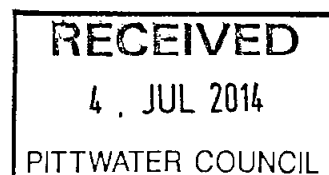


01 July, 2014.

Pittwater Council
P.O. Box 882
Mona Vale NSW 2103

Dear Sir /Madam

Re: Lodgement of CC2014-153 for DA No. N0248/11
Site address: No. 28 Woorarra Avenue, North Narrabeen.



Please find attached all required documentation relied upon to issue Construction Certificate and Notice of Commencement for the above development:

- Part 4A Lodgement Fee \$36.00 payable to Council.
- Copy of Home Owner's Warranty Insurance.
- Sydney Water approval
- Full set of council approved 'stamped' plans.
- 1 full set of Construction Certificate plans and specifications.
- 1 Structural Engineer's Plans & Certificate of Structural Adequacy
- Geotechnical Assessment Report
- Certificate showing the Engineering plans cover the stipulations set out in C2
- Stormwater Management Plans.
- Receipt for payment of Long Service Levy.
- Detail of Roofing material- type and colour.
- Schedule of finishes
- Form 2A & Form 2B of the Geotechnical Risk Management Policy for Pittwater
- 1 Basix Certificate

Yours faithfully

A handwritten signature in black ink, appearing to be "Craig Formosa".

Craig Formosa

\$36 REC: 362524 4/7/14.

03/07/14



CONSTRUCTION CERTIFICATE #2014-153 - Stage 1 Approved 01/07/14

Issued in accordance with the provisions of the Environmental & Assessment Act 1979 under Sections 109C(1)(b) and 109F

Date Application Received	26-06-14				
Council	Pittwater Council				
Development Consent No.	N0248/11	Date Approved	19-09-11		
Certifying Authority	Craig Formosa	Accredited Certifier	Craig Formosa - BPB0124		
Accreditation Body	Building Professionals Board	BCA in Force	BCA2014		
APPLICANT DETAILS					
Name	Rob Phipps	Ph No.	0417 556 621		
Address	28 Woorarra Avenue, North Narrabeen NSW 2101				
OWNER DETAILS					
Name	Rob Phipps				
Address	28 Woorarra Avenue, North Narrabeen NSW 2101				
DEVELOPMENT DETAILS					
Subject Land	28 Woorarra Avenue, North Narrabeen NSW 2101	Lot No.	25	DP	23429
Description of Development	Stage 1 - Alterations & additions to the existing dwelling (not including Kitchen extension & external stair)				
Class of Building	1a, 10a	Value of Work	\$240,000.00		
BUILDER DETAILS					
Name	Shane Doherty				
Address	15 Grasmere Crescent, Wheeler Heights NSW 2097				
Contact Number	0423 580 442	Licence No.	247869C		
APPROVED PLANS & DOCUMENTS					
Plans Prepared By	Sally Gardner Design & Draft				
Drawing Numbers	A1 – A7	Dated	09-06-11		
Engineer Details Prepared By	Waddington Consulting Pty Ltd - structural	Sally Gardner Design & Draft - hydraulic			
Drawing Numbers	S0.00, S0.01, S1.00, S1.01, S2.00, S3.00 - structural	S7 - hydraulic	Dated	18-06-14	09-06-11, 02/07/14
Basix Certificate No.	A115956	Dated	05-07-11		
CERTIFICATION					
I, Craig Formosa, as the certifying authority am satisfied that; (a) The requirements of the regulations referred to in s81A (5) have been complied with. That is, work completed in accordance with the documentation accompanying the application for this certificate (with such modifications verified by the certifying authority as may be shown on that documentation) will comply with the requirements of the Regulation as referred to in section 81A (5) of the Act, and b) Long Service Levy has been paid where required under s34 of the Building & Construction Industry Long Service Payments Act 1986.					
Signed:		Date: 01/07/14			



Waddington Consulting Pty Ltd

ACN 130 522 851
Structural and Civil Engineering
Suite 506, Level 5
22 Central Ave, Manly NSW
P.O. Box 1044
Manly NSW 1655

2 July 2014

P (02) 9976 0070
F (02) 9976 0095

Mr Craig Formosa
Form Building Certifiers
by email: <craig@formbc.com>

Dear Craig,

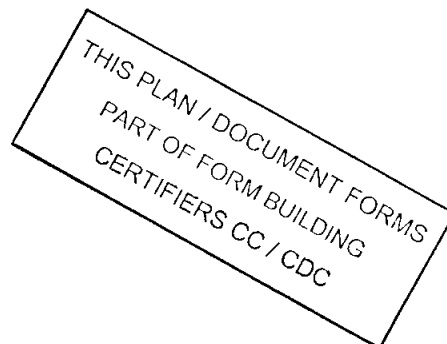
**Subject: Proposed Alterations and Additions – 28 Woorarra Ave, North Narrabeen
Stormwater Management Plan**

The *Stormwater Concept Plan* (drawing S7 by Sally Gardner Design and Draft) has been prepared to satisfy the requirements of Pittwater Council's Development Control Plan. Further details will be provided during construction to ensure full compliance with the DCP, required standards and the BCA.

Please do not hesitate to contact me if you have any queries regarding this design.

Yours sincerely,

Kate Waddington
Director
Waddington Consulting Pty Ltd





JOB;

28 WOORARRA AVE,

NORTH NARRABEEN

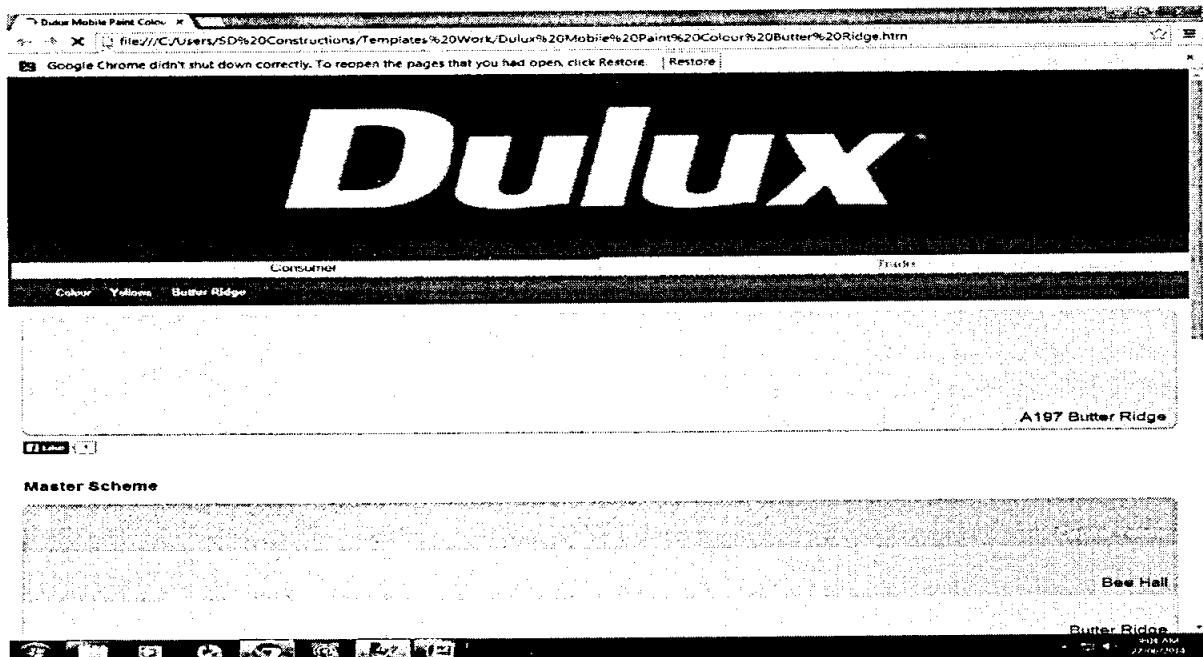
THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC

SCHEDULE OF FINISHES FOR EXTERNAL

1) BOTTOM FLOOR TO HAVE SANDSTONE STACK STONE BLOCKS

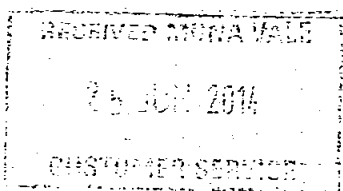
2) TOP FLOOR WEATHER BOARDS, PAINTED IN DULUX

WEATHERSHEILD COLOUR BUTTER RIDGE



Shane Doherty Phone: 0423580442

Email: shane.doherty@live.com.au ABN: 36 144 642 437 Licence No: 247869c



LEVY PAYMENT FORM
FORM NO. _____
OFFICE USE ONLY

See reverse of form for instructions

PLEASE PRINT ALL DETAILS USING CAPITALS

Surname (if person) or Company/Organisation name **PHIPPS**
Given names (if person) **ROBERT JAMES**
POSTAL ADDRESS No. and street or PO Box **28 WOOLBARRA AV**
NORTH NARRABEEN
State **NSW** Postcode **2101** Bus. hours phone **0417586621**

Number and street **28 WOOLBARRA AV**
Town/suburb **NORTH NARRABEEN**
State **NSW** Postcode **2101**

Estimated start date **23** M **06** Y **2014** Estimated finish date **20** M **10** Y **2014**

Local Council Area **PITTWATER**
¹ DA/CC/CDC No. **N0248/11**

Estimated value of work (see note on back) \$ **240,000** Levy payable \$ **840**

¹ If you have provided a CC above, please provide DA number here

Name of Officer/Private Certifier **FORM BUILDING** Business hours phone **80219313**

Department/Authority

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

Levy payable \$

Contact person (Print) Phone number

Contact person (Signature) Date D M Y

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

Name **Robert Phipps** Signature **[Signature]** Date **16** M **06** Y **2014**

Exemption Approval Certificate No.

COST OF WORKS ~~\$140,000~~ **\$240,000**

\$840.00
REC: 362244
25/6/2014

Patwari Council

Tax Invoice Official Receipt

DATE 01/03/2014

05/06/2014 Receipt No: 002241

TO: ROBERT THOMPSON
20 W. PARKER AVENUE
NORTH BIRMINGHAM, ALA 35211

THIS FLYER DOCUMENT IS
PART OF THE
CERTIFIERS CO. CO.

Apply	Reference	Amount
Electricity		
Electricity 1st		240.00
Electricity 2nd		240.00
Transaction Total:		\$480.00
Includes GST 10%		\$48.00

Amounts Tendered	
Cash	20.00
Cheque	20.00
Credit Card	20.00
Money Order	20.00
Agency	20.00
Travel	20.00
Round trip	20.00
Change	20.00
Total	\$240.00

Printed 05/06/2014 1:24:00PM

Colorbond "Custom-Orb" roof sheeting fixed to framing or trusses in accordance with the manufacturers specifications. Colour to match existing roof or as selected by owners. Reflective sarking to be installed under sheeting. Provide all ridge, barge and other fittings as required to complete the roof and leave fully cleaned

Provide Colorbond Standard Quad Gutters to all new eaves. Set with sufficient fall to all downpipes & secure with brackets max 1200mm apart.

Timber Fascia Boards shall be of seasoned solid timber primed or stained all round prior to fixing and not less than 19mm finished thickness for 600mm maximum centres.

Provide Colorbond downpipes where required. Connect head to gutter & foot to drainage system with brackets at 2700mm max. spacing. with a minimum of 2 brackets per downpipe. All new downpipes are to be connected to the existing stormwater system that discharges to an existing Council stormwater collection system.

DP.23429
1025.5 m²

This is the plan/spec. referred to in Form Building Certifiers Certificate
Certificate No. 2014-153
P10 Nos. A1-A7
01/07/14
Craig Formosa BPB0124 DATED

SMALL TREES AND SHRUBS ABOUT 2m HIGH
28.955

Colorbond 'Klip-Lok' Roof Sheeting.
Fixed to Rafters in Accordance with Manufacturers Specifications.
Medium colour Solar Absorbance Range (0.475-0.7).
Reflective sarking to be installed under sheeting.
Provide all ridge, barge and other fittings as required to complete the roof and leave fully cleaned

Existing roof structure to remain
Replace roof sheeting only

REMOVE ALL EXISTING ROOF SHEETING AND REPLACE WITH NEW CUSTOM-ORB SHEETING TO BE READ IN COLOUR AS SELECTED BY OWNERS. EXISTING ROOF STRUCTURE TO BE REPAIRED TO THE CONDITIONS OF DEVELOPMENT CONSENT

APPROVED DEVELOPMENT CONSENT PLANS
PITWATER COUNCIL

DP.23429
24

Identify that work completed in accordance with these plans and specifications will comply with the regulations referred to in Section 81A(5) of the Environment Planning and Assessment Act 1979

PROPOSED ALTERATIONS & ADDITIONS - 28 WOORARRA AVENUE, NTH. NARRABEEN

47 Towradgi Street, Narrabeen NSW, 2099, Australia. ABN 17 731 732 195 Mobile : 0414 731 685 e-mail: sally.a.designanddraft.com.au		Client Yngve & Nicole AMUNDSEN		Drawing Title ROOF PLAN		Scale 1:100 @ A3		Date 9 June 2011		Drawing Number A1	
SALLY GARDNER DESIGN AND DRAFT		PITWATER COUNCIL APPROVAL									

SYDNEY WATER
APPROVED

1. Position of structure in relation to Sydney Water's assets is satisfactory.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licensed plumber/drainlayer.
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. Gutters, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Balcony, Verandah, Floor or other cover unless otherwise approved by Sydney Water.
6. Property No. 3465987

Reece, Mona Vale
Quick Check Agent on behalf of
SYDNEY WATER

Existing window to be replaced with new powder coated aluminium louvered window to existing opening

CLOTHES DRYING AREA PARTIALLY UNDER STRUCTURE OVER

2000 L Rainwater

Square timber posts to Engineers details.

Raise floor level to Laundry and Workshop to match existing floor level in adjacent Entry area.

CONCRETE

110°

Demolish existing concrete steps & remove debris from site. Provide new step as indicated

Provide lower landing & security gate at base of new stairs to owners selection.

Not Part of Stage 1 Construction

25
DP.23429
1025.5 m²

Enclose under new timber stairs with brickwork to owners selection.

INSTALL A HARDWIRED SMOKE ALARM IN ACCORDANCE WITH AS 3786

Sub Floor Storage

Workshop

Laundry

Shower

W43

W2

W1

W2

W1

W2

W1

W2

W1

W2

W1

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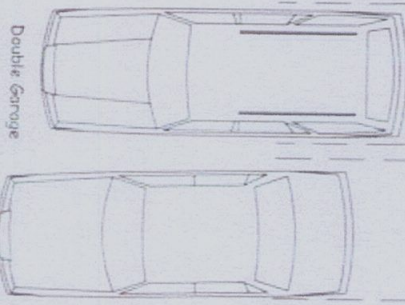
W2

W1

W2

W1

W2



Double Garage

Storage (concrete) 70.79

4500 L OSD TANK

2000 L Rainwater

Step

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4500 L OSD TANK

2000 L Rainwater

Proposed Ridge Level RL 27.315
Existing Ridge Level RL 26.74

New 1.0m high balustrade
as selected by owners to
BCA requirements

Existing Upper Floor Level RL 23.28

Existing Lower Floor Level RL 20.79

Proposed Ridge Level RL 27.315
Existing Ridge Level RL 26.74

Existing Upper Floor Level RL 23.28

Existing Lower Floor Level RL 20.79

New weatherboard cladding
as selected by owners.

Remove existing windows &
replace with new windows.
(Refer schedule drg. N2)

SOUTH - WEST ELEVATION

NORTH - EAST ELEVATION

Extent of encroachment
over building envelope
this facade.

Square timber posts to
Engineers details.

Powder coated aluminium
framed windows & doors to
owners selection, (refer
schedule on Drg. N2).

THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS COCCDC

Colorbond 'Klip-Lok'
Roof Sheeting.

Colorbond 'custom orb'
Roof Sheeting.

Replace all existing roof
sheeting to match new
works, existing roof
structure to be retained.

Install new automatic
tilt garage door as
selected by owners

New brickwork as
selected by owners

Natural Ground Line

Boundary

Building Envelope

Natural Ground Line

Boundary

Boundary

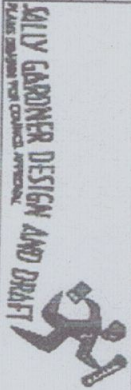
2000L Rainwater tank

2000L Rainwater tank

NOTE: THESE PLANS MUST BE READ IN
CONJUNCTION WITH THE
DEVELOPMENT APPLICATION
NOTE: ALL EXISTING CLADDING TO BE
REMOVED AND REPLACED WITH
WEATHERBOARDS OR SIMILAR
CLADDING AS SELECTED BY OWNERS.

PROPOSED ALTERATIONS & ADDITIONS - 28 WOORARRA AVENUE, NTH. NARRABEEN

Task	Architectural



47 Towradgi Street, Narrabeen
NSW 2099, Australia.
ABN 17 731 732 195
Mobile : 0414 731 685
e-mail: sally@designanddraft.com.au

Client
Yngve & Nicole
AMUNDSEN

Drawing Title
ELEVATIONS
SHEET 1 of 2

Scale
1:100 @ A3
Date
9 June 2011
Drawing Number
3-0711
A4

Proposed Ridge Level RL 27.315
Existing Ridge Level RL 26.74

Existing Upper Floor Level RL 23.28

Existing Lower Floor Level RL 20.79

To all Wardrobes, allow for providing one 1800mm edge stripped particleboard shelf 450mm wide, supported on 50 x 25mm battens to sides and back, along with a similar batten under front edge. Provide 20mm dia. hanging rail with fittings and supports to underside of shelf

To Linen Cupboards: provide five 18mm edge stripped particleboard shelves x 450 wide, supported on 50 x 25 battens to both sides and back edge along with a similar batten under front edge.

Proposed Ridge Level RL 27.315
Existing Ridge Level RL 26.74

Existing Upper Floor Level RL 23.28

Existing Lower Floor Level RL 20.79

SMOKE DETECTORS
Provide mains powered smoke & fire detection devices to comply with Australian Standards code requirements.

INSULATION
Install insulation in accordance with Basix Certificate.

Gypsumboard lining to timber framed ceilings.

Polished T & G Cyprus Pine Strip Flooring, fixed & finished to manufacturers specifications

New Colorbond "custom orb" roof sheeting roof pitch to match existing.

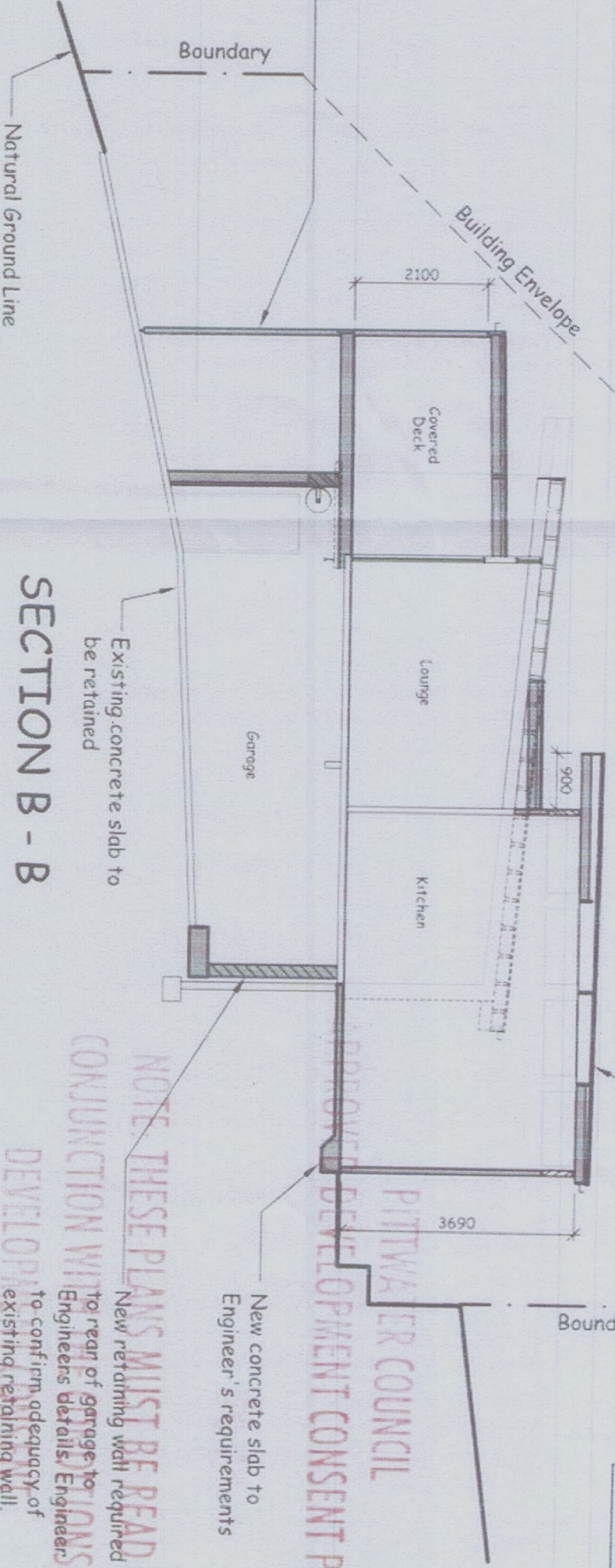
4.5mm thk. "Hardiflex" to eaves lining or equivalent, fixed to manufacturers instructions.

New strip or pad footings to Engineer's details

New Colorbond "klip-lok" roof sheeting roof pitch to 1 deg.

SECTION A - A

Square timber posts to Engineers details.



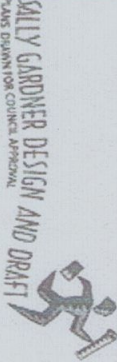
SECTION B - B

Existing concrete slab to be retained

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT PLANS

THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CO/CD/C

PROPOSED ALTERATIONS & ADDITIONS - 28 WOORARRA AVENUE, NTH. NARRABEEN



47 Lowradai Street, Narrabeen
NSW, 2099, Australia.
ABN 17 751 732 195
Mobile : 0414 731 685
e-mail: sally@designanddraft.com.au

Yngve & Nicole
AMUNDSEN

SECTIONS
SHEET 1 of 2

Scale: 1:100 @ A3
Date: 9 June 2011
Drawing Number: A6
Page: -

If a member which provides structural support to the work is subject to attack by subterranean termites, then provide protection to the new work by 1 or more of the means allowed for under AS 3660.1

All new Internal timber framed walls to be provided with gypsumboard lining to all general areas and 'Hardies' Villaboard or similar to all 'wet' areas. Fixed & Finished in accordance with manufacturers specifications.

4.5mm thk. "Hardiflex" to eaves lining or equivalent, fixed to manufacturers instructions.

Boundary

Provide new reinforced concrete slab to Engineers details under new addition

- New Colorbond "custom orb" roof sheeting roof pitch to match existing

New retaining wall required to rear of storage room to Engineers details.

Taps: Must have a flow rate no greater than 9 litres per minute or a minimum 3 star water rating.

Toilets: Must have a flow rate no greater than 4 litres per average flush or a minimum 3 star water rating.

Showerheads: Must have a flow rate no greater than 9 litres per minute or a 3 star rating.

Install aerators on bathroom hand basins & kitchen sinks.

Wet areas: shall be adequately flashed to ensure no water penetration to adjoining construction. Shower recesses shall be waterproofed with an appropriate flexible epoxy coating to the whole of the shower floor area. All wall junctions in the shower area shall be flashed to a height of at least 1800mm.

Allow for separate taps in location indicated for the washing machine and keep separate to those for the laundry tub.

Tile Fixing
Floors: Provide tiles as selected to all W.C., Bathroom, laundry and other wet areas indicated, with falls where required.
Walls: Provide to all W.C., Bathroom, laundry and other wet areas indicated as follows :-
1500mm high tiled skirting generally
2100mm high to all bathrooms and ensuites
450mm high splashbacks over tubs and vanities

Sanitary Plumbing: Provide & connect all new & relocated fittings indicated to drainage system through wastes & traps as required by the Authority.

Water Service: Extend from existing service with copper pipe to allow new & relocated fittings & hose cocks as indicated on plan & terminate with pressure cocks all to Authorities requirements.

Hotwater: Provide copper water service which is fully lagged to all new & existing fittings as required.

PAINTING

All paints or other coatings shall be of the best quality materials & of approved manufacture. All priming materials shall be of an approved brand and compatible to the finishing coats to be applied over them. External joinery intended to be painted, shall be primed on all faces at the place of assembly. Colours to be chosen by Owners. Where new or altered works adjoin existing painted surfaces, allow for repainting existing surfaces to provide uniform appearances. Only ZERO-VOC or LOW-VOC paints and primers are to be used.

Sustainable timbers will be used in preference to rainforest or old growth timbers. Recycled or second hand timbers are to be sourced and used in preference to plantation timbers if suitable and available.

SALLY GARDNER DESIGN AND DRAFT
PLANS DRAFTS FOR COUNCIL APPROVAL

47 Towradgi Street Narrabeena
NSW 2099, Australia
ABN 17 751 732 195
Mobile: 0414 731 685
e-mail: sally@designanddraft.com.au

Client
Yngve & Nicole
AMUNDSEN

Drawing title

SECTIONS
SHEET 2 of 2

North	South
1:100 @ A3	
Draw	
9 June 2011	

P.O. Number		3-0711
Invoice Number		A7
Qty.		

THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC



Home Warranty Insurance Fund

calliden
group

NSWBIBHWI/177212-PermitAuthority

11/06/2014

Shane Doherty Constructions Pty Ltd trading as Shane Doherty
Constructions Pty Ltd
15 Grasmere Crescent
WHEELER HEIGHTS NSW 2097

Calliden Insurance Ltd
ABN 47 004 125 268 AFS Licence 234438
Level 9, 11-33 Exhibition Street
MELBOURNE VIC 3000
Phone: (03) 9637 1300 FAX: 1300 662 215

Certificate of Insurance RESIDENTIAL BUILDING WORK BY CONTRACTORS

A contract of insurance complying with sections 92 and 96A of the Home Building Act 1989 has been issued by **Calliden Insurance Limited** (ABN 47 004 125 268) (AFSL 234438) as agent for and on behalf of the NSW Self Insurance Corporation (SICorp) (ABN 97 369 689 650) who is responsible for management of the Home Warranty Insurance Fund.

In respect of: Structural Alterations/Additions
At: 28 Woorarra Avenue
NORTH NARRABEEN NSW 2101
Carried out by: Shane Doherty Constructions Pty Ltd trading as Shane Doherty Constructions Pty Ltd
Licence Number: 247869C
ABN: 36 144 642 437
For: Robert James Phipps
In the amount of: \$240,000.00

Subject to the Act and the Home Building Regulation 2004 and the conditions of the insurance contract, cover will be provided to:

- a beneficiary described in the contract and successors in title to the beneficiary,
- OR
- the immediate successor in title to the contractor or developer who did the work and subsequent successors in title.

Authorisation: Signed by Calliden Insurance Ltd (ABN 47 004 125 268) (AFSL 234438) as agent for and on behalf of the NSW Self Insurance Corporation (SICorp) (ABN 97 369 689 650)

Issued on the 11th day of June, 2014.

NOTICE: To download a copy of your insurance policy wording visit <http://www.policywording.com.au>.

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NOTE.

- Approved means by the 'The Relevant Local Authority' or 'Council'.
- The Owner will directly pay the fees associated with the following:
 - building approval from council, footpath and kerb deposits with the local council, insurance fee to Building Services Corporation, Long Service Leave levy fee and approval fee by water and sewerage authority.
 - All other fees are to be paid by the builder. The amount of any local authority deposits which are forfeited due to damage or other cause will be deducted from the payments due to the builder.
- The Builder is to provide at his/her own expense adequate Public Risk Insurance and arrange indemnification under the Workers Compensation Act. Works insurance to be as stated in the contract conditions.
- All tenderers are to visit the site to satisfy themselves as to the nature and extent of the Works, facilities available and difficulties entailed in the works as Variations will not be allowed due to work arising owing to neglect of this clause.
- All work and materials to comply with the current Australian Standards at the time of commencement where applicable.
- These drawings shall be read in conjunction with all structural and other consultants drawings and specifications and with any such written instructions as may be issued during the course of the contract.
- Set out dimensions shown on this drawing shall be verified by the builder on site before commencement of any work. Dimensions shall not be obtained by scaling the drawings. Use only figured dimensions. All dimensions are in millimetres.
- The Builder is to ensure all construction, levels and other items comply with the conditions of the Building Approval.
- The Builder is to comply with all Ordinances, Local Authority regulations and the requirements of all Services Supply Authorities having jurisdiction over the works.
- All new downpipes are to be connected to the existing Stormwater system that discharges to an existing Council Stormwater system.
- All Power and Stormwater outlet locations shall be determined on site by the Owner.
- Any detailing in addition to what is supplied shall be resolved between the Owner and the Builder to the Owner's approval, except for any structural details or design which is to be supplied by the Engineer.
- All timber sizes and concrete details to be confirmed by the builder prior to commencement of any work.
- Any work indicated on the plans but not specified, and any item not shown on the plan which is obviously necessary as part of proper construction and/or finish is to be considered as shown and specified, and is to be done as part of the contract.
- Variations will not be permitted without the written consent of the Owner.
- The Builder shall provide sediment and siltation control measures as required by council and maintain them throughout the duration of the works.
- A legible copy of the plans bearing approval stamps must be maintained on the job at all times. Hours of construction shall be restricted to the times as required by the Building Approval.
- The Builder is to arrange for all inspections required by the authorities and lending institutions to their requirements.
- The Builder is to obtain approval for interruptions to existing services and minimise the duration and number of interruptions. Any interruptions with existing services and equipment to be to by appropriately skilled tradesmen.
- The Builder shall restore, reinstaate or replace any damage caused to existing structures or landscaping by construction work or workmen.
- Provide protection to existing trees to remain as required by Approval Conditions.

BASIX INSULATION SCHEDULE

Construction	Additional insulation required (R-value)	Other specifications
concrete slab on ground floor.	nil	
suspended floor with open subfloor: framed (R0.7).	R0.8 (down) (or R1.50 including construction)	
external wall: framed (weatherboard, fibre, metal clad) (R0.40)	R1.30 (or R1.70 including construction)	
roled ceiling, pitched/skillion roof: framed	ceiling: R3.00 (up), roof: foil/sarking	medium (solar absorbance 0.475 - 0.70)

COLOUR SCHEDULE



Colour classification in accordance with
NSW Basix (Medium - solar absorbance = 0.475 - 0.70)
"Windspray" - Colorbond roof sheeting.

DRAWING SCHEDULE

Title Sheet

- N1. Notes and Schedules
- N2. Window & Door Schedule
- E1. Existing Upper Floor Plan
- E2. Existing Lower Floor Plan
- A1. Roof Plan
- A2. Proposed Upper Floor Plan
- A3. Proposed Lower Floor Plan
- A4. Elevations Sheet 1 of 2
- A5. Elevations Sheet 2 of 2
- A6. Sections
- S1. Site Analysis
- S2. Site Plan and Calculations
- S3. Site Management Control Plan
- S4. Shadow Diagram at 9am
- S5. Shadow Diagram at 12 noon
- S6. Shadow Diagram at 3pm
- S7. Stormwater Concept Plan

LIGHTING : Basix requirements
A minimum of 40% of new or altered light fixtures must be fitted with fluorescent, compact fluorescent or light-emitting diode (LED) lamps.

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PROPOSED ALTERATIONS & ADDITIONS - 28 WOORARRA AVENUE, NTH. NARRABEEN

47 Towradgi Street, Narrabeen NSW 22099, Australia ABN 17 731 732 195 Mobile : 0414 731 685 e-mail: sally@designdraft.com.au		Client	Drawing Title	North	Scale	Job Number	Ref.
Yngve & Nicole AMUNDSEN			NOTES & SCHEDULES		9 June 2011	N1	A
1/6/11		Roof colour altered					
Date		Amendments					

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

Development Application for MR ROB PHIPPS
Name of Applicant

Address of site 28 WOORARRA AVENUE, NORTH NARRABEEN

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

I, SIMON WADDINGTON on behalf of WADDINGTON CONSULTING PTY LTD
(insert name) (trading or company name)

on this the 19 June 2014

(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

- 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: RISK ANALYSIS & MANAGEMENT FOR PROPOSED DEVELOPMENT AT 28 WOORARRA AVE,
NORTH NARRABEEN
Report Date: 2 AUGUST 2011
Author: MR BEN WHITE
Author's Company/Organisation: JACK HODGSON CONSULTANTS PTY LTD

Structural Documents list:

10885-S0.00, 10885-S0.01, 10885-S1.00, 10885-S1.01, 10885-S2.00, 10885-S3.00,

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 with appropriate maintenance unless otherwise stated and justified.

Signature

Name

Chartered Professional Status

Membership No

Company

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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, Peter Thompson on behalf of Jack Hodgson Consultants Pty Ltd
(insert name) (trading or company name)

on this the 20TH JUNE, 2014
(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 organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least \$2million. I also certify that I have reviewed the design plans and structural design plans in accordance for the Construction Certificate Stage and that I am satisfied 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: RISK ANALYSIS & MANAGEMENT FOR PROPOSED DEVELOPMENT AT 28 WOORARRA AVENUE, NORTH NARRABEEN – MM 27702

Report Date: 2ND AUGUST, 2011

Author: BEN WHITE

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

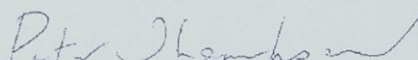
ARCHITECTURAL PLANS PREPARED BY SALLY GARDNER DESIGN & DRAFT DWG NO: A1 TO A6 DATED JUNE 2011

STRUCTURAL PLANS PREPARED BY WADDINGTON CONSULTING DWG NOS: S0.00, S0.01, S1.00, S1.01, S2.00 & S3.00 ISSUE A DATED JUNE 2014

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.

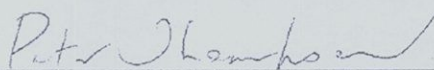
Peter Thompson

(name)


(signature)

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 in the Report and that reasonable and practical measures have been identified to remove foreseeable risk

Signature



Name Peter Thompson

Chartered Professional Status MIE Aust CPEng

Membership No. 146800

Company Jack Hodgson Consultants Pty Ltd

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Jack Hodgson Consultants Pty Limited

CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS

ABN: 94 053 405 011

**RISK ANALYSIS &
MANAGEMENT
FOR
PROPOSED DEVELOPMENT
AT
28 WOORARRA AVENUE,
NORTH NARRABEEN**

RECEIVED MONA VALE

08 AUG 2011

CUSTOMER SERVICE



DIRECTOR: J.D. HODGSON, M. Eng. Sc., F.I. E. Aust., Nper3 Struc. Civil 149788
67 Darley Street, Mona Vale NSW 2103
PO Box 389 Mona Vale NSW 1660
Telephone: 9979 6733 Facsimile: 9979 6926

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GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1 – To be submitted with Development Application

Development Application for

Name of Applicant

Address of site 28 Woorarra Avenue, North Narrabeen

Declaration made by geotechnical engineer or engineering geologist or coastal engineer (where applicable) as part of a geotechnical report

Ben White

(insert name)

on behalf of

Jack Hodgson Consultants Pty Ltd

(Trading or Company Name)

on this the 2nd August 2011, I certify that I am a geotechnical engineer or engineering geologist 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 have

Please mark appropriate box

- ☐ Prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ I am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- ☐ Have examined the site and the proposed development in detail and have carried out a risk assessment in accordance with paragraph 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm the results of the risk assessment for the proposed development are in compliance with the Geotechnical Risk Management Policy for Pittwater - 2009 and further detailed geotechnical reporting is not required for the subject site
- ☐ Have examined the site and the proposed development/alteration in detail and am of the opinion that the Development Application only involves Minor Development/Alterations that do not require a Detailed Geotechnical Risk Assessment and hence my report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements for Minor Development/Alterations
- ☐ Provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report

Geotechnical Report Details:

Report Title: RISK ANALYSIS & MANAGEMENT FOR PROPOSED DEVELOPMENT AT 28 WOORARRA AVENUE, NORTH NARRABEEN

Report Date: 2nd August 2011

Author: BEN WHITE

Author's Company/Organisation: JACK HODGSON CONSULTANTS PTY LTD

Documentation which relate to or are relied upon in report preparation:

I am aware that the above Geotechnical Report, prepared for the abovementioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council 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 in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature

Name Ben White

Chartered Professional Status

MScGEOLAusIMM CP GEOL

Membership No

222757

Company

Jack Hodgson Consultants Pty Ltd

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1(a) - Checklist of Requirements for Geotechnical Risk Management Report for
Development Application

Development Application for _____
 Name of Applicant _____
 Address of site 28 Woorarra Avenue, North Narrabeen _____

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Management Geotechnical Report. This checklist is to accompany the Geotechnical Report and its certification (Form No. 1)

Geotechnical Report Details:

Report Title RISK ANALYSIS & MANAGEMENT FOR PROPOSED DEVELOPMENT AT 28 WOORARRA AVENUE, NORTH NARRABEEN

Report Date 2nd August, 2011

Author BEN WHITE

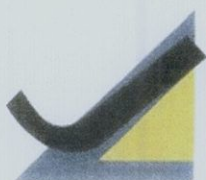
Author's Company/Organisation JACK HODGSON CONSULTANTS PTY LTD

Please mark appropriate box

- ☒ Comprehensive site mapping conducted 29/07/2011 (date)
- ☒ Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
- ☒ Subsurface investigation required
 - ☐ No Justification _____
 - ☒ Yes Date conducted 29/07/2011
- ☒ Geotechnical model developed and reported as an inferred subsurface type-section
- ☒ Geotechnical hazards identified
 - ☒ Above the site
 - ☒ On the site
 - ☐ Below the site
 - ☐ Beside the site
- ☒ Geotechnical hazards described and reported
- ☒ Risk assessment conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 - ☒ Consequence analysis
 - ☒ Frequency analysis
- ☒ Risk calculation
- ☒ Risk assessment for property conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Risk assessment for loss of life conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved
- ☒ Design Life Adopted:
 - ☒ 100 years
 - ☐ Other _____ specify _____
- ☒ Geotechnical Conditions to be applied to all four phases as described in the Geotechnical Risk Management Policy for Pittwater - 2009 have been specified
- ☒ Additional action to remove risk where reasonable and practical have been identified and included in the report.
- ☐ Risk Assessment within Bushfire Asset Protection Zone

I am aware that Pittwater Council will rely on the Geotechnical Report, to which this checklist applies, as the basis for ensuring that the geotechnical risk management aspects of the proposal 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 in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature Ben White
 Name Ben White
 Chartered Professional Status MScGEOLAusIMM CP GEOL
 Membership No. 222757
 Company Jack Hodgson Consultants Pty Ltd



Jack Hodgson Consultants Pty Limited

CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS

ABN: 94 053 405 011

MM 27702.

2nd August, 2011.

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**RISK ANALYSIS & MANAGEMENT
FOR
PROPOSED DEVELOPMENT
AT
28 WOORARRA AVENUE,
NORTH NARRABEEN**

1. INTRODUCTION.

1.1 This assessment has been prepared to accompany an application for development approval. The requirements of the Geotechnical Risk Management Policy for Pittwater, 2009 have been met.

1.2 The definitions used in this Report are those used in the Geotechnical Risk Management Policy for Pittwater, 2009.

1.3 The methods used in this Assessment are based on those described in Landslide Risk Management March 2007, published by the Australian Geomechanics Society and as modified by the Geotechnical Risk Management Policy for Pittwater, 2009.

1.4 The experience of Jack Hodgson spans some 50 years in many areas of Australia and in the Pittwater area, particularly in the last 30 years as Principal of Jack Hodgson Consultants Pty Limited.

2. PROPOSED DEVELOPMENT.

2.1 Extend the footprint of the house to the south east and north west.

2.2 Construct a deck.

2.3 Construct a pergola.

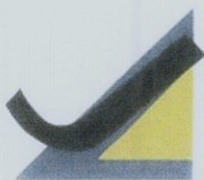
2.3 Details of the proposed development are shown on 6 drawings prepared by Sally Gardener Design and Draft numbered A1 – A6 and dated June 2011.

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3. DESCRIPTION OF SITE & SURROUNDING AREA.

3.1 The site was inspected on the 29th of July 2011.

3.2 The property has a north easterly aspect with an average slope of 20 degrees across the site. Above the site the slope eases to 12 degrees and continues for ~85 metres to the ridge of the hill. Below the property the slope continues for ~100 metres with an average gradient of 8 degrees.

3.3 The frontage consists of a concrete driveway and lawn that continue from the road to the house (Photos 1 & 2). Above the lawn a stable timber cantilever wall and stack rock wall run along the property boundary (Photos 3 & 4). On the south eastern side of the house an access path rises to the uphill side (Photo 5). On the north western side of the house there is a lawn area and a small stable brick retaining wall (Photo 6). Uphill of the house there is a large level paved area that is cut into the slope (Photo 7). Adjacent to the paved area there is a concrete block retaining wall. The retaining wall has a couple of cracks though this is attributed to differential settlement and not slope instability. Overall the wall is in good condition, it stands vertical and appears to be engineered (Photos 8 & 9). To the west of the paved area there is a concrete gravity retaining wall (Photo 10). The wall has a large vertical crack but there were no signs of deflection in the wall and it appeared stable at the time of inspection (Photo 11). The upper portion of the site is covered in a lawn area with a metal shed at the uphill boundary (Photo 12 & 13).

3.4 The two storey brick house is in good condition for its age (Photo 14). It is supported on brick piers and steel posts. Generally the brick walls and piers are in good condition and the steel posts stand vertical (Photos 15). Along the south eastern wall of the house there is a large horizontal crack near the bottom of the brick wall (Photo 16). The crack is attributed to differential settlement rather than slope instability.

4. GEOLOGY OF THE SITE.

4.1 The site is underlain by interbedded sandstones, siltstones and shales of the Upper Narrabeen Group. The Narrabeen Group Rocks are Late Permian to Middle Triassic in age with the early rocks not outcropping in the area under discussion. The materials from which the rocks were formed consist of gravels, coarse to fine sands, silts and clays. They were deposited in a riverine type environment with larger floods causing fans of finer materials. The direction of deposition changed during the period of formation. The lower beds are very variable with the variations decreasing as the junction with the Hawkesbury Sandstones is approached. This is marked by the highest of persistent shale beds over thicker sandstone beds which are similar in composition to the Hawkesbury Sandstones.

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4. GEOLOGY OF THE SITE (CONTINUED).

4.2 The slope materials are colluvial at the surface and residual at depth. They consist of sandy loam topsoil over sandy clays and clays with rock fragments and some floaters through out the profile. The sandy clays and clays merge into the weathered zone of the under lying rocks at depths expected to be in the range 0.5 to 2.0 metres.

5. SUBSURFACE INVESTIGATION.

5.1 Three Dynamic Cone Penetrometer (DCP) tests were conducted in the locations shown on the site plan. The results of these tests are as follows:

DEPTH (m)	NUMBER OF BLOWS - conducted with Pointed Tip		
	DCP 1	DCP 2	DCP 3
0.0 to 0.3	2	8	2
0.3 to 0.6	5	7	28
0.6 to 0.9	5	10	28
0.9 to 1.2	-	13	-
1.2 to 1.5	-	21	-
1.5 to 1.8	-	25	-
1.8 to 2.1	-	47	-
	Refusal @ 0.6m	End of test @ 2.1m	Refusal @ 0.9m

DCP NOTES:

DCP 1 – Refusal @ 0.6m, maroon and orange impact dust on tip.

DCP 2 – End of test @ 2.1m, grey soil on moist tip.

DCP3 – Refusal @ 0.9m, brown topsoil on tip.

One Auger Hole test was conducted in the location shown on the site plan.

The log of the auger hole is as follows:

HAND AUGER 1

0.0 to 0.8m Brown, organic top soil.

0.8 to 1.1m Stiff yellow clay.

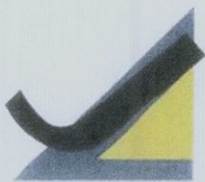
End of test @ 1.1m in stiff yellow clay.

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6. DRAINAGE OF THE SITE.

6.1 ON THE SITE.

The site is well drained with no natural water courses.

6.2 SURROUNDING AREA.

Normal sheet wash will enter the site from above during heavy down pours.

7. GEOTECHNICAL HAZARDS.

7.1 ABOVE THE SITE.

The slope above the site is considered as part of Hazard One in 7.2.

7.2 ON THE SITE.

The slope of the land surface that rises across the site is a potential hazard. (HAZARD ONE).

7.3 BELOW THE SITE.

The slope below the site eases to 8 degrees and the property below is developed and appears to be in good order as observed from the subject site. The slope below the site is not considered a geotechnical hazard.

7.4 BESIDE THE SITE.

The properties beside the site are at similar elevations and have similar geomorphology. The house's and grounds were in good condition as observed from the subject property. No geotechnical hazards likely to adversely affect the subject property were observed beside the site.

8. RISK ASSESSMENT.

8.1 ABOVE THE SITE.

The slope above is considered in Hazard One as part of 8.2

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MM 27702.

2nd August, 2011.

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8. RISK ASSESSMENT (CONTINUED).

8.2 ON THE SITE.

8.2.1 HAZARD ONE Qualitative Risk Assessment on Property

The slope of the land surface rises across the property at angles of some 20 degrees. The house has been cut into the slope and the area uphill of the house has been landscaped with concrete block and concrete retaining walls. The retaining walls had cracks but were standing vertical and appeared stable. No evidence of tension cracking, slumping or any other signs of movement were observed on the site. The adjoining properties are developed and in good condition as observed from the subject property. The likelihood of the slope failing and impacting on the house is assessed as 'Rare' (10^{-5}). The consequences to property of such a failure are assessed as 'Medium' (20%). The risk to property is 'Low' (2×10^{-6}).

8.2.2 HAZARD ONE Quantitative Risk Assessment on Life

For loss of life risk can be calculated as follows:

$$R_{(L,0)} = P_{(H)} \times P_{(SH)} \times P_{(TS)} \times V_{(DT)} \text{ (See Appendix for full explanation of terms)}$$

8.2.2.1 Annual Probability

No evidence of movement was observed on the site.

$$P_{(H)} = 0.00001/\text{annum}$$

8.2.2.2 Probability of Spatial Impact

The house is located on a slope approximately half way up the slope.

$$P_{(SH)} = 0.5$$

8.2.2.3 Possibility of the Location Being Occupied During Failure

The average household is taken to be occupied by 4 people. It is estimated that 1 person is in the house for 20 hours a day, 7 days a week. It is estimated 3 people are in the house 12 hours a day, 5 days a week.

For the person most at risk:

$$\frac{20}{24} \times \frac{7}{7} = 0.83$$

$$P_{(TS)} = 0.83$$

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Jack Hodgson Consultants Pty Limited

CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS

ABN: 94 053 405 011

MM 27702.

2nd August, 2011.

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8. RISK ASSESSMENT (CONTINUED).

8.2.2.4 Probability of Loss of Life on Impact of Failure

Based on the volume of land sliding and its likely velocity when it hits the house, it is estimated that the vulnerability of a person to being killed in the house when a landslide hits is 0.3

$$V_{(DL)} = 0.3$$

8.2.2.5 Risk Estimation

$$\begin{aligned} R_{(Lof)} &= 0.00001 \times 0.5 \times 0.83 \times 0.3 \\ &= 0.00000125 \end{aligned}$$

$$R_{(Lof)} = 1.25 \times 10^{-6}/\text{annum} \quad \text{NOTE: This level of risk is 'ACCEPTABLE'}$$

8.3 BELOW THE SITE.

As no geotechnical hazards likely to adversely impact upon the subject site were observed below the site, no risk analysis is required.

8.4 BESIDE THE SITE.

As no geotechnical hazards likely to adversely impact upon the subject site were observed beside the site, no risk analysis is required.

9. SUITABILITY OF DEVELOPMENT FOR SITE.

9.1 GENERAL COMMENTS.

The proposed development is suitable for the site.

9.2 GEOTECHNICAL COMMENTS.

No geotechnical hazards will be created by the completion of the proposed development if it is done in accordance with the requirements of this Report and good engineering and building practice.

9.3 CONCLUSIONS.

The site and the proposed development can achieve the Acceptable Risk Management criteria outlined in the Pittwater Geotechnical Risk Policy provided the recommendations given in **Section 10** are undertaken.

DIRECTOR: J.D. HODGSON, M. Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788

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10. RISK MANAGEMENT.

10.1. TYPE OF STRUCTURE.

The types of structure are suitable.

10.2. EXCAVATIONS.

A small excavation of 0.5m will be required to extend the house to the south east. The excavation is expected to be through ~0.3 metres of topsoil and ~0.2 metres of clay. Provided the soil materials are kept dry the excavation can stand unsupported for short periods of time until permanent support can be put in place.

10.3. FILLS.

If material from the excavation is to be used for landscaping on site it is to be battered at an angle of 1:2 or supported by an engineered retaining wall. The fill is to be placed in layers not more than 250 mm thick and compacted to not less than 95% of Standard Optimum Dry Density at plus or minus 2% of Standard Optimum Moisture Content.

10.4. FOUNDATION MATERIALS AND FOOTINGS.

It is recommended that the footings for the proposed development be taken to underlying rock using piers as necessary. The design ultimate bearing pressures are 1.2 MPa for spread footings or shallow piers.

10.5. STORM WATER DRAINAGE.

Storm water run off from the proposed addition is to be connected to the existing storm water system.

10.6. SUBSURFACE DRAINAGE.

10.6.1 Retaining walls are required to have adequate back wall drainage.

10.6.2 A new retaining wall is shown in the garage. The space between the existing brick wall and the new wall is to be back filled with non cohesive free draining material to provide a drainage layer immediately behind the wall. The space is to be filled as close to the floor above as possible. The free draining material is to be separated from the ground materials by geotextile fabric.

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ABN: 94 053 405 011

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10. RISK MANAGEMENT (CONTINUED).

10.7. INSPECTIONS.

10.7.1 It is recommended that the foundation materials of all footing excavations be inspected and approved before concrete is placed.

11. GEOTECHNICAL CONDITIONS FOR ISSUE OF CONSTRUCTION CERTIFICATE.

It is recommended that the following geotechnical conditions be applied to the Development Approval:-

The work is to be carried out in accordance with the Risk Management Report MM 27702 dated 2nd August, 2011.

The Geotechnical Engineer is to inspect and approve the foundation materials of all footing excavations before concrete is placed.

12. GEOTECHNICAL CONDITIONS FOR ISSUE OF OCCUPATION CERTIFICATE.

The Geotechnical Engineer is to certify the following geotechnical aspects of the development:-

The work has been carried out in accordance with the Risk Management Report MM 27702 dated 2nd August, 2011.

The Geotechnical Engineer has inspected and approved the foundation materials of all footing excavations before concrete was placed.

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CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS

ABN: 94 053 405 011

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13. RISK ANALYSIS SUMMARY.

HAZARDS TYPE	Hazard One
	The slope on or above the site failing and impacting on the subject property.
LIKELIHOOD	'Rare' (10^{-5})
CONSEQUENCES TO PROPERTY	'Medium' (20%)
RISK TO PROPERTY	'Low' (2×10^{-6})
RISK TO LIFE	1.25×10^{-6} /annum
COMMENTS	'Acceptable' level of risk.

JACK HODGSON CONSULTANTS PTY. LIMITED.

Ben White M.Sc. Geol.,
AusIMM., CP GEOL.
No. 222757
Engineering Geologist.

DIRECTOR: J. D. HODGSON, M. Eng. Sc., F.I.E. Aust., Nper3 Struc. Civil 149788

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Photo 1



Photo 2

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Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

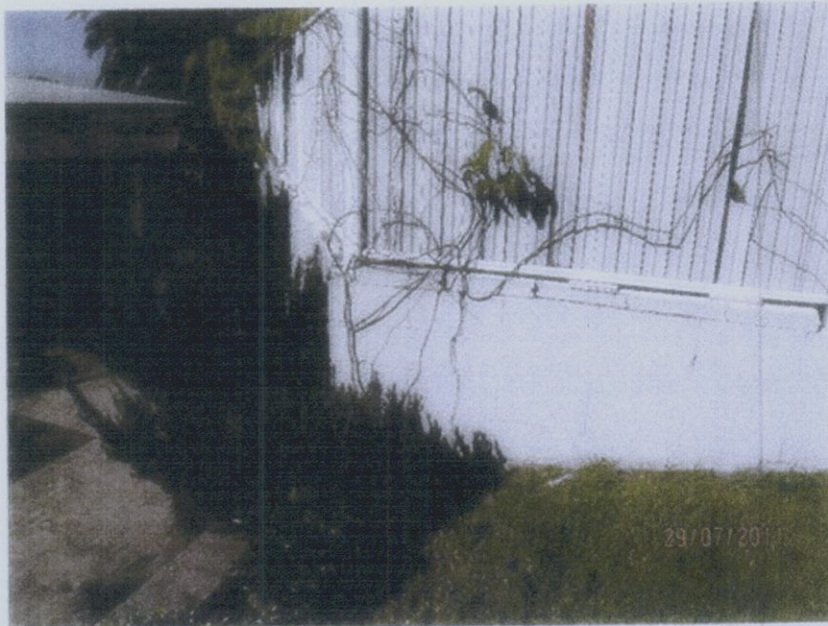


Photo 8

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Photo 9

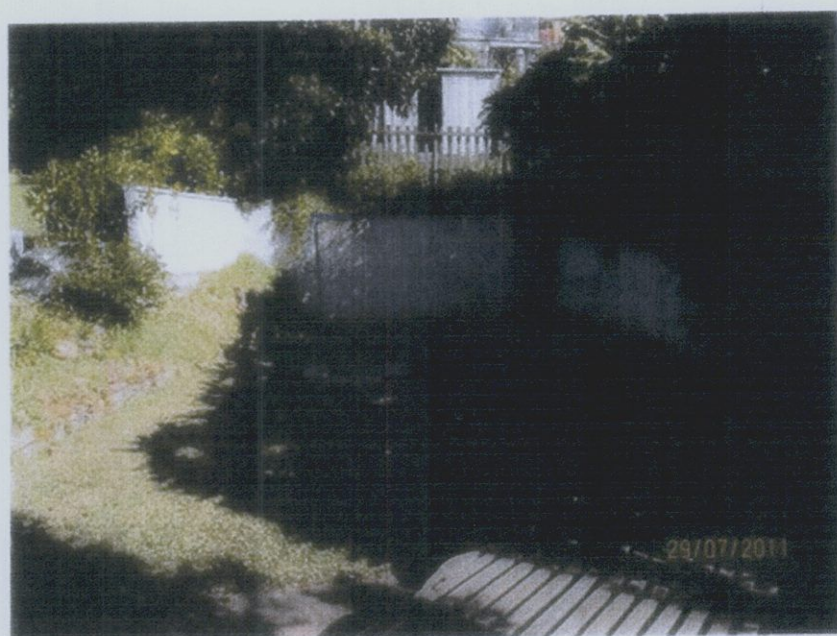


Photo 10



Photo 11



Photo 12

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Photo 13



Photo 14

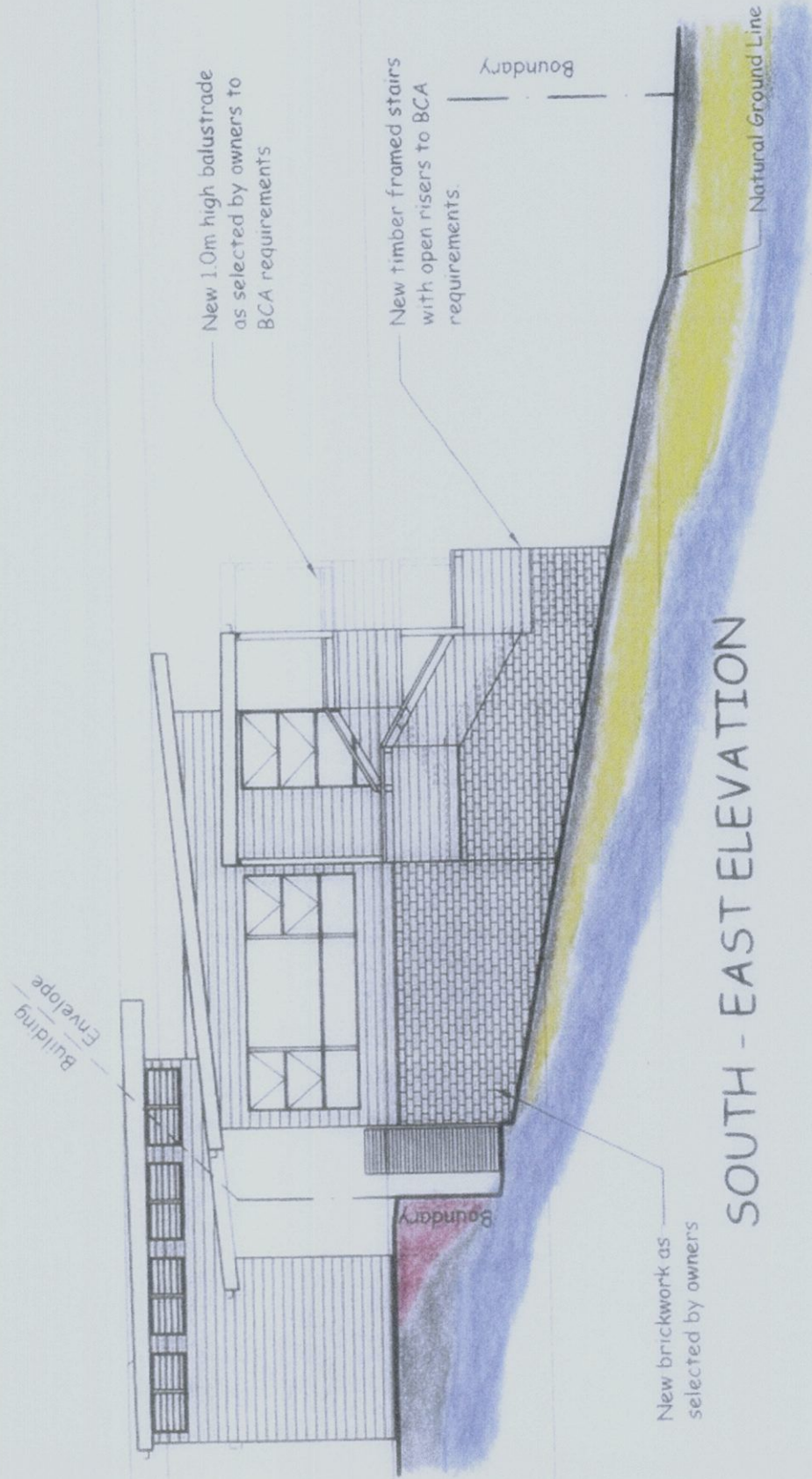


Photo 15



Photo 16

- Fill
- Sandy Loam
- Sandy Clay
- Narrabeen Rock Group



SOUTH - EAST ELEVATION

Type Section
 28 Woorarra Ave, Nth Narrabeen
 MM 27702
 Scale 1:100

26
DP.23429

No 26
SPILT LEVEL
CLAD HOUSE
METAL ROOF

Proposed Extension

AH1

DCP2

Proposed Deck

No 28
1 & 2 STOREY
BRICK & CLAD HOUSE
METAL ROOF

Proposed Pergola

DCP1

Proposed Extension

DCP3

25
DP.23429
1025.5 m² CALCULATED

Hazard 1

12
DP.23429

HAZARDS

1. The slope that rises across and above the property

13
DP.23429

Site Plan
28 Woorarra Ave, Nth Narrabeen
MM 27702
Scale 1:100

No 30
2 STOREY
BRICK & CLAD HOUSE
METAL ROOF

7 RISK ESTIMATION

7.1 QUANTITATIVE RISK ESTIMATION

Quantitative risk estimation involves integration of the frequency analysis and the consequences.

For property, the risk can be calculated from:

$$R_{(Prop)} = P_{(H)} \times P_{(S:H)} \times P_{(T:S)} \times V_{(Prop:S)} \times E \quad (1)$$

Where

$R_{(Prop)}$ is the risk (annual loss of property value)

$P_{(H)}$ is the annual probability of the landslide.

$P_{(S:H)}$ is the probability of spatial impact by the landslide on the property, taking into account the travel distance and travel direction.

$P_{(T:S)}$ is the temporal spatial probability. For houses and other buildings $P_{(T:S)} = 1.0$. For Vehicles and other moving elements at risk $1.0 > P_{(T:S)} > 0$.

$V_{(Prop:S)}$ is the vulnerability of the property to the spatial impact (proportion of property value lost).

E is the element at risk (e.g. the value or net present value of the property).

For loss of life, the individual risk can be calculated from:

$$R_{(LoL)} = P_{(H)} \times P_{(S:H)} \times P_{(T:S)} \times V_{(D:T)} \quad (2)$$

Where

$R_{(LoL)}$ is the risk (annual probability of loss of life (death) of an individual).

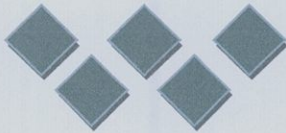
$P_{(H)}$ is the annual probability of the landslide.

$P_{(S:H)}$ is the probability of spatial impact of the landslide impacting a building (location) taking into account the travel distance and travel direction given the event.

$P_{(T:S)}$ is the temporal spatial probability (e.g. of the building or location being occupied by the individual) given the spatial impact and allowing for the possibility of evacuation given there is warning of the landslide occurrence.

$V_{(D:T)}$ is the vulnerability of the individual (probability of loss of life of the individual given the impact).

A full risk analysis involves consideration of all landslide hazards for the site (e.g. large, deep seated landsliding, smaller slides, boulder falls, debris flows) and all the elements at risk.



Waddington Consulting Pty Ltd

ACN 130 522 851
Structural and Civil Engineering
Suite 506, Level 5
22 Central Ave, Manly
P.O. Box 1044
Manly NSW 1655

Our ref: 10885-L1

5 June 2014

Mr Rod Phipps
28 Woorarra Ave,
North Narrabeen NSW

P (02) 9976 0070
F (02) 9976 0095

Dear Rod,

**Subject: *Alterations & Additions at 28 Woorarra Ave, North Narrabeen
Certificate for Engineering Design & Structural Adequacy***

Please find attached copies of engineering drawings 10885-S0.00, S0.01, S1.00, S1.01, S2.00, S3.00, relating to the proposed alterations and additions at 28 Woorarra Ave, North Narrabeen.

I certify that the structural engineering design of the elements shown on the above-mentioned plans has been carried out in accordance with the BCA, relevant Australian Standards and normal engineering practice.

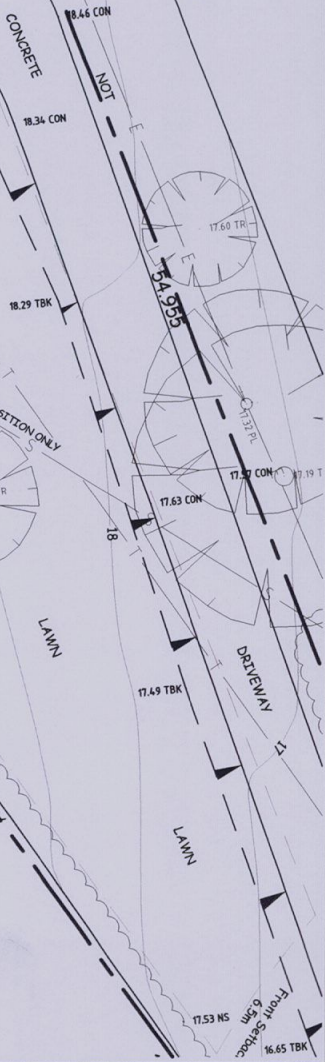
The existing double storey residence consists of mixed construction with full brick basement garage and upper floor of part timber frame and part brick veneer construction with a metal sheet roof. Overall, the structure appeared to be generally in good condition for its age and capable of withstanding the additional loading from the proposed additions if constructed in accordance with the above mentioned plans, the Building Code of Australia, generally accepted good building practice and relevant Australian Standards.

Please do not hesitate to contact me if you have any queries regarding this project or require any further structural engineering advice.

Yours sincerely,

Simon Waddington
MIEAust CPEng NPER (Structural)
Director
Waddington Consulting Pty Ltd

THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC



APPROVED

- 26.4.1
No 26
SPLIT LEVEL
GLAD HOUSE
METAL ROOF

Quick Check Agent on behalf of
SYDNEY WATER

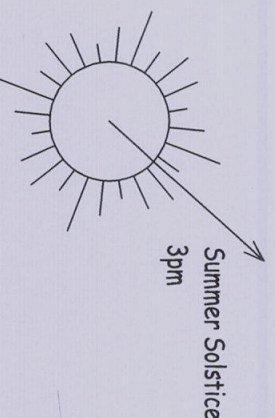
SYDNEY WATER

Per: REECE 25.00/14

(4)

~~(AN)~~
True North

Summer Solstice



Not Part of Stage 1 Construction

SITE LOCATION

THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC

PROPOSED ALTERATIONS & ADDITIONS - 28 WOORARRA AVENUE, NTH. NARRABEEN

Date							
Amendments							
SALLY GARDNER DESIGN AND DRAFT PLANS DRAWN FOR COUNCIL APPROVAL 							
e-mail:	sally@designanddraft.com.au	Mobil :	0414 731 685	ABN :	17 751 732 195	NSW ,2099,Australia.	Client
				47 Towradgi Street,Narraweenna			
Yngve & Nicole AMUNDSEN							
Drawing Title	SITE ANALYSIS PLAN			North 			
Scale	1:200 @ A3			Job Number		3-0711	
Date	9 June 2011			Drawing Number		S1	
				Rev.		-	

BASIXCertificate

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

Alterations and Additions

Certificate number A115956

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: Tuesday 05 July 2011



THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC

Description of project

Project address	
Project name	Amundsen Project V2
Street address	28 Woollarra Avenue North Narrabeen 2101
Local Government Area	Pittwater Council
Plan type and number	Deposited Plan 23429
Lot number	25
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	
ABN (if applicable)	



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

				✓	✓	✓
concrete slab on ground floor	nil					
suspended floor with open subfloor framed (R0.7)	R0.8 (down) (or R1.50 including construction)					
external wall framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)					
raked ceiling, pitched/skillion roof framed	ceiling R3.00 (up) roof foil/sarking	medium (solar absorptance 0.475 - 0.70)				

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 tinted 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

Each window or glazed door with improved frames or pyrolytic low-e glass, or clear/fair gap/clear glazing, or tinted/fair gap/clear glazing must 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 The description is provided for information only Alternative systems with complying U-value and SHGC may be substituted

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

Windows and glazed doors glazing requirements

					✓	✓	✓
W1	NE	6.2	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63, SHGC 0.75)	
W2	NE	2.85	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium single clear (or U-value 7.63, SHGC 0.75)	
W3	NE	3.17	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium single clear, (or U-value 7.63, SHGC 0.75)	

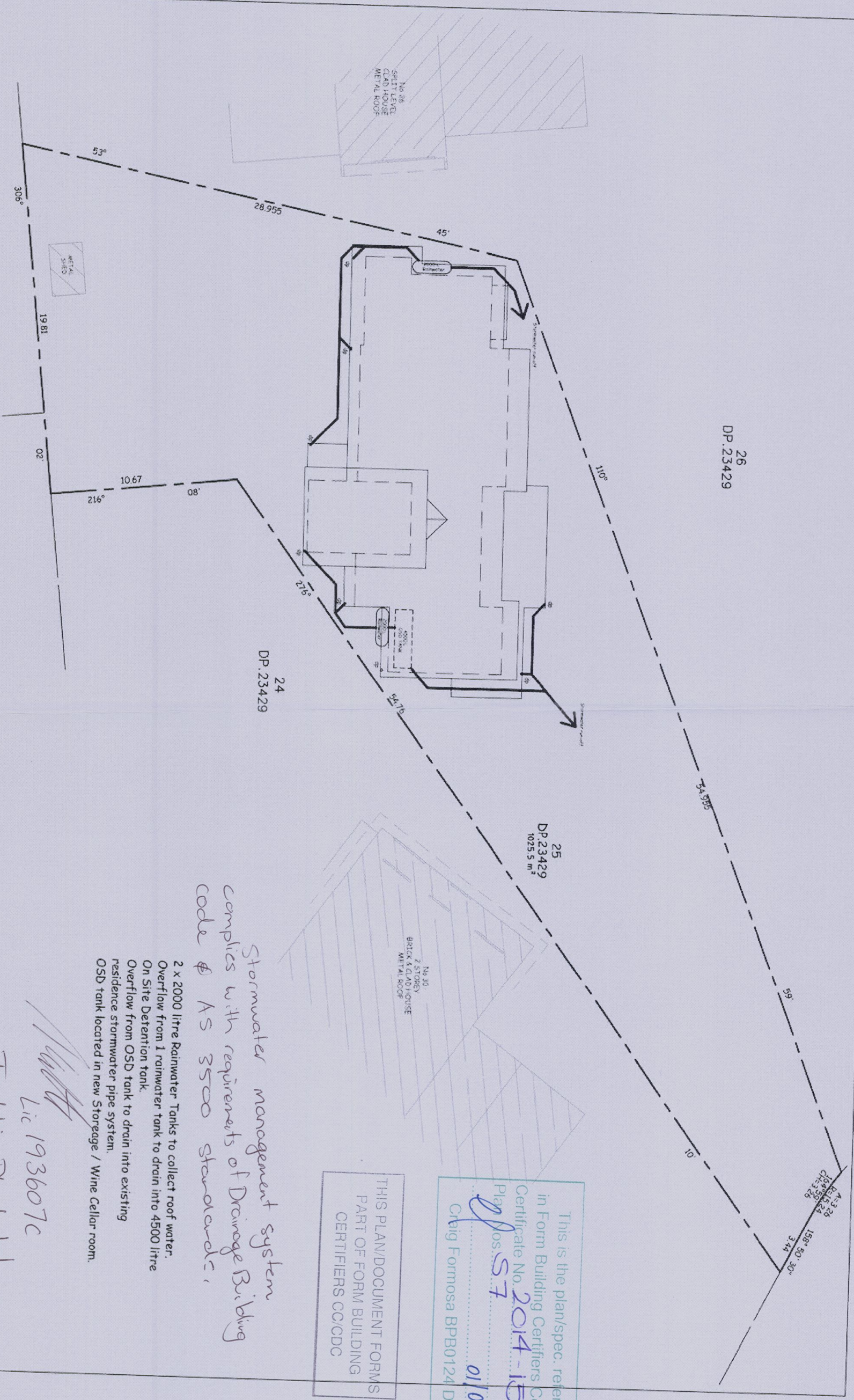
W4	NE	5.67	0	0	0	eave/verandah/pergola/balcony >=800 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W5	NE	1.91	0	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W6	NE	3.97	0	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W7	NE	5.88	0	0	0	eave/verandah/pergola/balcony >=800 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W8	NE	3.24	0	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W9	NW	0.39	0	0	0	awning (adjustable) >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W10	NW	0.39	0	0	0	awning (adjustable) >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W11	NE	0.67	0	0	0	eave/verandah/pergola/balcony >=800 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		
W12	SW	0.87	0	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single toned (or U-value 7.57, SHGC 0.57)		
W13	SW	3.89	0	0	0	eave/verandah/pergola/balcony >=600 mm	standard aluminium, single toned (or U-value 7.57, SHGC 0.57)		
W14	SW	0.49	0	0	0	eave/verandah/pergola/balcony >=600 mm	standard aluminium, single toned (or U-value 7.57, SHGC 0.57)		
W15	SW	1.22	0	0	0	eave/verandah/pergola/balcony >=600 mm	standard aluminium, single toned (or U-value 7.57, SHGC 0.57)		
W16	NW	0.47	0	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)		

W17	NW	5.9	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63 SHGC 0.75)			
W18	SW	1.89	0	0	none	standard aluminium, single clear (or U-value 7.63 SHGC 0.75)			
W19	SE	6.21	0	0	none	standard aluminium, single clear (or U-value 7.63 SHGC 0.75)			
W20	SE	2.52	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)			
W21	NE	1.91	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63 SHGC 0.75)			
W22	NE	5.18	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)			
W23	NE	0.68	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63 SHGC 0.75)			
W24	NE	0.68	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63, SHGC 0.75)			
W25	NE	1.02	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63, SHGC 0.75)			
W26	NE	1.02	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63 SHGC 0.75)			
W27	NE	0.36	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63, SHGC 0.75)			
W28	NE	0.68	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value 7.63 SHGC 0.75)			
W29	NE	1.02	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear (or U-value 7.63 SHGC 0.75)			

W30	NE	1 02	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned, (U-value 6 39, SHGC 0 56)		
W31	NW	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned, (U-value 6 39 SHGC 0 56)		
W32	NW	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned (U-value 6 39, SHGC 0 56)		
W33	NW	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned, (U-value 6 39, SHGC 0 56)		
W34	NW	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned, (U-value 6 39, SHGC 0 56)		
W35	SW	1 88	0	0		none	improved aluminium, single toned, (U-value 6 39 SHGC 0 56)		
W36	SE	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned (U-value 6 39 SHGC 0 56)		
W37	SE	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned (U-value 6 39, SHGC 0 56)		
W38	SE	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned, (U-value 6 39, SHGC 0 56)		
W39	SE	0 62	0	0		eave/verandah/pergola/balcony >=750 mm	improved aluminium, single toned (U-value 6 39, SHGC 0 56)		
W40	NE	1 88	0	0		eave/verandah/pergola/balcony >=900 mm	improved aluminium, single toned, (U-value 6 39 SHGC 0 56)		

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	

I certify that work completed in accordance with these plans and specifications will comply with the regulations referred to in Section 81A(5) of the Environment Planning and Assessment Act 1979



Stormwater management system complies with requirements of Drainage Building code AS 3500 standard.

2 x 2000 litre Rainwater Tanks to collect roof water.
Overflow from 1 rainwater tank to drain into 4500 litre
On Site Detention tank.
Overflow from OSD tank to drain into existing
residence stormwater pipe system.
OSD Tank located in new Storage / Wine Cellar room.

Lic 193607c

Tankie Pty Ltd

PROPOSED ALTERATIONS & ADDITIONS - 28 WOORABRA AVENUE (RTH NADD AVEEN),
 1/ankine Hwy L 761.



SALLY GARDNER DESIGN AND DRAFT
PLANT DRAINAGE CONSULTING APPROVAL

47 Towradgi Street, Narravene
NSW, 2099, Australia.
ABN 17 751 732 195
Mobile: 0414 731 685
e-mail: sally@designanddraft.com.au

Client
Yngve & Nicole
AMUNDSEN

Drawings - 28 WORK
STORMWATER
CONCEPT PLAN

Scale	1:200 @ A3
Date	9 June 2011

Job Number: 57

KRABEEN	3-0711	KP	-
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PROPOSED ALTERATIONS & ADDITIONS
at: 28 WOORARRA AVE, NTH NARRABEEN
for: ROB PHIPPS

STRUCTURAL DRAWINGS

10885-S0.00.....STRUCTURAL NOTES SHT 1 of 2
10885-S0.01.....STRUCTURAL NOTES SHT 2 of 2
10885-S1.00.....FOOTING / BASEMENT PLAN
10885-S1.01.....FOOTING / BASEMENT DETAILS
10885-S2.00.....GROUND FLOOR FRAMING PLAN & DETAILS
10885-S3.00.....ROOF FRAMING PLAN

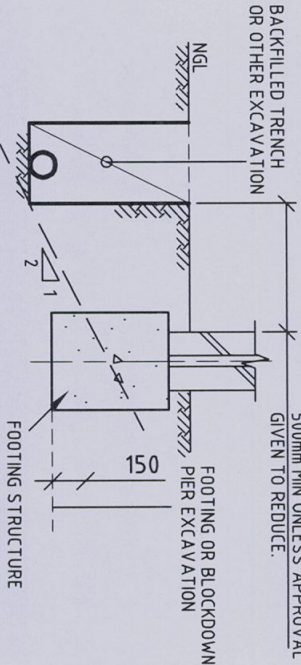
STRUCTURAL NOTES

GENERAL

- G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- G2 THE INFORMATION CONTAINED ON THESE DRAWINGS IS FOR STRUCTURAL ENGINEERING PURPOSES ONLY. IN ALL OTHER MATTERS, THE APPROVED ARCHITECTS DRAWINGS SHALL TAKE PRECEDENCE. ALL DISCREPANCIES THAT COULD RESULT IN CHANGES TO THE STRUCTURAL DETAILS SHALL BE REFERRED TO THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
- G3 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT AUSTRALIAN STANDARDS AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.
- G4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- G5 THE BUILDER SHALL GIVE 48 HOURS NOTICE FOR ALL ENGINEERING INSPECTIONS. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE.
- G7 THE STRUCTURAL COMPONENTS DETAILD ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND LOCAL GOVERNMENT ORDINANCES.
- G8 WIND LOADS ARE DETERMINED IN ACCORDANCE WITH AS4055 FOR WIND CLASSIFICATION: 'N2' WITH A METAL SHEET ROOF.

FOUNDATIONS & EARTHWORKS

- F1 FOUNDATIONS HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING INTENSITY OF 600kPa ON WEATHERED SANDSTONE BEDROCK. FOUNDATION MATERIAL TO BE CONFIRMED ON SITE. STIFFENED RAFT SLAB FOOTING DESIGNED FOR "MIXED" CONSTRUCTION ON CLASS 'A' SITE IN ACCORDANCE WITH AS 2870.
- F2 TOPSOIL INCLUDING GRASS ROOTS IS TO BE REMOVED FROM THE AREA TO SUPPORT SLABS AND FOOTINGS. FOOTINGS TO BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OUT BY EXPOSURE. TRENCHES TO BE DEWATERED & CLEANED OUT PRIOR TO CONCRETE PLACEMENT.
- F3 UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE LIMITS OF EXCAVATIONS NEAR EXISTING FOOTINGS SHALL BE AS SET OUT IN THE DETAIL BELOW.
- F4 PRIOR TO ANY EXCAVATION NEAR EXISTING FOOTINGS, THE BUILDER SHALL DETERMINE THE DEPTH OF FOUNING OF EXISTING FOOTINGS BY LOCAL INVESTIGATORY EXCAVATION. GENERAL EXCAVATION SHALL NOT PROCEED BELOW A LEVEL 150mm ABOVE THE UNDERSIDE OF EXISTING FOOTINGS UNTIL INSTRUCTION IS OBTAINED FROM THE ENGINEER ON PROCEDURES & PRECAUTIONS TO BE TAKEN.



REINFORCEMENT

- R1 ALL REINFORCING BARS SHALL BE GRADE D500N TO AS4671 UNLESS NOTED OTHERWISE. ALL MESH SHALL BE GRADE 500L TO AS4671 AND SHALL BE SUPPLIED IN FLAT SHEETS.
- R2 REINFORCEMENT NOT A TION SHALL BE AS FOLLOWS IN THE FOLLOWING ORDER
- NUMBER OF BARS IN GROUP BAR GRADE AND TYPE
- 17N20-250 17N20-250 SPACING IN mm
- NOMINAL BAR SIZE IN mm
- R3 REINFORCEMENT SYMBOLS:
- 'N' - DENOTES GRADE 500 N DEFORMED BARS TO AS4671 GRADE N.
'R' - DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO AS4671.
'F' - DENOTES HARD-DRAWN WIRE REINFORCING MESH TO AS4671.
'W' - DENOTES HARD-DRAWN PLAIN WIRE TO AS4672
'SL' or 'RL' - DENOTES WELDED GRADE 500 REINFORCING MESH TO AS 4671
- R4 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER. LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.
- AS SHOWN IN THE TABLE BELOW.
- | SPLICE SCHEDULE | |
|-----------------|-----------------------|
| BAR DIA | TENSION SPLICE LENGTH |
| N 12 | 475 |
| N 16 | 750 |
| N 20 | 1000 |
| N 24 | 1100 |
- | SPLICE SCHEDULE | |
|---------------------------|--|
| COMPRESSION SPLICE LENGTH | |
| 450 | |
| 600 | |
| 750 | |
| 900 | |
- R5 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
- R6 WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
- R7 MESH SHALL BE LAPPED 2 TRANSVERSE WIRES PLUS 50mm. BUNDLED BARS SHALL BE TIED TOGETHER AT 30 BAR DIAMETER CENTRES WITH 3 WRAPS OF THE WIRE.
- R8 SLAB REINFORCEMENT SHALL EXTEND AT LEAST 65mm ONTO MASONRY SUPPORT WALLS AND 50% OF BOTTOM REINFORCEMENT SHALL BE COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS. IF THIS CANNOT BE ACHIEVED DUE TO COVER REQUIREMENT'S THEN ALL THE BARS SHALL BE COGGED. FOR MESH THE LAST WELDED CROSS ROD SHALL BE LOCATED OVER THE WALL AND 50mm MINIMUM BEYOND THE FACE OF THE WALL.

REINFORCEMENT Cont

- R9 WHERE TRANSVERSE TIE BARS ARE NOT SHOWN PROVIDE N12-400 SPLICED WHERE NECESSARY AND LAP WITH MAIN BARS 400mm UNLESS NOTED OTHERWISE.
- R10 NO OPENINGS IN BEAMS OR COLUMNS SHALL BE MADE OTHER THAN THOSE SPECIFICALLY DETAILED. FOR OPENINGS IN SLABS UP TO 300mm SQUARE THE REINFORCEMENT SHALL BE DISPLACED TO THE SIDES. FOR OPENINGS BETWEEN 300mm SQUARE AND 600mm SQUARE THE REINFORCEMENT CROSSING THE PROPOSED OPENING SHALL BE CUT AND THE HOLES TRIMMED USING 2N12 BARS TOP AND BOTTOM EXTENDING 1500mm PAST EACH SIDE OF OPENING. OPENINGS LARGER THAN 600mm SQUARE SHALL BE DETAILED BY THE ENGINEER.
- R11 JOGGLES TO BARS SHALL COMPRISE A LENGTH OF 12 BAR DIAMETERS BETWEEN BEGINNING AND END OF AN OFFSET OF 1 BAR DIAMETER.
- R12 ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS. PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS. AND 800 EACH WAY FOR MESH. WHEN POURED ON GROUND AS FORMWORK PROVIDE PLATES UNDER ALL BAR CHAIRS.
- R13 PLASTIC TIPPED STEEL CHAIRS SHALL NOT BE USED ON EXPOSED FACES IN EXPOSURE CLASSIFICATION B1, B2 AND C ONLY PLASTIC OR CONCRETE CHAIRS.
- SITE BENDING OF REINFORCEMENT SHALL BE AVOIDED IF POSSIBLE. WHERE SITE BENDING IS UNAVOIDABLE IT SHALL BE CARRIED OUT COLD, WITHOUT THE APPLICATION OF HEAT, AND IN ACCORDANCE WITH THE PRACTICE NOTE 'RPNT' OF THE STEEL REINFORCEMENT INSTITUTE OF AUSTRALIA USING MECHANICAL BENDING TOOLS.

I certify that work completed in accordance with these plans and specifications will comply with the regulations referred to in Section 81A(5) of the Environment Planning and Assessment Act 1979

This is the plan/spec. referred to in Form Building Certifiers Certificate No. 2014-158
50.80, 50.01, 51.00,
51.01, 52.00, 53.00
01/07/14
Craig Formosa BPB0124 DATED

ISSUED FOR CONSTRUCTION

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A	ISSUED FOR CONSTRUCTION	JC	SW	18.06.14	
ISSUE	DESCRIPTION	BY	APR	DATE	

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PROJECT

PROPOSED ALTERATIONS & ADDITIONS
at: 28 WOORARRA AVE, NTH NARRABEEN
for: ROB PHIPPS

DRAWING TITLE
STRUCTURAL NOTES-SHT 1 of 2

DESIGN	S.M.	DATE	JUNE 2014
DRAWN	J.C.	SCALE	N/A
FILENAME:	10885-S0.00 to 53.00.DWG		
SIGNED		SIZE	A3
DRAWING NO:		REV	A

CONCRETE

- C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS. READY-MIX CONCRETE SUPPLY SHALL COMPLY WITH AS 1379. ALL CEMENT TO BE TYPE 'SL' PORTLAND.
- C2 MAXIMUM DRYING SHRINKAGE SHALL BE 600 MICROSTRAIN AT 56 DAYS. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING. CLEAR CONCRETE COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE.
- C3

LOCATION	CONCRETE GRADE (MPa)	CAST AGAINST GROUND	CAST IN FORMS WITH EXPOSURE	CAST IN FORMS & NOT EXPOSED
FOOTINGS	25	50	50	30
SLABS ON GROUND	32	40	40	25
SUSPENDED SLABS	32	40	40	25

NOTE: WHERE CONCRETE IS POURED ON A VAPOURPROOF MEMBRANE 0.2 mm MINIMUM THICKNESS, THE COVER TO CONCRETE CAST AGAINST GROUND MAY BE REDUCED BY 10 mm.

- C4 NO ADMIXTURES OTHER THAN LOW RANGE WRA SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
- C5 DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
- C6 CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES. FINISHES, NO FINISH WHICH DECREASES COVER IS ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- C7 FOR CHAMFERS, DRIP GROOVES, REGLETS, ETC REFER TO ARCHITECT'S DETAILS. MAINTAIN COVER TO REINFORCEMENT AT THESE DETAILS.
- C8 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
- C9 CONSTRUCTION JOINTS AND CLOSING STRIPS SHALL BE USED TO CONTROL AND REDUCE SHRINKAGE CRACKING IN WALLS AND FLOORS, AND COLD JOINTS IN LARGE POURS. THESE JOINTS SHALL BE PLANNED IN ADVANCE, TO THE APPROVAL OF THE ENGINEER.
- C10 THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY BY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.
- C11 CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT. APPROVED SPRAYED ON CURING COMPOUNDS COMPLYING WITH AS 3799 MAY BE USED WHERE NO FLOOR FINISHES ARE PROPOSED. POLYTHENE SHEETING OR WET HESSIAN MAY BE USED IF PROTECTED FROM WIND AND TRAFFIC.
- C12 CONDUITS, PIPES, ETC, SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF SLAB DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS AND SHALL NOT BE PLACED WITHIN THE REINFORCEMENT COVER
- C13 REPAIRS TO CONCRETE SHALL NOT BE ATTEMPTED WITHOUT THE PERMISSION OF THE ENGINEER.

STRUCTURAL STEEL

- S1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100 AND AS 1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- S2 UNLESS NOTED OTHERWISE ALL MATERIAL SHALL BE:
- GRADE 250 HOT-ROLLED PLATES COMPLYING WITH AS 3678;
 - GRADE 250 HOT-ROLLED FLATS, TFC, TTB, ANGLES 100x100EA OR 125x75UA, AND SMALLER COMPLYING WITH AS 3679.1;
 - GRADE 300PLUS UB, UC, PFC AND ANGLES 125x125EA OR 150x90UA AND LARGER;
 - GRADE 300 WB, WC COMPLYING WITH AS 3679.2;
 - GRADE 1350 RHS, CHS COMPLYING WITH AS 1163;
- S3 THREE(3) COPIES OF WORKSHOP MESHAHON DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AT LEAST 7 DAYS PRIOR TO COMMENCEMENT OF MESHAHON AND PERMISSION TO USE OBTAINED PRIOR TO MESHAHON. PERMISSION TO USE DOES NOT RELIEVE THE BUILDER OF THE FULL RESPONSIBILITY FOR DIMENSIONS, FIT AND COMPLIANCE WITH ARCHITECTURAL AND ENGINEERING DRAWINGS.
- S4 BOLTS:-
- 4.6/5.....COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1111, SNUG TIGHTENED, 8.8/5.....HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252, SNUG TIGHTENED.
 - 8.8/TB.....HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS BEARING JOINT
 - 8.8/TF.....HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION JOINT WITH FACING SURFACES LEFT UNCOATED
- ALL BOLTS SHALL BE M20 GRADE 8.8/5 UNLESS NOTED. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS, NUTS & WASHERS TO BE GALVANISED. TB AND TF BOLTS TO BE INSTALLED USING APPROVED LOAD INDICATING WASHERS, OR BY TURN OF NUT CONTROL OF TENSIONING.
- S5 WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1554.1. WELDING CONSUMABLES SHALL BE E48XX OR W50X UNO. ALL WELD SHALL BE 6 mm CPW SP CATEGORY UNO. CPW SHALL BE SP CATEGORY UNO. INSPECTION SHALL BE CARRIED OUT TO AS 1554.1. ALL GP/SP WELDS SHALL BE 100% VISUALLY SCANNED. SP WELDS ALLOW FOR 10% VISUAL EXAMINATION UNO. BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS TO AS 1554.
- S6 ALL DETAILS, GAUGE LINES ETC, WHERE NOT SPECIFICALLY SHOWN ARE TO BE IN ACCORDANCE WITH AISC DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL AND AISC STANDARDIZED STRUCTURAL CONNECTIONS. PLATES TO BE 10mm THICK, EX-STANDARD SQUARE EDGE FLATS UNO.
- S7 PROVIDE SEAL PLATES TO ALL HOLLOW SECTIONS. PROVIDE VENT HOLES TO HOLLOW MEMBERS & DRAIN HOLES TO ALL MEMBERS TO BE HOT DIP GALVANISED.
- S8 IT IS THE BUILDER'S RESPONSIBILITY TO ENSURE THAT STEELWORK IS SECURELY TEMPORARILY BRACED AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.
- S9 STRUCTURAL STEEL WORK SHALL HAVE THE FOLLOWING SURFACE TREATMENT IN ACCORDANCE WITH THE SPECIFICATION.

ELEMENT	SURFACE CLEANING	PROTECTIVE COATING
INTERNAL	POWER WIRE BRUSHING or ABRASIVE GRIT BLASTING	1 COAT RUST INHIBITIVE ALKYL D PRIMER OR EOLUV + 1 TOP COAT ALL WEATHER GLOSS ACRYLIC
EXTERNAL	ABRASIVE GRIT BLASTING (CLASS 2.5) or PICKLING	1 COAT MORGAN'S ZINC SILICATE PRIMER OR EOLUV + 1 TOP COAT ALL WEATHER GLOSS ACRYLIC WITH UV PROTECTOR
EXTERNAL (ALT1)	PICKLING	HOT DIP GALVANISED

- S10 THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.
- S11 THE MESHAHON AND ERECTION OF THE STRUCTURAL STEEL WORK SHALL SUPERVISED BY A QUALIFIED PERSON EXPERIENCED IN SUCH SUPERVISION, ENSURING ALL REQUIREMENTS OF THE DESIGN ARE MET. ALL BEAMS AND RAFTERS SHALL BE MESHAHED AND ERECTED WITH NATURAL CAMBER UP.
- ALL MEMBERS SHALL BE SUPPLIED IN SINGLE LENGTHS. SPLICES SHALL ONLY BE PERMITTED IN LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS.

BLOCKWORK

- BL1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
- BL2 STRENGTHS OF MASONRY UNITS AND TYPE OF MORTAR SHALL BE AS FOLLOWS:
- CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH f_{uc} = 15 MPa
- MORTAR (CEMENT : LIME : SAND) = 1 : 0.25 : 3
- MORTAR ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF THE SUPERINTENDENT.
- ONLY LOAD BEARING MASONRY WALLS ARE SHOWN UNDER CONCRETE SLABS.
- BL3 OTHER THAN REINFORCED CONCRETE BLOCKWORK, MASONRY SUPPORTING SLABS AND BEAMS SHALL BE TROWELLED SMOOTH WITH MORTAR FILLING ALL VOIDS. TWO LAYERS OF MALTHOID SHALL BE PLACED FULL WIDTH ACROSS SUCH LOAD BEARING SURFACES EXCEPT WHERE PROPRIETARY BEARING STRIP IS NOTED OR ALTERNATIVE DETAIL IS DOCUMENTED. THE HEADS OF LOAD BEARING WALLS SHALL NOT EXTEND ABOVE THE SOFFIT OF THE CONCRETE SLAB ABOVE.
- ALL MASONRY SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.
- NO CHASES OR RECESSES ARE PERMITTED IN LOAD BEARING MASONRY WITHOUT THE APPROVAL OF THE ENGINEER.
- BL7 PROVIDE VERTICAL CONTROL JOINTS AT 10 m MAX. CENTRES GENERALLY, AND 5 m MAX. FROM CORNERS FOR BRICKWORK AND UNREINFORCED BLOCKWORK.
- BL8 REFER TO CONCRETE NOTES FOR DE-PROPPING PRIOR TO CONSTRUCTION OF MASONRY WALLS ON SUSPENDED SLABS.
- BL9 REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING, UNLESS NOTED:
- * PROVIDE CLEANOUT HOLES 100 mm SQUARE MINIMUM AT BASE OF ALL WALLS AND ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS PRIOR TO GROUTING.
 - * CORE FILLING GROUT SHALL BE :- $f'c = 20 \text{ MPa}$ MINIMUM CEMENT CONTENT = 300 kg/m³ SLUMP = 230 ± 30 mm.
 - * REINFORCEMENT PROJECTING FROM FOUNDATION OR SLABS INTO CORES, SHALL BE SET ACCURATELY IN PLACE USING TEMPLATES TO ALIGN WITH THE CENTRE OF THE LENGTH OF CORES AND WITH COVER AS NOTED. WHERE HORIZONTAL BARS ARE INDICATED, THE WEBS OF THE BLOCKS BELOW THE BARS SHALL BE CUT DOWN TO ACCOMMODATE THE BARS.
 - * GROUT ALL CORES IN REINFORCED BLOCKWORK UNLESS OTHERWISE NOTED. HEIGHT OF BLOCKWORK TO BE GROUTED ON ONE DAY SHALL BE 2400mm. GROUT SHALL BE PLACED IN LIFTS OF 1200mm MAXIMUM AND COMPACTED BY POKER VIBRATOR. A SHORT TIME SHOULD ELAPSE BETWEEN SUCCESSIVE LIFTS TO ALLOW PLASTIC SETTLEMENT TO OCCUR.
 - * PROVIDE 50 mm COVER FROM THE OUTSIDE OF THE BLOCKWORK UNLESS NOTED.
- BL10 BACKFILL TO RETAINING WALLS SHALL BE FREE DRAINING GRANULAR MATERIAL. PROVIDE SUBSOIL DRAIN AT BASE OF WALL. DO NOT BACKFILL UNTIL 14 DAYS AFTER GROUTING, OR IF APPLICABLE, AFTER RESTRAINING SLAB OVER HAS BEEN POURED AND CURED FOR 7 DAYS. BACKFILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2 %.

BRICKWORK

- BK1 ALL MATERIALS AND WORKMANSHIP TO BE TO AS 3700.
- BK2 ONLY LOAD BEARING MASONRY WALLS ARE SHOWN UNDER CONCRETE SLABS.
- BK3 MINIMUM CLAY BRICK COMPRESSIVE STRENGTH TO BE 20MPa. RATE OF ABSORPTION TO BE LESS THAN 15g/M2/MIN AT THE TIME OF LAYING. CLAY BRICKS SHALL BE AT LEAST 30 DAYS OUT OF THE KILN AND WILL OFTEN REQUIRE PRE-WETTING UNLESS PROOF OF A MOISTURE EXPANSION LESS THAN 0.6mm/M IS PRODUCED. UNLESS NOTED OTHERWISE MORTAR FOR CLAY BRICKWORK IS TO BE CEMENT: LIME: SAND IN THE RATIO OF 1 : 1 : 6 AND THE WATER RETENTIVITY MUST BE AT LEAST 90%. NO ADDITIVES SHALL BE USED UNLESS APPROVED IN WRITING. BRICKWORK IS TO BE ADEQUATELY CURED PRIOR TO CONSTRUCTION OF SUSPENDED SLABS OVER.
- BK4 UNLESS NOTED OTHERWISE CLAY BRICKWORK IS TO CONTAIN MOVEMENT JOINTS 20MM WIDE AT MAXIMUM SPACING OF 10M (15M IN INDUSTRIAL USE) AND ARE TO CONTAIN 40MM TAR IMPREGNATED POLYURETHANE STRIP, WHERE INTERNAL SKIN IS INTERRUPTED BY STEEL FRAMES THE ABOVE JOINTING APPLIES TO EXTERNAL SKIN ONLY.
- BK5 ALL MASONRY SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.
- BK6 NON LOAD BEARING WALLS BUILT PRIOR TO POURING CONCRETE SHALL BE SEPARATED FROM CONCRETE ABOVE BY 16 mm THICK CLOSED CELL POLYSTYRENE STRIP. WHERE BUILT AFTER CONCRETE IS POURED LEAVE 12mm CLEAR OF CONCRETE SOFFIT.
- BK7 BRICKWORK SUPPORTING SLABS AND BEAMS SHALL BE TROWELLED SMOOTH WITH MORTAR FILLING ALL VOIDS. TWO LAYERS OF MALTHOID SHALL BE PLACED FULL WIDTH ACROSS SUCH LOAD BEARING SURFACES EXCEPT WHERE PROPRIETARY BEARING STRIP IS NOTED OR ALTERNATIVE DETAIL IS DOCUMENTED. THE HEADS OF LOAD BEARING WALLS SHALL NOT EXTEND ABOVE THE SOFFIT OF THE CONCRETE SLAB ABOVE.
- BK8 ALL DOUBLE SKIN SOLID WALLS SUCH AS 230mm THICK BRICKWORK SHALL BE BONDED BY A HEADER COURSE EVERY 4th COURSE.

TIMBER

- T1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1664, AND AS1720.1.
- T2 TIMBER TO BE SEASONED & MINIMUM GRADE F7 UNLESS NOTED OTHERWISE.
- T3 ALL BOLTS, NUTS AND WASHERS FOR TIMBER CONNECTIONS TO BE HOT-DIP GALVANISED & GRADE 4.6, WHERE POSSIBLE. BOLTS SHALL BE RETIGHTENED AT THE END OF THE MAINTENANCE PERIOD. BOLT HOLES SHALL BE DRILLED NO MORE THAN 1 mm OVERSIZE. WASHERS UNDER ALL HEADS AND NUTS SHALL BE AT LEAST 2.5 x BOLT DIA.
- T4 MINIMUM BOLT SPACINGS IN TIMBER TO BE 5xBOLT DIAMETER, MIN EDGE DISTANCES FOR BOLTED CONNECTIONS TO BE 4xBOLT DIAMETER, MIN END DISTANCE FOR BOLTED CONNECTIONS TO BE 5xBOLT DIAMETER.
- T5 MINIMUM TIMBER CONNECTIONS TO BE NOMINAL FIXINGS IN ACCORDANCE WITH AS 1684 UNLESS NOTED OTHERWISE.
- T6 TIE-DOWN SHALL BE IN ACCORDANCE WITH AS1684, 2 SECTION 9 UNLESS NOTED OTHERWISE.
- T7 ALL TIMBER JOINTS AND NOTCHES ARE TO BE 100mm MINIMUM AWAY FROM LOOSE KNOTS, SEVERE SLOPING GRAIN, GUM VENS OR OTHER MINOR DEFECTS.
- T8 ALL TIMBER TO BE EITHER PLANTATION TIMBERS, TIMBER PRODUCTS MANUFACTURED FROM SUSTAINABLY MANAGED FORESTS OR RECYCLED TIMBERS.
- T9 EXTERNAL TIMBER SHALL BE EITHER HARDWOOD DURABILITY CLASS 1 OR II TO AS 1720.2 OR IMPREGNATED PINE GRADE F7, PRESSURE TREATED TO AS1664, AND RE-DRIED PRIOR TO USE. SUPPLEMENTARY TREATMENT SHALL BE APPLIED TO ALL CUT SURFACES. SUPPLY SUPPORTING DOCUMENTATION FOR PRESERVATIVE TREATMENT.

THIS PLAN/DOCUMENT FORMS
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CERTIFIERS CC/CDC

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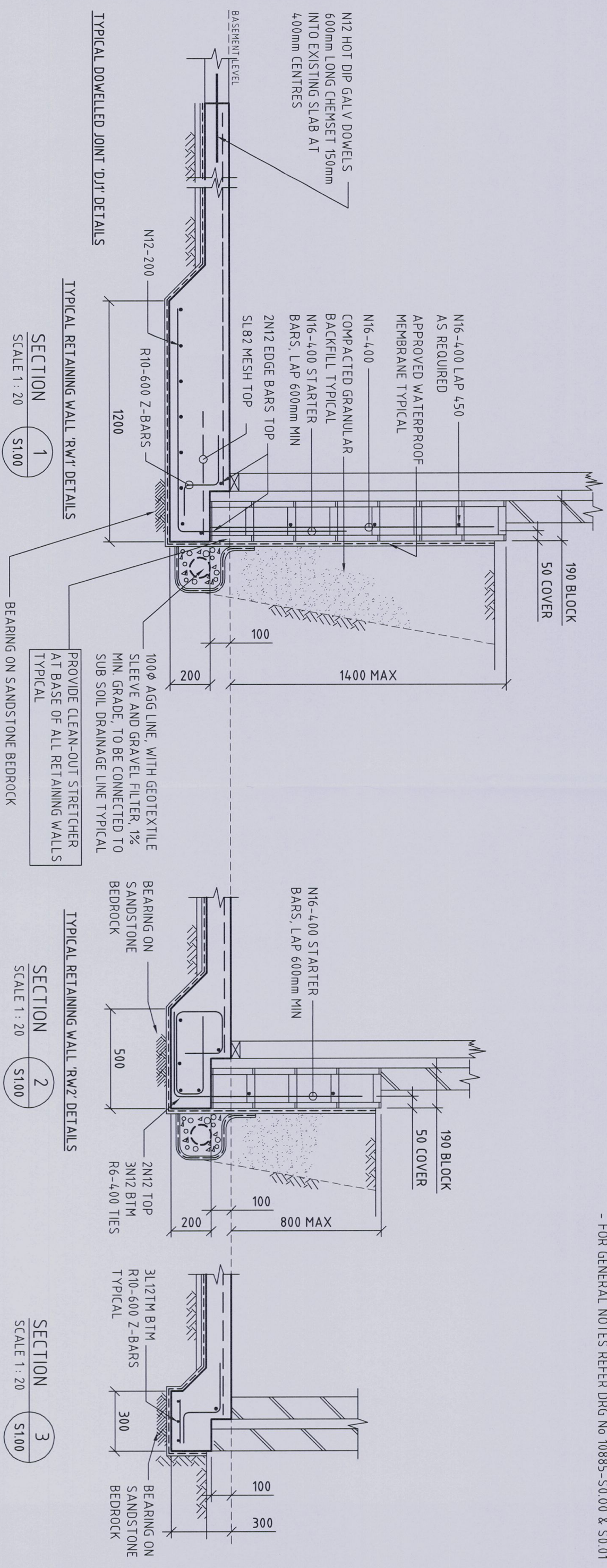
A	ISSUED FOR CONSTRUCTION	JC	SW	18.06.14	
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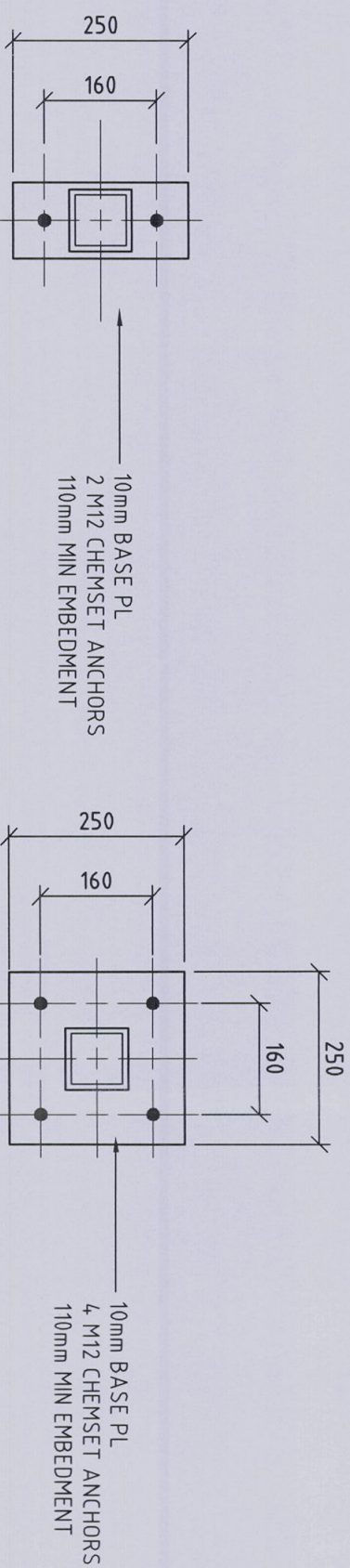
PROJECT		DRAWING TITLE	
PROPOSED ALTERATIONS & ADDITIONS at: 28 WOODRARA AVE, NTH NARRABEEN for: ROB PHIPPS		STRUCTURAL NOTES-SHT 2 of 2	
DESIGN: S.M.	DATE: JUNE 2014	DRAWING No.	REV
DRAWN: J.C.	SCALE: N/A		
FILENAME: 10085-S0.00	to S3.00.DWG	SIGNED	SIZE
			A3

NOTES:
- FOR GENERAL NOTES REFER DRG No 10885-\$0.00 & \$0.01



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TYPICAL BASE 'SC1' & 'SC2' PLATE DETAILS

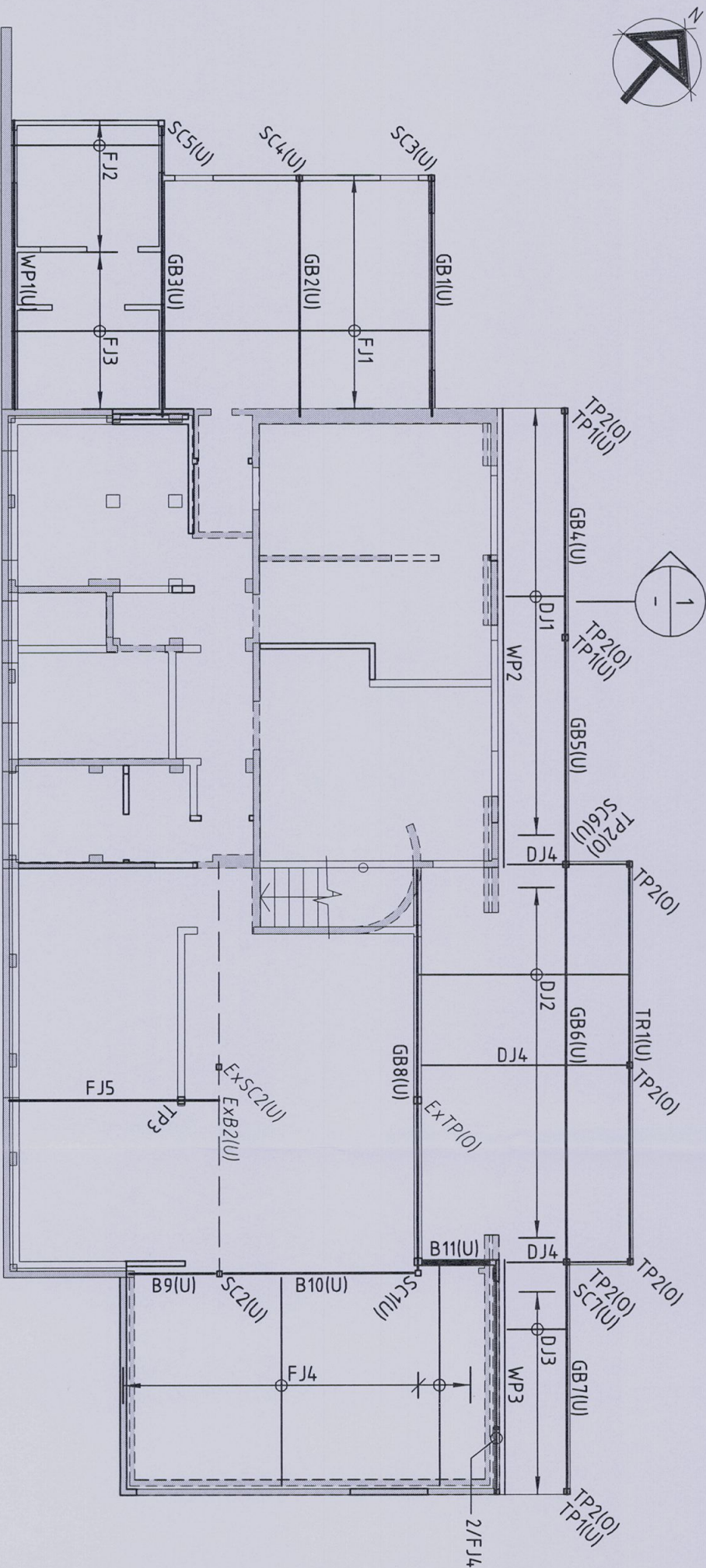


TYPICAL BASE 'SC3' to 'SC6' PLATE DETAILS

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Email enquiries@waddingtonconsulting.com			
PROJECT:			
PROPOSED ALTERATIONS & ADDITIONS			
at: 28 WOORARRA AVE, NTH NARRABEEN			
for: ROB PHIPPS			
DRAWING TITLE:			
FOOTING/BASEMENT DETAILS			
DRAWING No		10885-S1.01	
REV		A	
SIZE		A3	
SIGNED:			
DESIGN: S.M.		DATE: JUNE 2014	
DRAWN: J.C.		SCALE: 1:100	
FILENAME: 10885-S1.01 to S3.00.DWG			

NOTES:
- FOR GENERAL NOTES REFER DRG No 10885-S0.00 & S0.01



GROUND FLOOR FRAMING PLAN

SCALE 1:100

1. THIS DRAWING SHOWS PRIMARY STEEL/TIMBER FLOOR SUPPORT BEAMS ONLY. ALL TIMBER FLOOR FRAMING INCLUDING CONNECTIONS, BRACING & TIE DOWNS SHALL BE BY THE BUILDER IN ACCORDANCE WITH 'AS1684'.

MEMBER SCHEDULE

TIMBER POSTS

TP2 90 x 90 F7 (H3 TREATED)
TP3 90 x 90 F7 (H3 TREATED)

GROUND FLOOR BEAMS

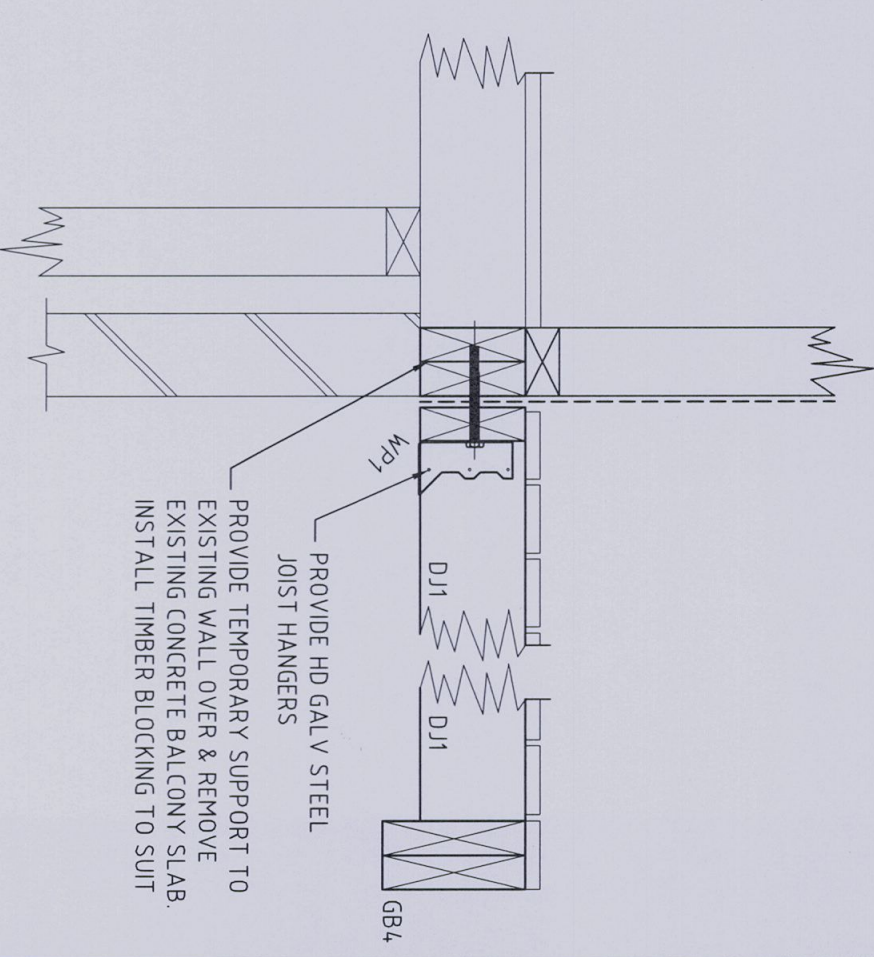
GB1 & GB2..... 300 x 63 LVL or 180 UB 16
GB3 250 UB 25
GB4, GB5 & GB7 2/190 x 45 F7
GB6 300 PFC
GB9 200 x 45 LVL
GB10 2/200 x 45 LVL
GB11 200 x 45 LVL

GROUND FLOOR JOISTS

FJ1 150 x 45 LVL or 190 x 45 F7 AT 450mm MAX CTS
FJ2 150 x 45 LVL AT 450mm MAX CTS - SETDOWN FOR WET-AREA
FJ3 150 x 45 LVL or 190 x 45 F7 AT 450mm MAX CTS
FJ4 200 x 45 LVL AT 450mm MAX CTS
FJ5 200 x 63 LVL or 2/240 x 45 F7 - UNDER POST 'TP3'. EXISTING FLOOR FRAMING TO BE CONFIRMED.
DJ1 & DJ3..... 140 x 45 F7 (H3 TREATED) AT 450mm MAX CTS
DJ2 190 x 45 F7 (H3 TREATED) AT 450mm MAX CTS
DJ4 2/190 x 45 F7 (H3 TREATED) - DOUBLE JOISTS TO CANTILEVER OUT & SUPPORT 'TP2' TYPICAL
TR1 190 x 45 F7 TRIMMER JOIST

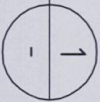
WALL PLATES

WP1 90 x 45 F7 (H3 TREATED) BOLTED TO EXISTING WALL WITH M12-450 MASONRY ANCHORS. POSITION ANCHORS WHOLLY WITHIN BLOCKS NOT MORTAR TO MANUFACTURERS INSTRUCTIONS. PROVIDE 90mm MIN EMBEDMENT.
WP2 & WP3..... 140 x 45 F7 (H3 TREATED) FIXED TO BLOCKING OR DOUBLE JOIST WITH M12-450 COACH SCREWS



SECTION

SCALE 1 : 10

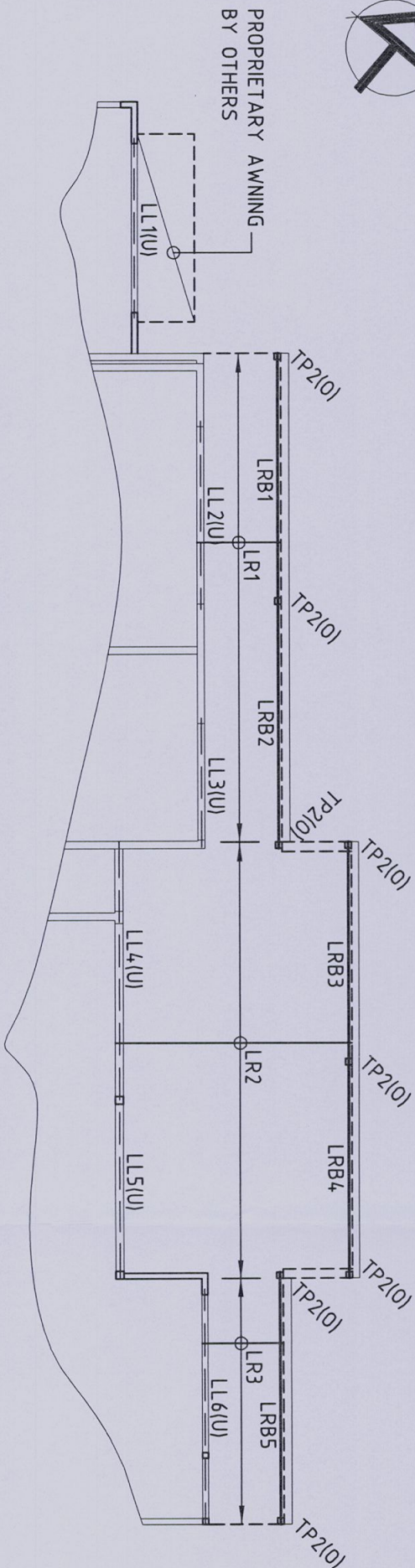


THIS PLAN/DOCUMENT FORMS
PART OF FORM BUILDING
CERTIFIERS CC/CDC

ISSUED FOR CONSTRUCTION

The information contained on this drawing has been prepared for the exclusive use of the Client for this project. No liability or responsibility is accepted for use of this information by any third party or for any other project.				DESIGNER/ARCHITECT:		CHARTERED PROFESSIONAL ENGINEERS:		PROJECT		DESIGN		DATE	
				SALLY GARDNER DESIGN & DRAFT		Waddington Consulting Pty Ltd		PROPOSED ALTERATIONS & ADDITIONS		S. M.		JUNE 2014	
				47 Towradg Street, Narrabeena NSW 2099, Australia		ACN 130 522 851 Structural and Civil Engineering Consultants Suite 6, Level 5, 22 Central Avenue Manly NSW P.O. Box 1044 Manly NSW 1555 Phone (02) 9976 0070 Fax (02) 9976 0095 Email enquiries@wacconsulting.com		at: 28 WOORARRA AVE, NTH NARRABEEN		DRAWN: J.C.		SCALE: 1:100	
				m : 0414 731 685 e : sallygardner@optusnet.com.au		for: ROB PHIPPS		GROUND FLOOR FRAMING PLAN & DETAILS		FILENAME: 10885-S0.00 to S3.00.DWG		SIGNED	
										DRAWING No		REV	
A	ISSUED FOR CONSTRUCTION	JC	SW	18.06.14						10885-S2.00		A3	
ISSUE	DESCRIPTION	BY	APPR	DATE									

NOTES:
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LOWER ROOF FRAMING PLAN

SCALE 1:100

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SHALL BE BY THE BUILDER IN ACCORDANCE WITH 'AS1684'.

MEMBER SCHEDULE

LOWER ROOF BEAMS

LRB1,LRB2,LRB5..... 190 x 45 F7
LRB3 & LRB4..... 190 x 70 F7 or 240 x 45 F7

LOWER ROOF RAFTERS

LR1 & LR3..... 90 x 45 F7 AT 600mm MAX CTS
LR2..... 140 x 45 F7 AT 600mm MAX CTS

LOWER ROOF LEVEL LINTELS

LL1 & LL2..... 2/140 x 45 F7
LL3 2/90 x 45 MGP10
LL4 200 x 45 LVL - CONTINUOUS OVER TWO SPANS
LL5 200 x 45 LVL
LL6 2/140 x 45 F7

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ROOF FRAMING PLAN

SCALE 1:100

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MEMBER SCHEDULE

ROOF BEAMS

RB1 150 UB 14 - IN PLANE OF RAFTERS
RB2 2/200 x 45 LVL or 240 x 45 LVL
- FIX TO SIDE OF EXISTING RAFTERS/BEAM

RAFTERS

R1 170 x 45 LVL AT 600mm MAX CTS
R2 140 x 45 LVL AT 600mm MAX CTS
R3 & R4 140 x 45 LVL AT 600mm MAX CTS
NOTE: FOR RAFTERS DENOTED THUS $\otimes$ ALTERNATIVELY USE 190 x 45 F7
RAFTERS & 2/200 x 45 LVL FOR BEAM 'RB1'

LINTELS

L1 170 x 45 LVL
L2 2/90 x 45 LVL - CONTINUOUS OVER TWO SPANS
L3 170 x 45 LVL - UNDER HIGHLIGHT WINDOWS
L4 200 x 45 LVL
L5 to L8 90 x 45 MGP10

VERTICAL WALL BRACING

VB1 GALV STRAP CROSS BRACING or 20 x 20 ANGLE BRACE WITH
STRAP LOOPED OVER TOP & BTM PLATES & NAILED TO STUDS
AT ENDS OF BRACING PANEL.

VB2 4mm STRUCTURAL HARDWOOD PLY BRACING. NAIL TOP & BTM OF
SHEETS @ 50mm CTS - VERTICAL EDGES @ 150mm CTS &
INTERNAL STUDS @ 300mm CTS. PROVIDE M12 TIE DOWN TO FLOOR
AT EACH END OF BRACING PANEL & AT 1200mm MAX CTS.

ROOF BRACING

BR1 GALV STEEL STRAP BRACING. BRACING FLATTENED OVER EACH
RAFTER & FIXED WITH 2 NAILS, TYPICAL. BRACING POSITIVELY
FIXED TO WALL PLATE OR TIMBER BEAM AT ENDS WITH 5 NAILS
PREFERABLY 2 TO SIDE & 3 TO UNDERSIDE WALL PLATE/TIMBER
BEAM. NO NAIL TO BE CLOSER THAN 10 mm TO EDGE OF TIMBER.

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ROOF FRAMING PLAN

DRAWING No: **10885-S3.00** REV: **A**

ISSUE	DESCRIPTION	BY	APR	DATE
A	ISSUED FOR CONSTRUCTION	JC	SW	18.06.14