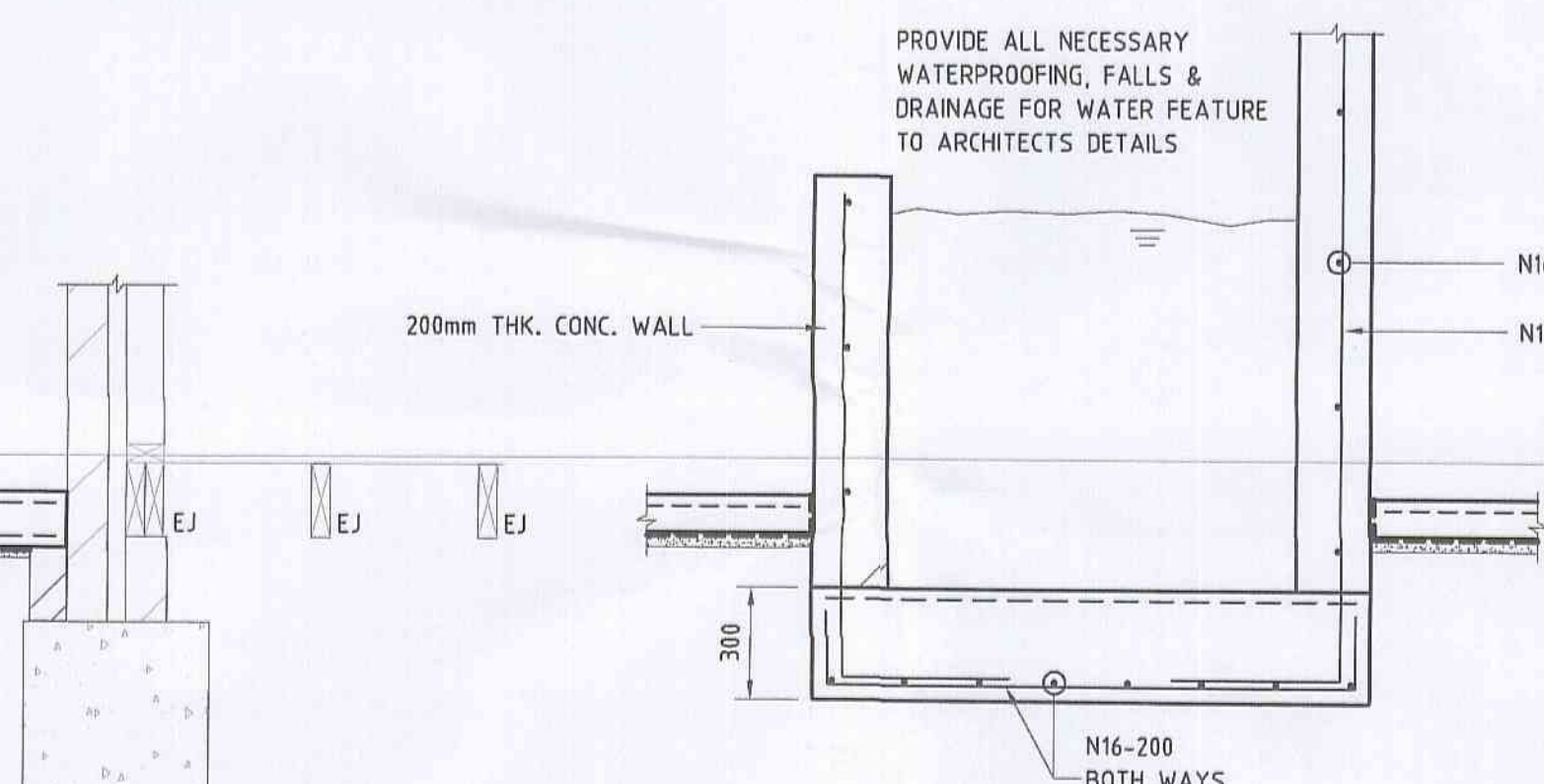
3A SECTION
S4



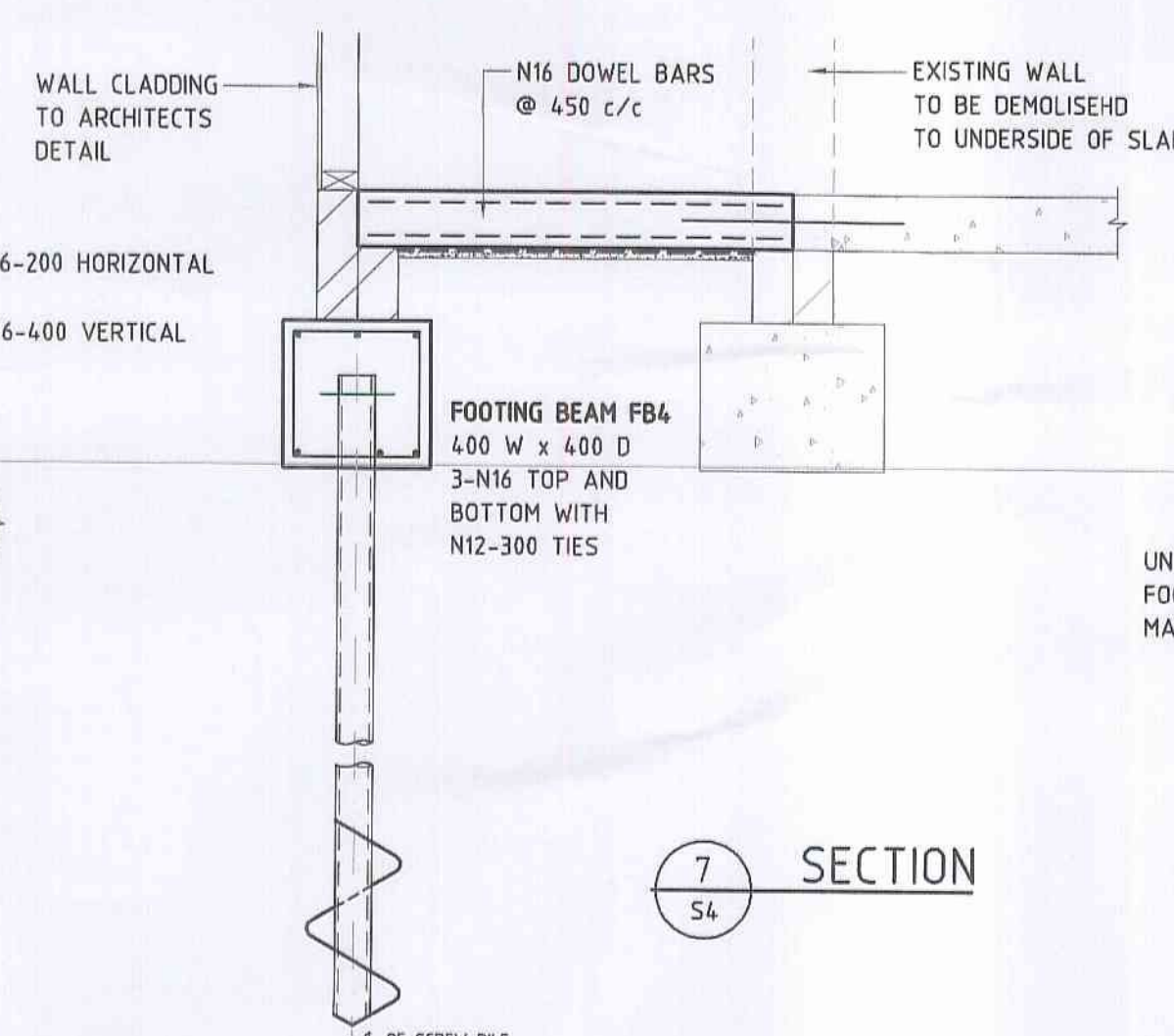
4 SECTION
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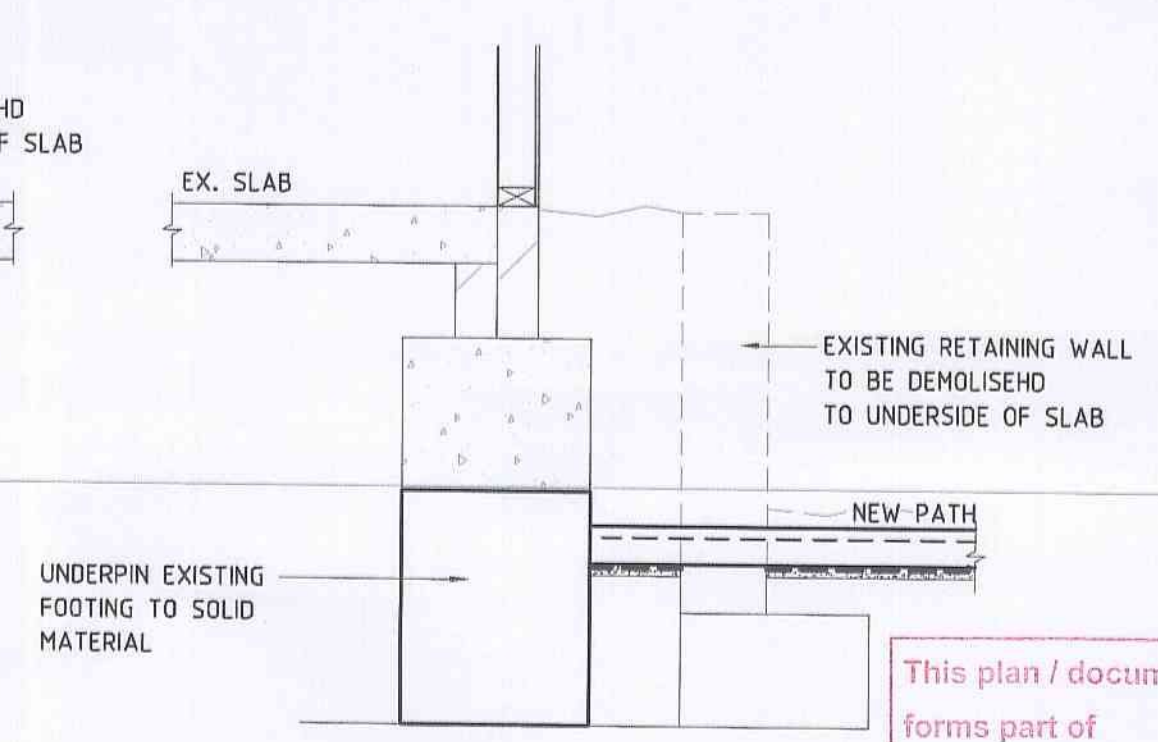
5 SECTION
S4



6 SECTION
S4



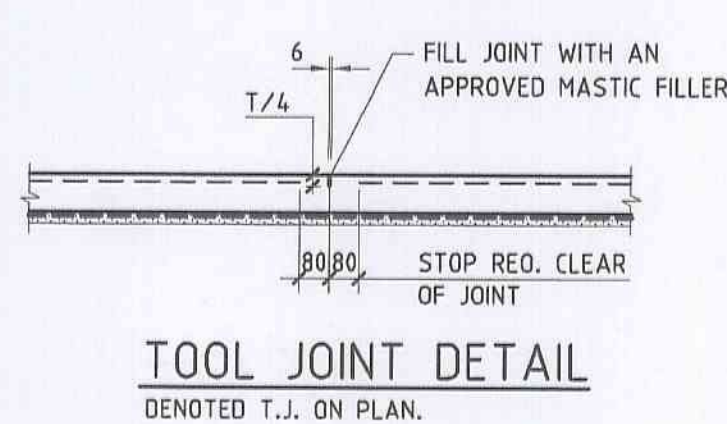
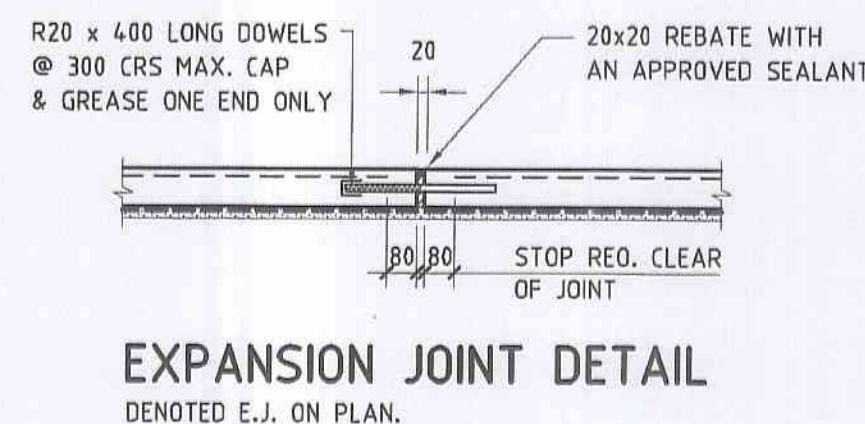
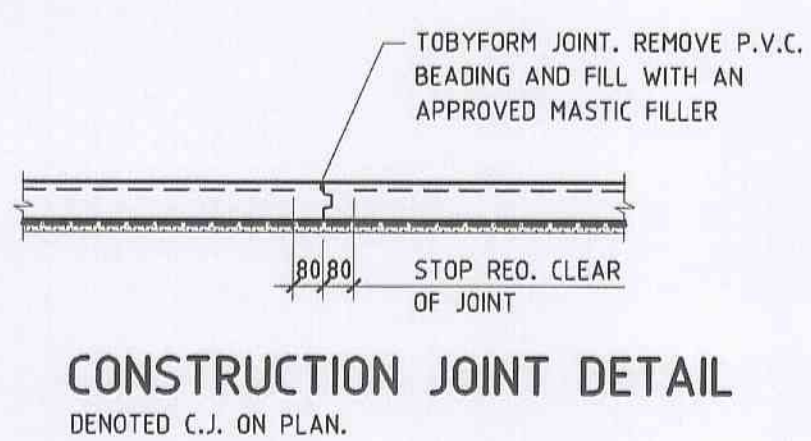
7 SECTION
S4

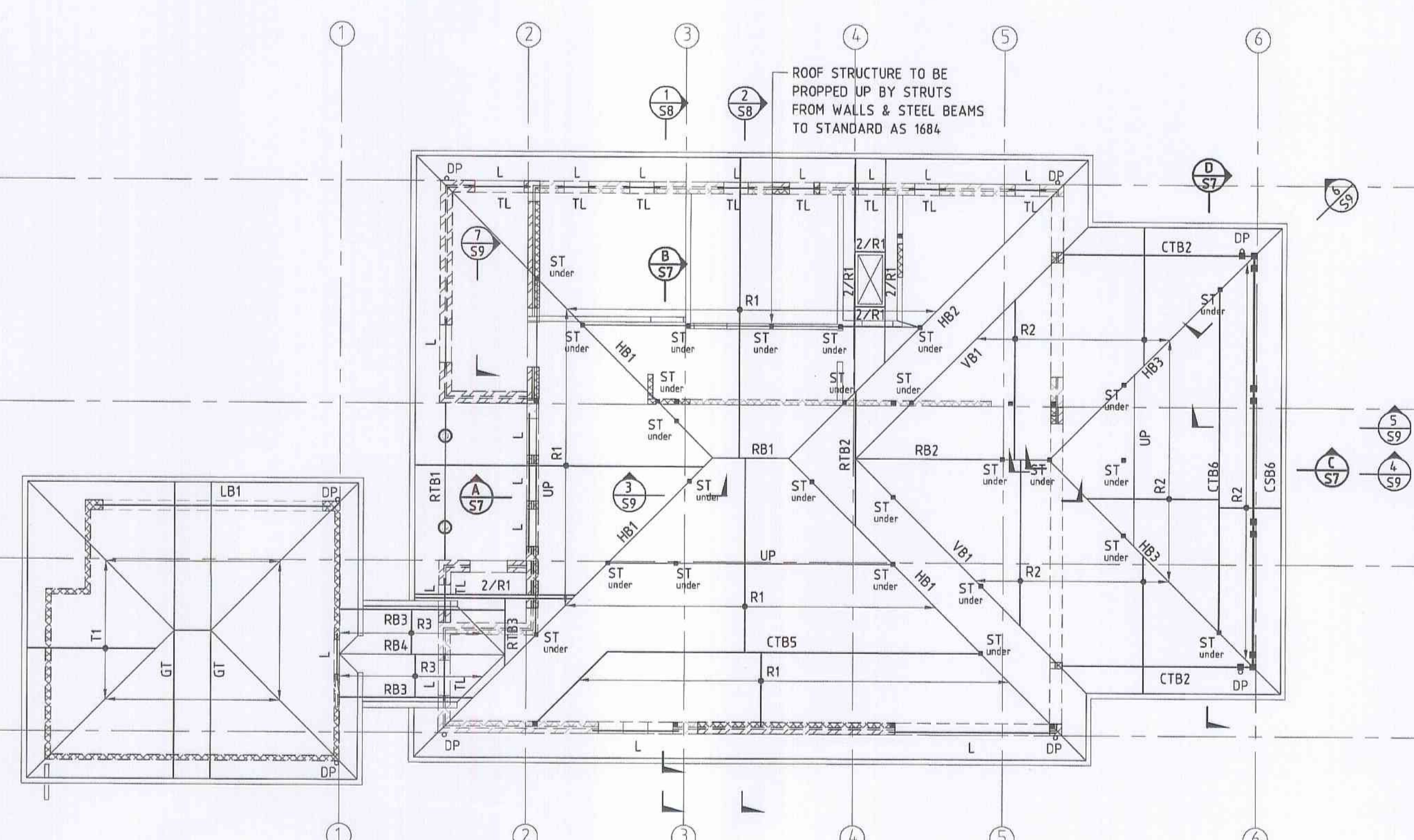
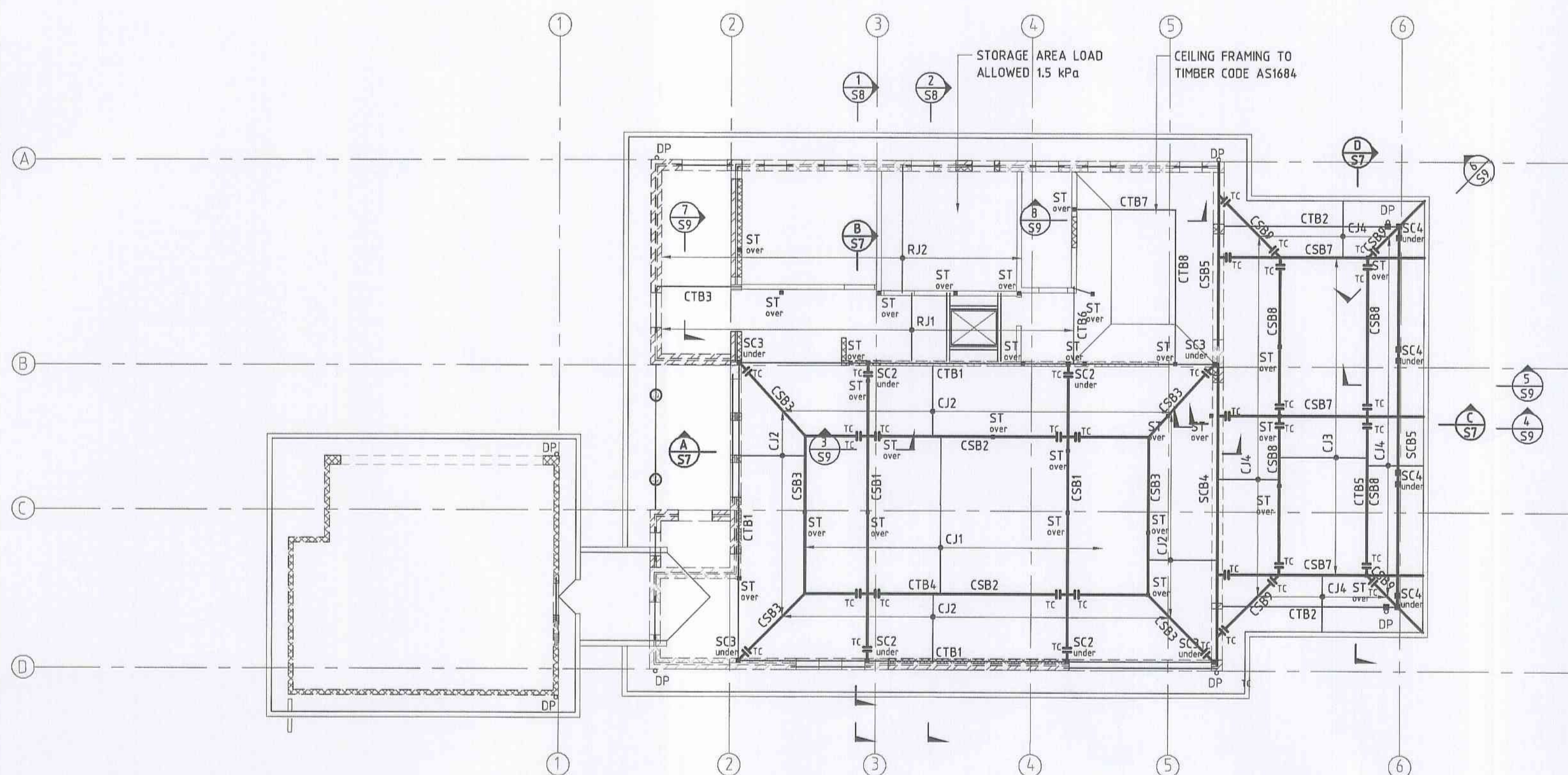


8 SECTION
S4

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A	08.03.13	FOR TENDER & CONSTRUCTION CERTIFICATE	
REV	DATE	DESCRIPTION	
ARCH			
Walter Barda Design architecture landscape interiors 2/04 13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com ABN: 48 072 136 513 Office: 02 9380 2340 Facsimile: 02 9380 2324			
PROJECT			
ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107			
DRG			
LEVEL 2 DETAILS			
BEKKER paul bekker engineering design buro pty limited suite 2/11 rangiers road, neutral bay nsw 2089 phone: (02) 9551 6244 fax: (02) 9551 6266 postal address: po box 591 northbridge, nsw 1560 abn 69 117 772 517 email: bekker@spn.net.au CONSULT AUSTRALIA MEMBER			
DESIGNED			
SCALE	DATE	DRG No.	REV
1:100	JAN. 2013	62301 S05	A





ROOF FRAMING PLAN

NOTE:
ENTIRE ROOF TO BE DIAGONALLY
BRACED WITH FLAT STRAP BRACE,
NOT SHOWN FOR CLARITY.

NOTE:
PROVIDE TIEDOWNS FOR
ROOF TO RESIST UPLIFT

NOTE:
ALL ROOFING, CAPPING,
WATERPROOFING, FLASHING FALLS
& GUTTER TO ARCHITECTS
DETAILS.

NOTE:
ROOF TRUSSES INSTALLATION
TO COMPLY WITH AS4440



CEILING FRAMING PLAN

NOTE

PROVIDE ALL NECESSARY WATERPROOFING, FALLS
AND DRAINAGE AS REQUIRED FOR ROOF TO
ARCHITECTS AND HYDRAULIC ENGINEERS DETAILS.

LEGEND

---	LOAD-BEARING BRICK WALLS UNDER
----	LOAD-BEARING TIMBER WALLS UNDER
SP	500 LONG X 10mm STEEL SPREADER @ FOR STEEL BEAM ON BRICK WALL
CL	110x170 PRE-STRESSED CONCRETE LINTEL TO MANUFACTURERS SPECIFICATION
TL	TIMBER LINTEL TO AUSTRALIAN STANDARD
UP	TIMBER UNDERPURLIN TO AUSTRALIAN STANDARD
ST	TIMBER STRUTS TO AUSTRALIAN STANDARD
DP	DOWNPIPES TO ARCHITECTS SPECIFICATION

GENERAL NOTES

- REFER TO HYDRAULIC ENGINEERS DRAWINGS FOR SEWER AND DRAINAGE DETAILS.
- REFER TO ARCHITECTS DRAWINGS FOR FINISHED ROOF LEVELS.
- PROVIDE ALL NECESSARY WATERPROOFING, FLASHING, CAPPING, FALLS AND DRAINAGE
AS REQUIRED FOR ROOF, AND ROOF FRAMING TO ARCHITECTS DETAILS.
- ROOF FRAMING AND BRACING IS TO COMPLY WITH AS1684 NATIONAL
TIMBER FRAMING CODE AND WITH ALL RELEVANT ARCHITECTURAL DETAILS.
- PROVIDE BOX GUTTER, EAVE GUTTERS AND DOWN PIPES TO AS 3500
AND COUNCIL REQUIREMENTS.

ROOF & CEILING CONSTRUCTION

ROOF & TRUSS FRAMING

ROOF, TRUSS AND CEILING FRAMING ARE TO BE BUILT IN ACCORDANCE WITH
THE TIMBER CODE AND BCA REQUIREMENTS, INCLUDING ANCILLARY ROOF FRAMING
MEMBERS SUCH AS JACK RAFTERS OR TRUSSES, CANTILEVERED CORNER BEAMS,
FASCIA BEAMS, VALLEYS, CEILING JOISTS, BATTENS ETC., PLUS ALL BRACING
REQUIRED TO THE ROOF AND CEILING TO ENSURE LATERAL STABILITY OF THE BUILDING.

ENSURE ALL ROOF MEMBERS ARE ADEQUATELY TIED DOWN TO RESIST ALL EXPECTED
UPLIFT FORCES

STEELWORK/TIMBER MEMBER SCHEDULE

MARK	SIZE	REMARKS
CSB1	200UB 30	STEEL BEAM
CSB2	200UB 30	STEEL BEAM
CSB3	200UB 30	STEEL BEAM
CSB4	200UB 30	STEEL BEAM
CSB5	200UB 30	STEEL BEAM
CSB6	200UB 30	STEEL BEAM
CSB7	200UB 30	STEEL BEAM
CSB8	200UB 30	STEEL BEAM
CSB9	200UB 30	STEEL BEAM
CTB1	200 X 63	TIMBER BEAM LVL
CTB2	200 X 45	TIMBER BEAM LVL
CTB3	150 X 45	TIMBER BEAM LVL
CTB4	200 X 45	TIMBER BEAM LVL
CTB5	200 X 45	TIMBER BEAM LVL
CTB6	200 X 63	TIMBER BEAM LVL
CTB7	200 X 45	TIMBER BEAM LVL
CTB8	200 X 63	TIMBER BEAM LVL
RJ1	95 X 45 @ 450 c/c	TIMBER JOISTSL LVL
RJ2	150 X 45 @ 450 c/c	TIMBER JOISTSL LVL

- NOTE:
- PROVIDE TIMBER LINTELS OVER TIMBER DOOR/WINDOW OPENINGS
TO AUSTRALIAN TIMBER CODE AS1684, ENSURE LINTELS IN
EXISTING BRICKWALL & OPENING IN SATISFACTORY CONDITION
 - DIAGONAL, FLOOR, WALL & ROOF BRACING
TO AUSTRALIAN TIMBER CODE AS1684
 - ALL EXPOSED TIMBER TO BE EXTERNAL GRADE OR TREATED FOR EXTERNAL USE
 - ALL EXPOSED STEEL MEMBER S TO BE H.D. GALVZD.

STEELWORK/TIMBER MEMBER SCHEDULE

MARK	SIZE	REMARKS
RB1	200 X 63	TIMBER BEAM LVL
RB2	200 X 63	TIMBER BEAM LVL
RB3	150 X 45	TIMBER BEAM LVL
RB4	150 X 45	TIMBER BEAM LVL
HB1	200 X 63	TIMBER BEAM LVL
HB2	300 X 63	TIMBER BEAM LVL
HB3	200 X 63	TIMBER BEAM LVL
VB1	240 X 63	TIMBER BEAM LVL
RTB1	200 X 45	TIMBER BEAM LVL
RTB2	240 X 63	TIMBER BEAM LVL
RTB3	150 X 45	TIMBER BEAM LVL
R1	150 X 45 @ 450 c/c	TIMBER RAFTER LVL
R2	150 X 45 @ 450 c/c	TIMBER RAFTER LVL
R3	95 X 45 @ 450 c/c	TIMBER RAFTER LVL
CJ1	130 X 45 @ 450 c/c	TIMBER CEILING JOISTS LVL
CJ2	95 X 45 @ 450 c/c	TIMBER CEILING JOISTS LVL
CJ3	95 X 45 @ 450 c/c	TIMBER CEILING JOISTS LVL
CJ4	95 X 45 @ 450 c/c	TIMBER CEILING JOISTS LVL
GT	GIRDER TRUSS	TRUSSES TO MANUFACTURERS SPECIFICATION
ST	STANDARD TRUSS	TRUSSES TO MANUFACTURERS SPECIFICATION

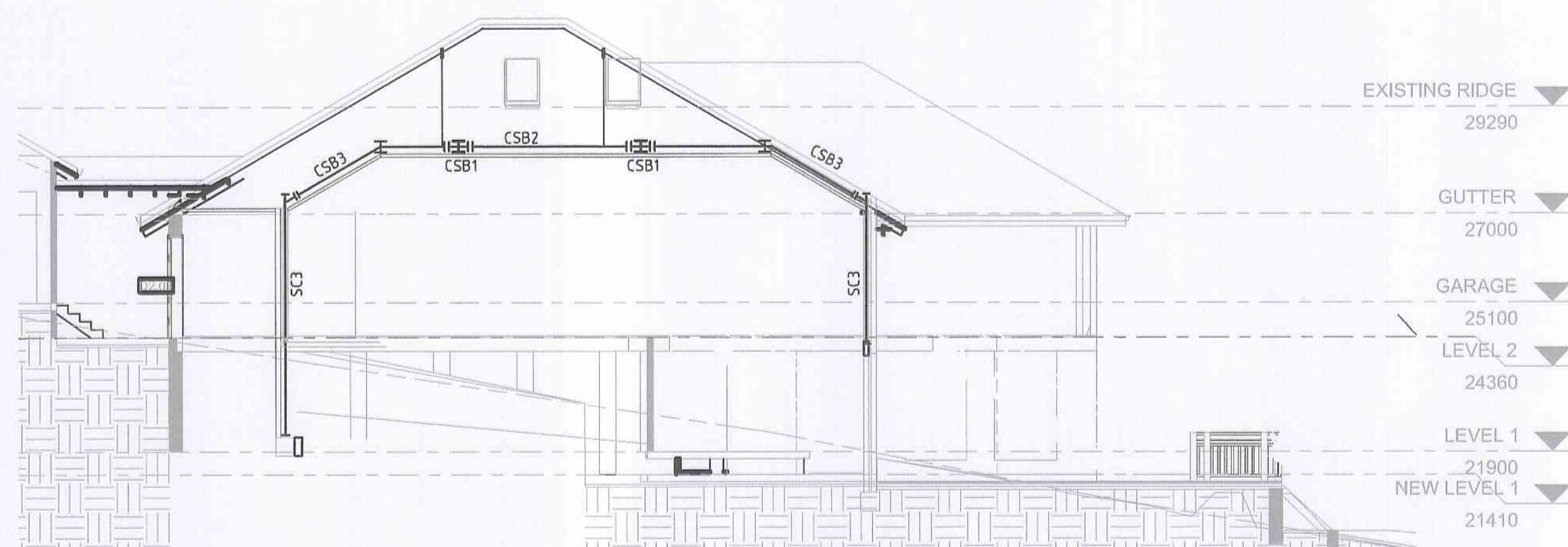
- ALL FLOOR JOISTS TO BE BLOCKED TO THE
REQUIREMENTS OF THE LVL DESIGN MANUAL
- BUILDER TO CONFIRM ALL TIMBERSIZING WITH REFERENCE TO
LVL DESIGN MANUAL PRIOR TO ORDERING MATERIALS & ERECTION
- ALL STEEL BEAMS TO BE SEATED ON 200X200X10 OR
110X350X10 STEEL BEARING PLATES

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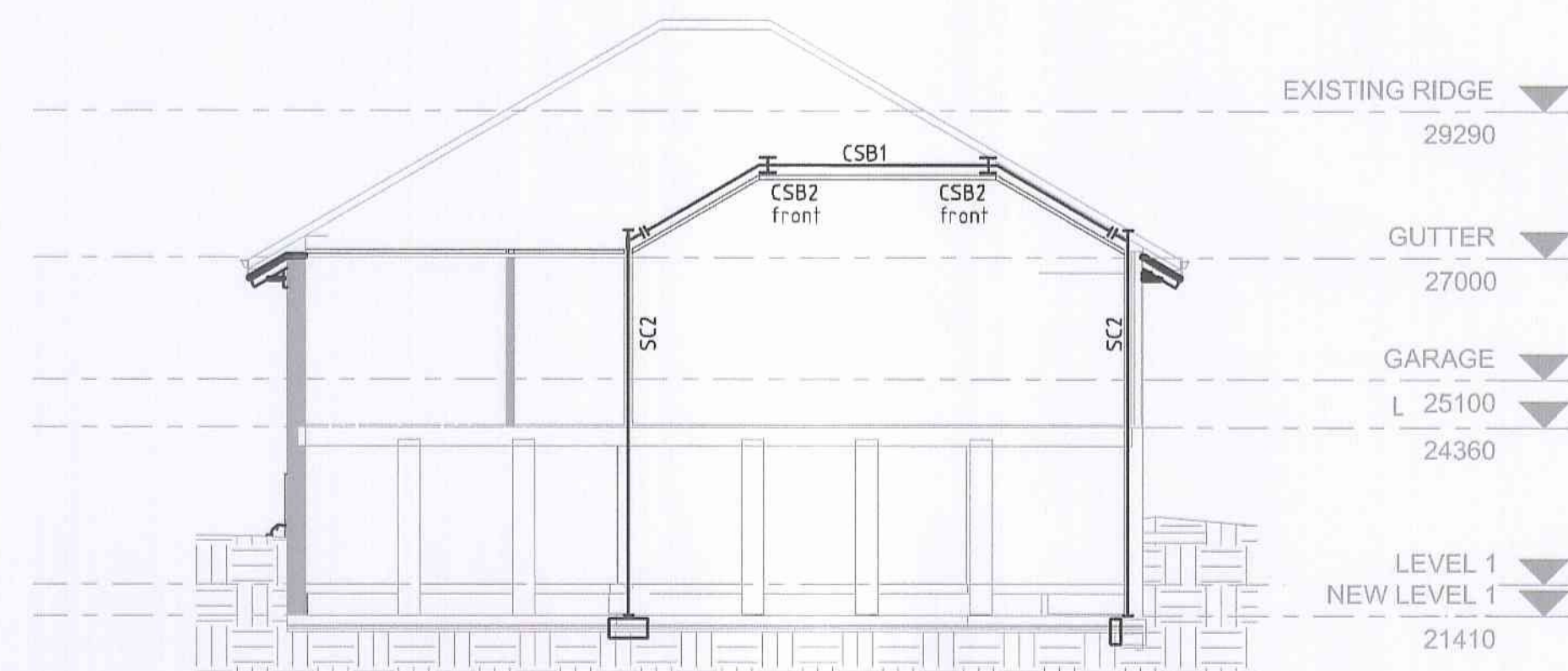
ENGINEERED TIMBER TRUSS NOTES:

- THESE NOTES ARE TO BE READ IN CONJUNCTION
WITH THE ARCHITECTURAL SPECIFICATION.
- THE DESIGN & FABRICATION OF ENGINEERED ROOF
TRUSSES SHALL BE COMMISSIONED TO AN APPROVED
TRUSS DESIGN MANUFACTURE FIRM.
- ALL TRUSS DESIGN'S SHALL BE IN ACCORDANCE WITH
AS 1170 & 1170, IN ADDITION TO THE ABOVE INFERRED
DEAD LOAD & UNIFORMLY DISTRIBUTED LIVE LOADS.
THE TRUSSES SHALL BE DESIGNED FOR:
i) REGION & WIND & IN TERRAIN CATEGORY 3 - ($V_p=4\text{m/sec}$)
ii) A CEILING DEAD LOAD OF 12kg/m²
iii) BRACE & ANCHOR TRUSSES TO TRUSS DESIGN REQUIREMENTS
iv) SOLAR WATER HEATER ON ROOF 1 kPa UDL BUT NOT
ON CANTILEVERS.
- NO DEFECTS IN THE TIMBER WILL BE ALLOWED IN
OVERHANGING CHORDS & AT CONNECTOR PLATES
TRUSSES SHALL BE ERECTED STRAIGHT & PLUMB TO
THE FOLLOWING TOLERANCES, THE OVERALL BOW OR
BOW IN ANY CHORD SHALL NOT EXCEED THE LESSER OF
L/200 OR 50mm, WHERE L IS THE CHORD LENGTH.
TRUSSES TO BE PLUMB TO WITHIN 10 HORIZONTALLY
FOR EVERY 1000 IN HEIGHT.
- NOMINAL ROOF BRACING TO BE CROSSED GALVANISED
32 X 1.2 BUILDING STRAP OR SPEEDBRACE NAILED AT ENDS
- TIMBER STRESS GRADE TO BE F5 MINIMUM.
- COPIES OF ROOF TRUSS DESIGN CALCULATIONS & DESIGN
TO BE SUBMITTED TO SUPERINTENDENT FOR APPROVAL.
FABRICATION SHALL NOT COMMENCE UNTIL ALL
APPROVALS HAVE BEEN OBTAINED.

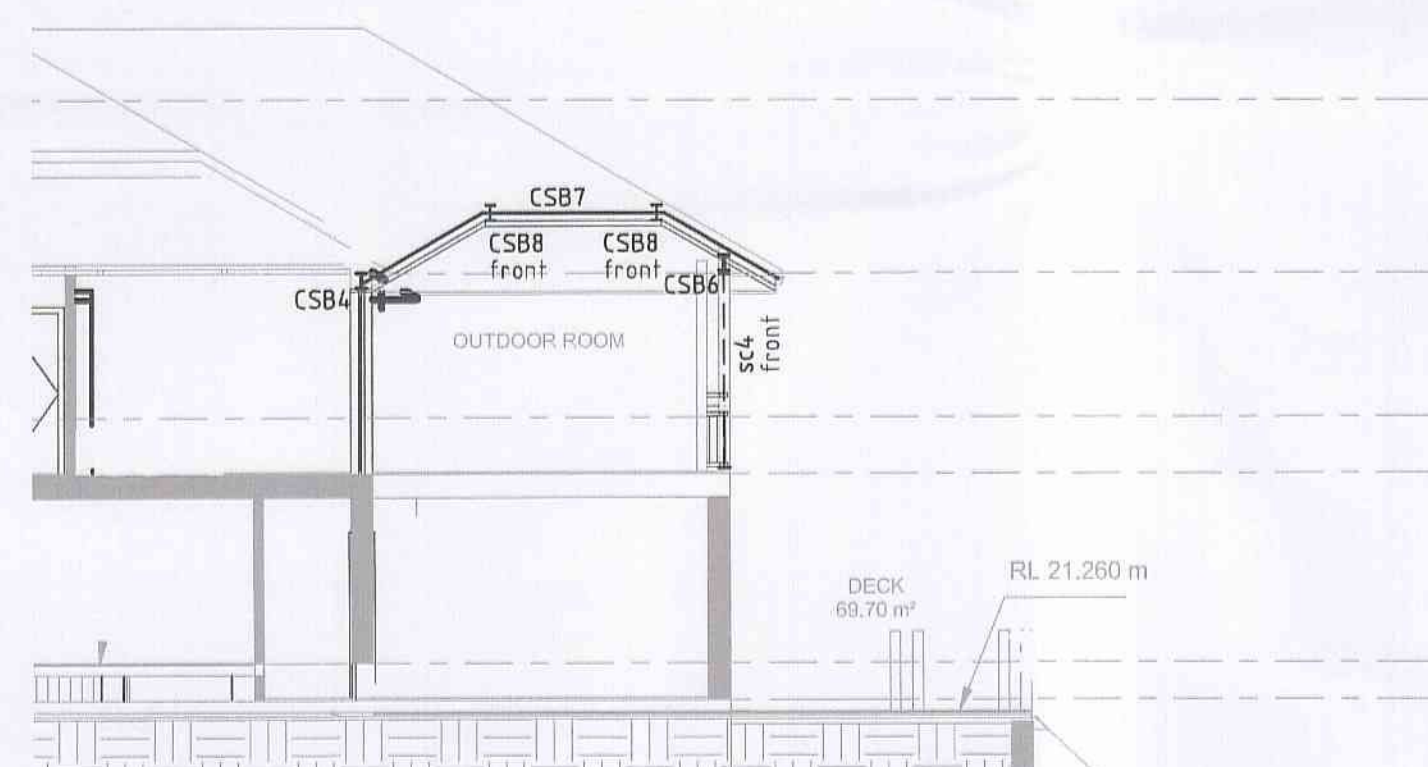
A	06.03.13	FOR TENDER & CONSTRUCTION CERTIFICATE
REV	DATE	DESCRIPTION
ARCH	Walter Barda Design architecture landscape interiors 2/04 13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com ABN: 48 072 136 513 Office: 02 9360 2340 Facsimile: 02 9360 2324	
PROJECT	ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107	
DRG	CEILING & ROOF FRAMING PLANS	
BEKKER paul bekker engineering design bureau pty limited suite 2/11 rangers road, neutral bay nsw 2089 abn 89 117 772 517 phone: (02) 9953 6244 fax: (02) 9953 6266 email: bekker@spin.net.au postal address: po box 591 northbridge, nsw 1560		
DESIGNED		
SCALE	DATE	DRG No.
1:100	JAN.-2013	62301 S06
		REV
		A



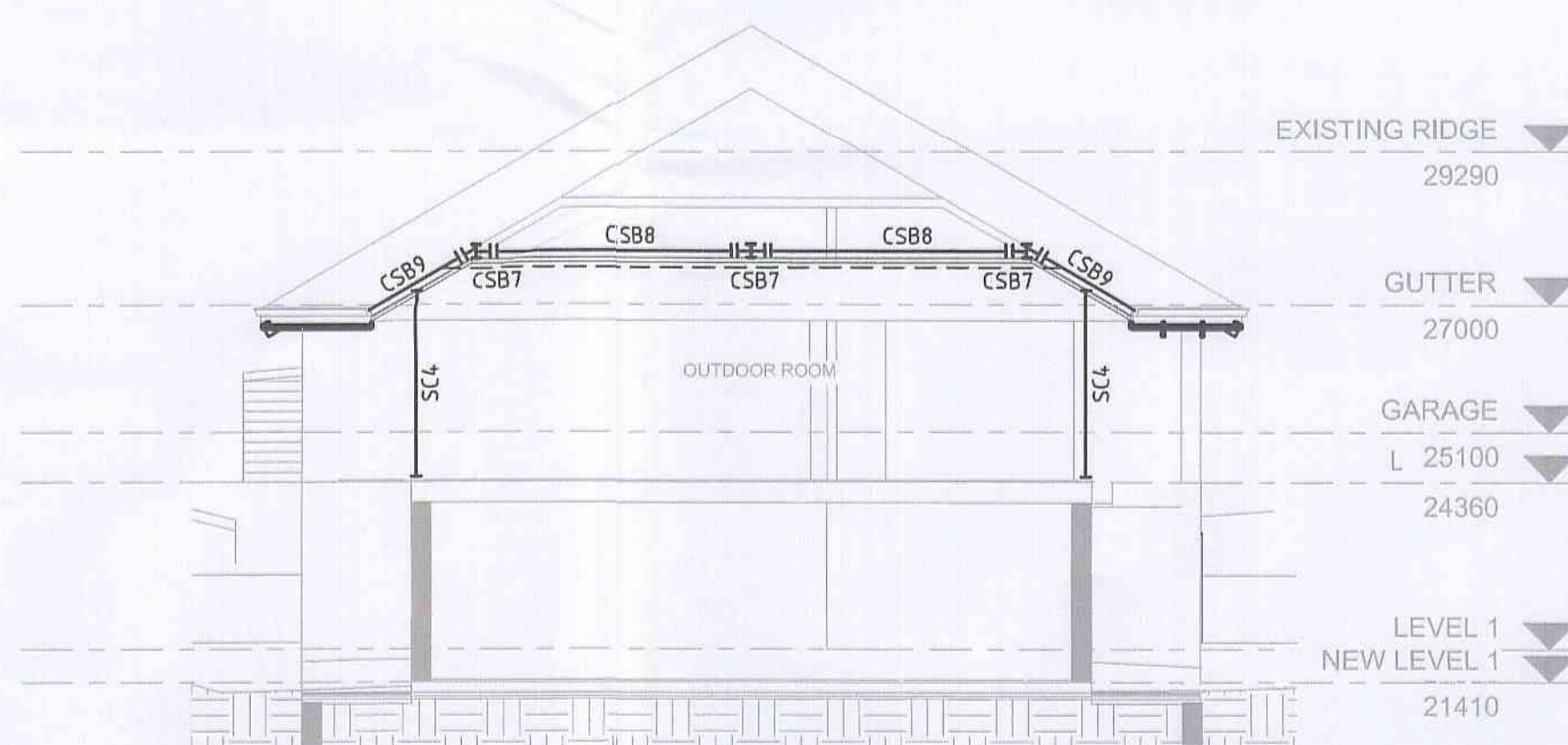
ELEVATION A
1:100 @ A1 S6



ELEVATION B
1:100 @ A1 S6



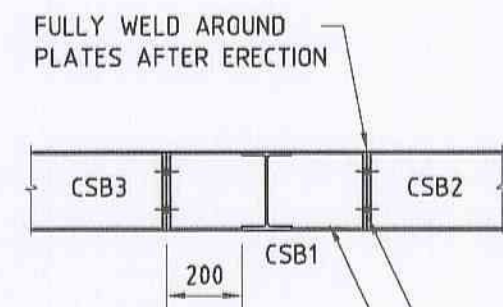
ELEVATION C
1:100 @ A1 S6



ELEVATION D
1:100 @ A1 S6

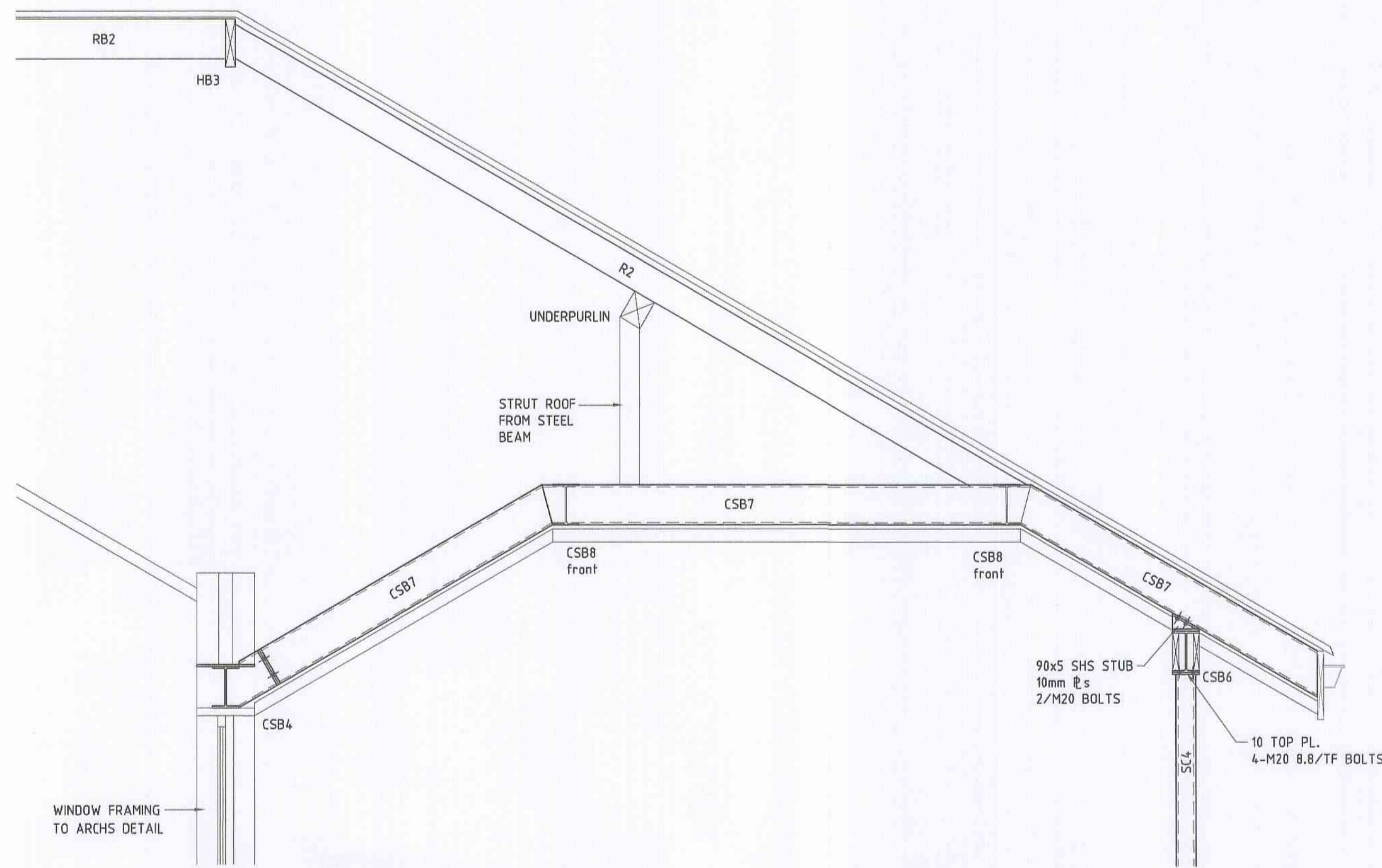
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REV	DATE	DESCRIPTION
ARCH	Walter Barda Design architecture landscape interiors 2/04 13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com ABN: 48 072 136 513 Office: 02 9360 2340 Facsimile: 02 9360 2324	
PROJECT	ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107	
DRG	ELEVATIONS	
BEKKER paul bekker engineering design buro pty limited suite 2/11 rangers road, neutral bay nsw 2089 abn 89 117 772 517 phone: (02) 9953 6244 fax: (02) 9953 6266 email: bekker@spin.net.au postal address: po box 591 northbridge, nsw 1585		 CONSULT AUSTRALIA MEMBER
DESIGNED		
SCALE	DATE	DRG No. REV
1:100	JAN. 2013	62301 S07 A

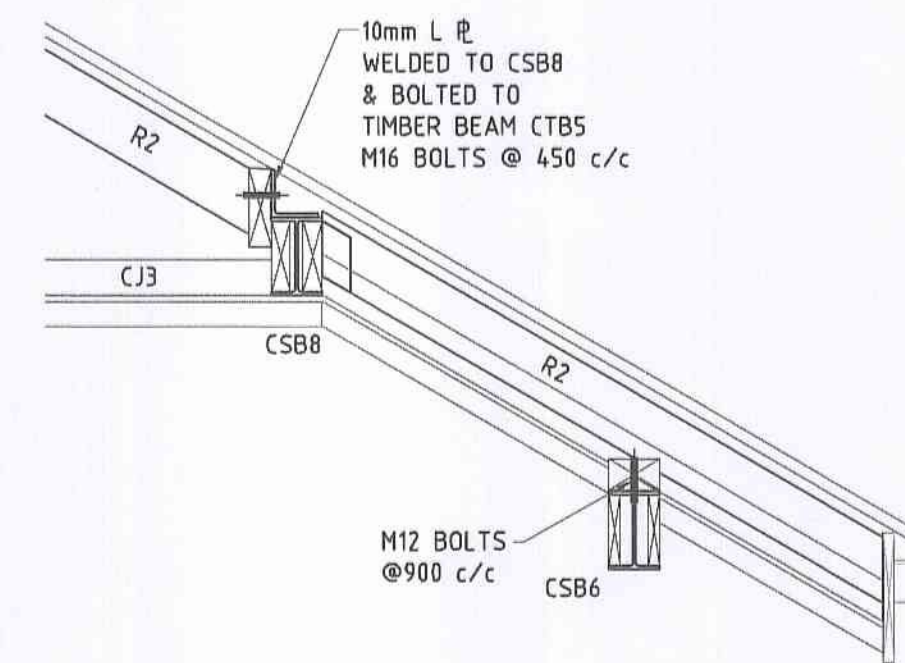


TYPICAL CONNECTION:
2-12 END PL.
4-M20 8.8/TF BOLTS.
EX. CSB2 STUB
WELDED TO CSB1

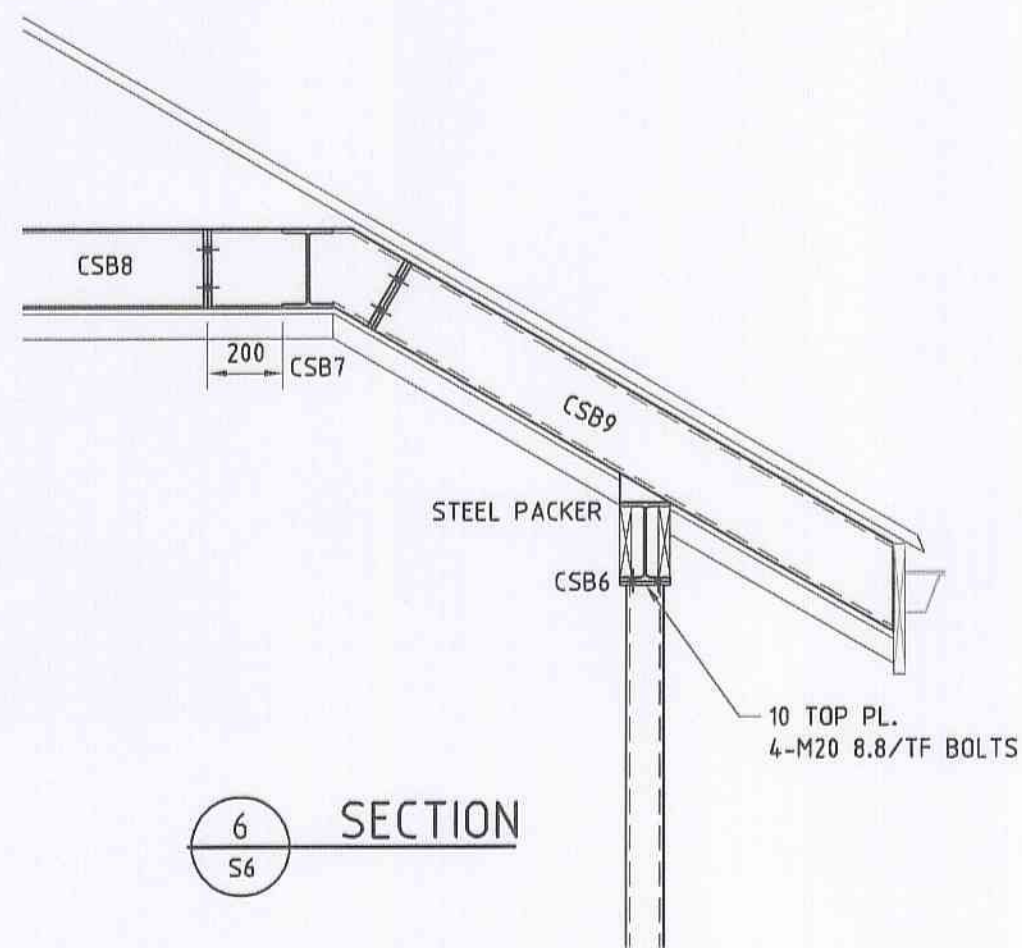
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S6



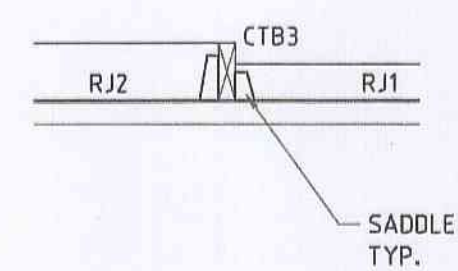
4 SECTION
S6



5 SECTION
S6

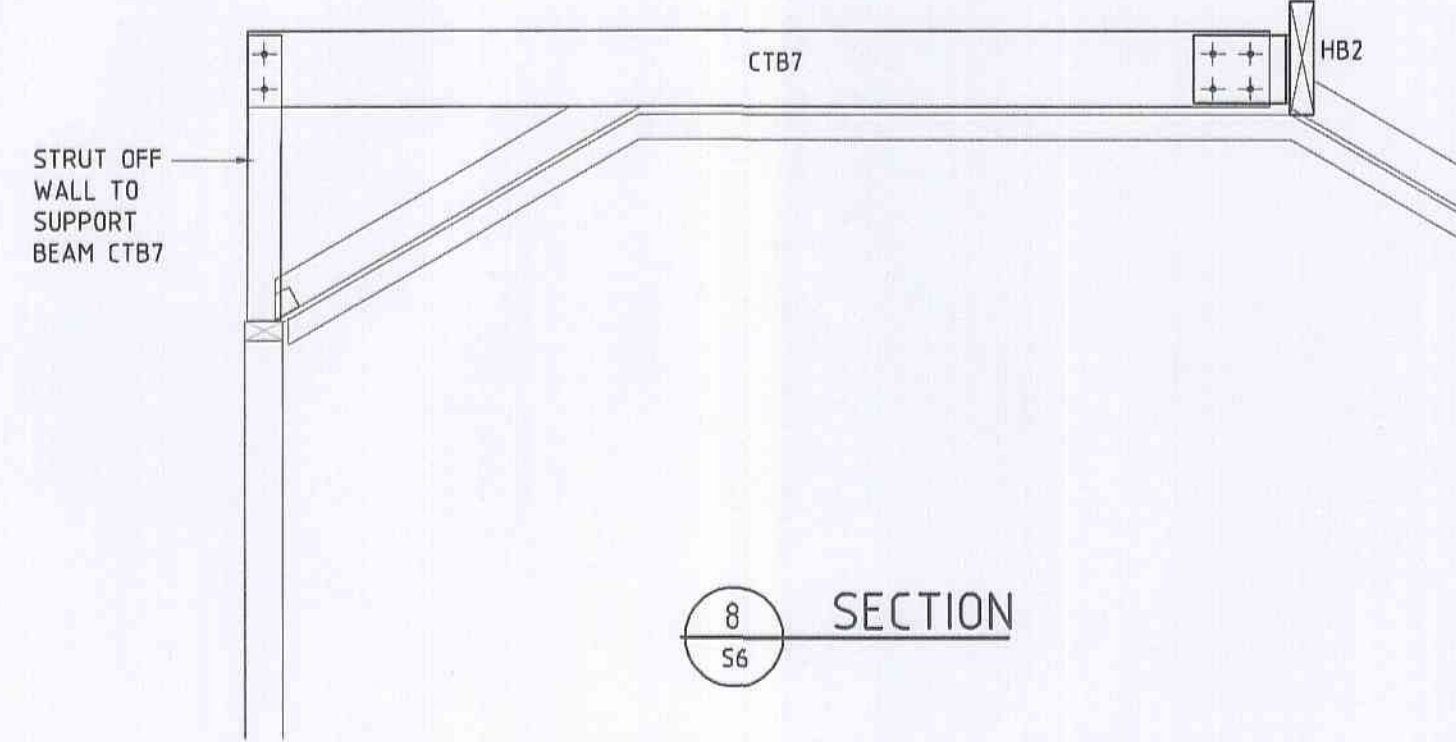
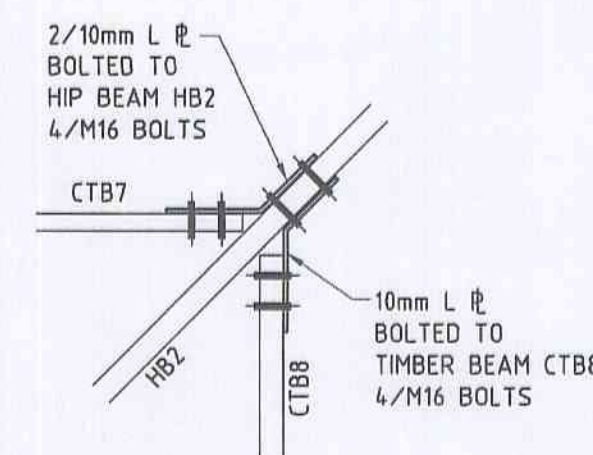


6 SECTION
S6



7 SECTION
S6

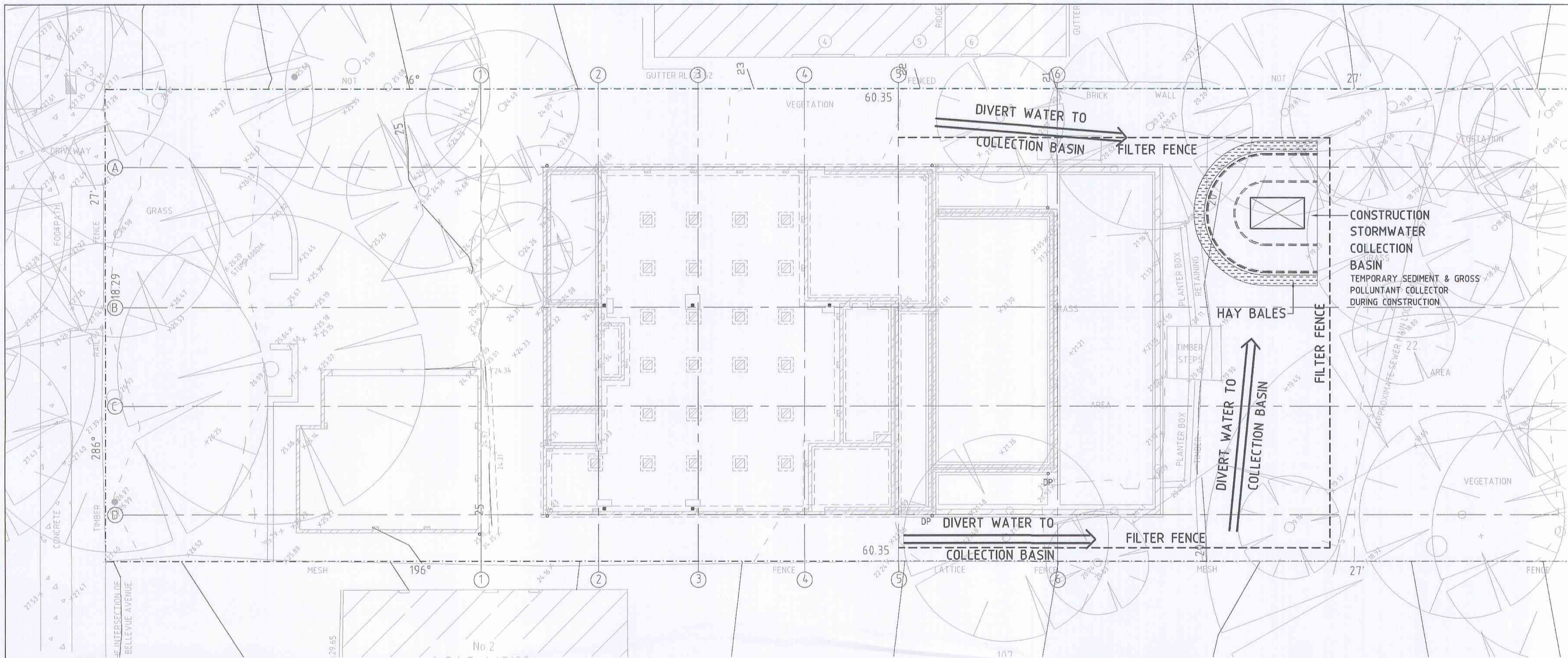
TIMBER FRAMING TO
BE BUILT IN ACCORDANCE
WITH AS1684 NATIONAL
TIMBER FRAMING CODE AND
ARCHITECTS DETAILS



8 SECTION
S6

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A	08.03.13	FOR TENDER & CONSTRUCTION CERTIFICATE
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ARCH Walter Barda Design architecture landscape interiors 2/04 13-15 Wentworth Avenue Sydney NSW 2000 www.walterbardadesign.com.au ABRN: 48 072 136 513 Office: 02 9360 2340 Facsimile: 02 9360 2324		
PROJECT ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107		
DRG CEILING & ROOF DETAILS SHEET 2		
BEKKER paul bekker engineering design buro pty limited suite 2/11 rangers road, neutral bay nsw 2089 cbn 89 117 772 517 phone: (02) 9953 6244 fax: (02) 9953 6266 email: bekker@spn.net.au postal address: po box 591 northbridge, nsw 1560		
DESIGNED		
SCALE 1:100	DATE JAN.-2013	DRG No. 62301 S09
		REV A



NOTE:

THIS IS A COMPILATION ENGINEERING AND SURVEY DRAWING DEPICTING STRUCTURAL ELEMENTS OVERLAYED ON AN EXISTING SITE SURVEY. SITE SURVEY PREPARED BY : RICHARD & LOFTUS P/L REF: 1309 DATE: 20/07/12 Ph - 9482 8756



SOIL & EROSION CONTROL PLAN

NOTES:

THE FOLLOWING SOIL & EROSION CONTROL PLAN IS A SUGGESTED PROCEDURE REQUIRED BY COUNCIL FOR D.A. SHOULD THE PLAN REQUIRE AMENDMENT DURING CONSTRUCTION, THE BUILDER SHALL AMEND THE PLAN & SEEK APPROVAL FROM COUNCIL'S COMPLIANCE OFFICER. THE BUILDER IS AT ALL TIMES REQUIRED TO CONTROL EROSION SEDIMENT & STORMWATER FLOWS TO THE SATISFACTION OF COUNCIL & IN ACCORDANCE WITH COUNCIL'S "SOIL & WATER MANAGEMENT FOR URBAN DEVELOPMENT".

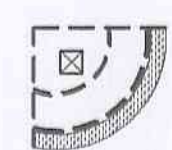
PROCEDURE

DURING BULK EARTH WORKS ON SITE CONSTRUCT STORMWATER COLLECTION BASIN. GRADE SITE TO COLLECTION BASINS. INSTALL SEDIMENT CONTROL PIT, ASSOCIATED HAY BALES AND FILTER FENCES WITH DISCHARGE LINE. DURING THE ENTIRE CONSTRUCTION PHASE ENSURE SILT IS CLEANED AWAY FROM SOAKAGE PIT AT REGULAR INTERVALS.

NOTES:

1. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER. ESPECIALLY CLEANING DEBRIS/SEDIMENT OFF FILTER FENCE.
2. MINIMISE DISTURBED AREAS WHERE POSSIBLE.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS & FOOTPATHS.
4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
5. EXTERNAL ROADS & FOOTPATHS ARE TO BE SWEEPED DAILY.

LEGEND



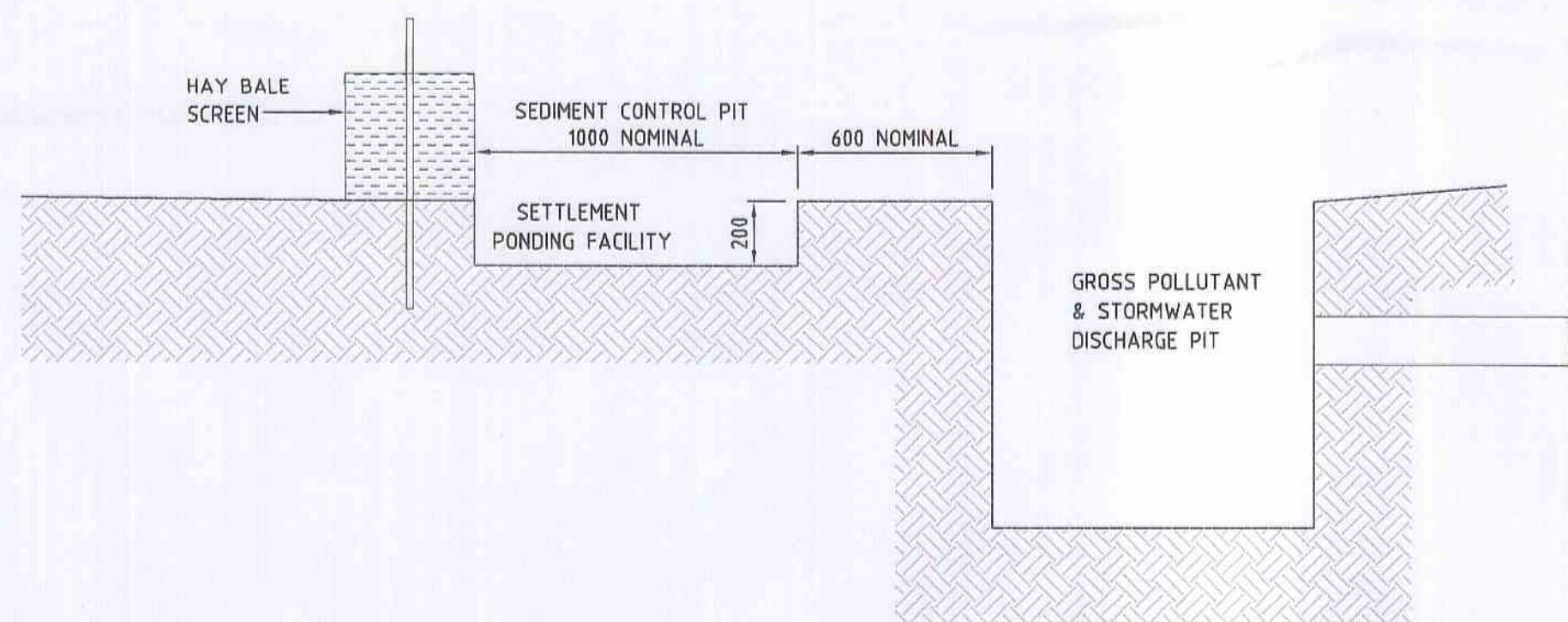
STORMWATER COLLECTION BASIN



STAKED HAY BALES



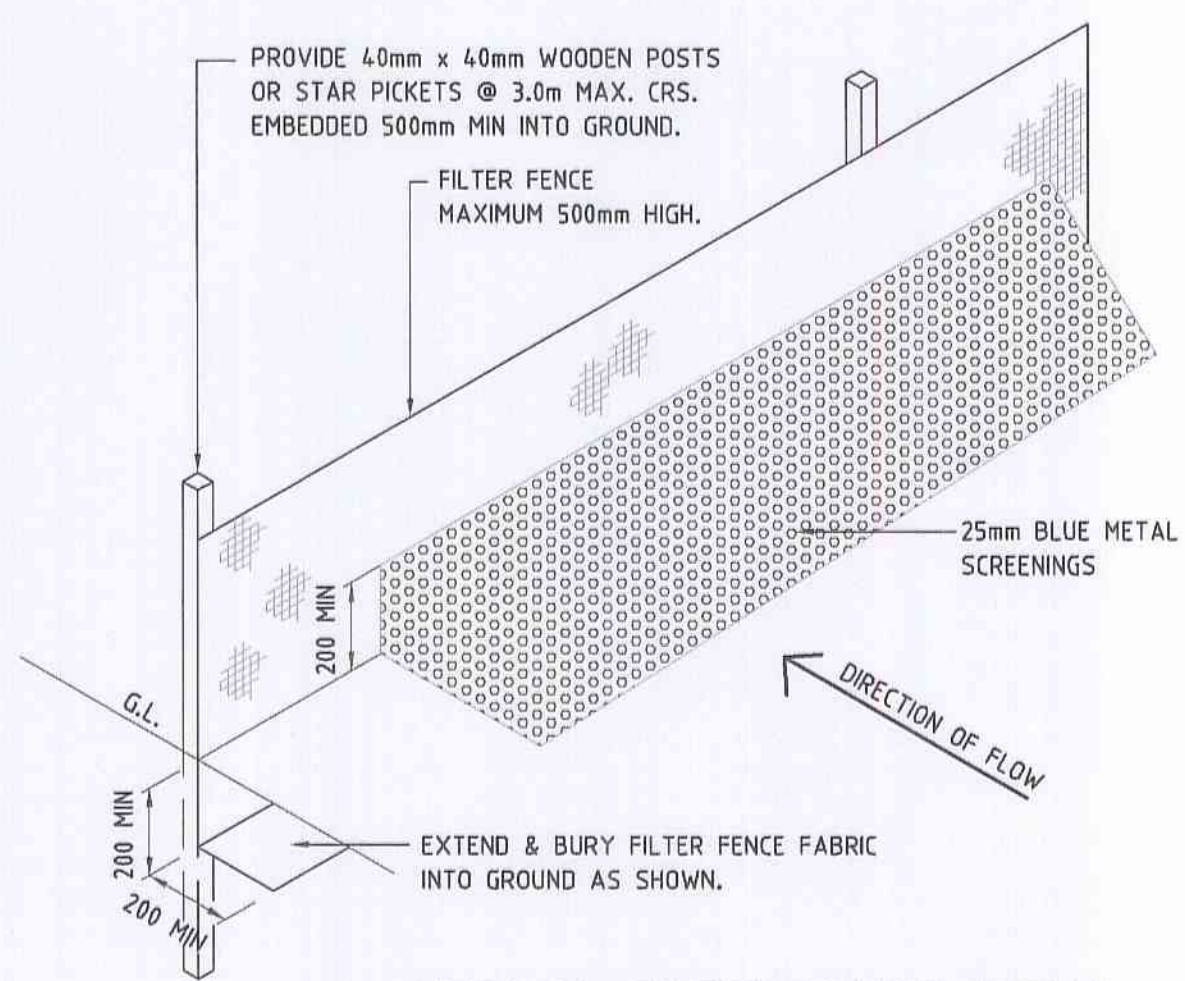
FILTER FENCE



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CONSTRUCTION STORMWATER COLLECTION BASIN

NTS



TYPICAL FILTER FENCE DETAIL

NTS

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PROJECT	ALTERATIONS & ADDITIONS 4 ELOUERA ROAD AVALON NSW 2107	
DRG	LOWER FOOTING & DRAINAGE PLAN BEKKER paul bekker engineering design buro pty limited suite 2/11 rangers road, neutral bay nsw 2089 phone: (02) 9953 6244 fax: (02) 9953 6246 postal address: po box 591 northbridge, nsw 1560 abn 89 117 772 517 email: bekker@spn.net.au 	
DESIGNED		
SCALE	DATE	DRG No.
1:100	JAN. 2013	62301 SE1
		REV
		A