11.05.07
R# 215069
$30
MM

FITZGERALD BUILDING CERTIFIERS PTY. LTD.

199 Pennant Hills Road
Thornleigh NSW 2120
ph: 9980 2155
fax: 9980 2166
admin@fitzgeralds.com.au
ABN: 63 119 997 590

CONSTRUCTION CERTIFICATE

PCA ENGAGEMENT - page 2

NOTICE OF COMMENCEMENT- page 2

Construction Certificate Number CC 2007/288 **Approval Date:** 10/05/07
Issued in accordance with the provisions of the Environmental & Assessment Act 1979 under Sections 109C(1)(b) and 109F

Council: PITTWATER COUNCIL
Development Consent No: N0812/06 **Approval Date:** 01.02.07
Name of Certifying Authority: **Fitzgerald Certifiers**
Name of Accredited Certifier: **Paul Fitzgerald - No. PO117**
Accreditation Body: **DIPNR, 20 Lee Street, Sydney 2000.**

Applicant:	**Franz Gross**	**Owner:**	**Franz Gross**
Address:	67 Whale Beach Rd, Avalon NSW 2107	**Address:**	67 Whale Beach Rd, Avalon NSW 2107
Contact Number:	9918 2130		

Subject Land: Lot 155 DP 17189 (No.67) Whale Beach Rd, Avalon
Description of Development – Construction of an outbuilding.
Building Code of Australia Classification: 1a **Value of Work: $ 50 000**

Owner Builder Details

Name:	F Gross
Permit Number:	**318759P**
Address:	67 Whale Beach Rd, Avalon
Contact Number:	9918 2130

Date Application Received: 10.4.07 **Determination**: **APPROVED Date: 10/05/07**

Approved Plans: Plans prepared by N6 Design, Drawing Nos. DA-01A, DA-01B, DA-02, DA-03, DA-04, DA-05, DA-06, DA-07 & DA-08 dated NOV 2005.

Engineers details prepared by Jack Hodgson Consultants Drawing Nos. 24367-S3, 24367-S2, 24367-S1 dated 01/05/07.

17 MAY 2007

Stormwater Management Plan, Drawing Nos. 24367 – H1 dated 27/04/07.

CERTIFICATION:

I, Paul Fitzgerald, 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 and Construction Industry Long Service Payments Act 1986.

Signed: **DATED: 10/05/07**

PRINCIPLE CERTIFYING AUTHORITY:

Name of Certifying Authority	Fitzgerald Certifiers
Name of Accredited Certifier	Paul Fitzgerald
Accreditation Number	P0117
Contact Number	9980 2155
Address	199 Pennant Hills Rd,Thornleigh 2120

MANDATORY CRITICAL STAGE INSPECTIONS: Class 1 & 10 Buildings

1) Commencement of Building Work
2) Piers prior to pour
3) Footings prior to pouring of reinforced concrete
4) Timber frame prior to lining
5) Waterproofing of wet areas
6) Stormwater pipes prior to backfilling
7) Final Inspection - issue of Occupation Certificate

SIGNED: **DATED: 10/05/07**

NOTICE OF COMMENCEMENT: Earliest Date Building Work Can Commence: 12/05/07

SIGNED: **DATED: 10/05/07**

Right of appeal - *under S109K where the Certifying Authority is a Council an applicant may appeal to the Land & Environment Court against the refusal to issue a Construction Certificate within 12 months of the date of issue.*

LEVEL 3

1. The proposal shall fully comply with the Bushfire conditions of development consent and Australian Standard 3959- Construction of buildings in bushfire-prone areas for the relevant requirements for **Level 3 Construction – Extreme Bushfire Attack** as follows:

LEVEL 3 CONSTRUCTION – EXTREME BUSHFIRE ATTACK

Flooring Systems (Clause 3.3.3)

2. The requirements for a floor shall be one, or a combination, of the following:

   (a) A concrete slab on-the-ground.

   (b) A suspended floor, which may be one, or a combination of the following, supported by posts, columns, stumps, piers or poles complying with **Clause 3.4** or walls complying with **Clause 3.5**.

      (i) A concrete floor.

      (ii) A framed floor where the underside of any one bearer at any point is greater than 600mm above the finished ground level.

   (c) A suspended timber floor, framed with timber or metal, where the underside of any one bearer, at any point, is not greater than 600mm above the finished ground level and which has –

      (i) the subfloor space unenclosed and any timber flooring, bearers and joists of fire-retardant-treated timber; or

      (ii) the subfloor space fully enclosed, either by a wall that complies with **Clause 3.5.1(a)**, or by the use of non-combustible sheet material which extends for at least 400mm above the finished ground level.

   Where non-combustible fibre-reinforced cement sheets are used to enclose the subfloor space, the material shall have a minimum thickness of 6mm and all joints shall be covered or sealed. The non-combustible sheet material shall meet the bottom of the cladding material to ensure there are no gaps on the exterior face of the building.

   Note: The bearer, joists and flooring shall be of fire-retardant-treated timber or sheeted underneath with non-combustible material.

Clause 3.3.1 *The following comments refer to the specific items noted and apply to the need to prevent the entry of burning debris to the subfloor space:*

(a) ***Subfloor space****: It is generally agreed that there is a need to completely enclose subfloor spaces close to the ground as they are prone to attack from burning debris. The chosen cut-off distance of 600mm from the*

finished ground level to the underside of the lowest structural member is intended to represent the height below which access to extinguish burning debris would be difficult. In such cases of reduced accessibility, the 400mm high barrier is intended to prevent the entry of burning debris to the subfloor space.

(b) ***Sheeting of the underside of suspended floors:*** *There are a number of opinions concerning the ignition risk presented by exposed subfloors. One opinion is that bearers and joists pose few problems because they are large in section. Another opinion is that the underside of suspended floors should be clad with non-combustible cement sheet or equivalent material on the underside of the floor joists or on top of the joists and under the floorboards, to prevent wind-borne burning debris from contacting the floors. Although sheeting the underside can cause ventilation difficulties, it could help protect the floor in cases where items stored in the underfloor space are ignited. Such housekeeping measures were considered, however, to be outside the scope of this Standard and in view of the potential difficulties and additional cost involved, sheeting requirements are not included for Level 1 construction.*

NOTE: The protection of subfloor openings against the entry of burning debris by way of introducing non-combustible material, such as fibre-reinforced cement sheeting to effectively enclose the subfloor space, may conflict with the requirements for termite protection and should therefore, take into consideration the provisions of AS 3660.1.

Supporting Posts, Columns, Stumps, Piers and Poles (Clause 3.4.3)

3. The requirements for supporting posts, columns, stumps, piers and poles shall be one, or a combination, of the following:

   (a) Non-combustible.

   (b) Fire retardant treated timber mounted on galvanized metal shoes with a clearance of not less than 75mm above the adjacent finished ground level or paving level.

   The above do not apply where the subfloor space is totally enclosed as described in **Clause 3.3.1(c)(ii).**

   Note: All timber shall be fire-retardant-treated to full height.

External Walls (Clause 3.5.3)

4. The requirements for external walls shall be as follows:

   (a) External walls shall be one, or a combination, of the following:

      (i) A wall having an external leaf of masonry, concrete, pise, rammed earth or stabilised earth.

      (ii) A framed wall that incorporates either –

(A) breather-type sarking complying with AS/NZS 4200.1 and with a flammability index of not more than 5 (see AS 1530.2) installed immediately behind the external cladding; or

(B) an insulation material conforming to the appropriate Australian Standard for that material.

NOTE: PVC cladding is not permitted and all external wall cladding shall be of fire-retardant treated timber.

(iii) A wall of timber logs that have the butting faces of adjacent logs, gauge-planed, and the space between the logs sealed in a manner that prevents the entry of burning debris and which allows for building movement.

C3.5.1(a)(iii) *There is little field evidence on the performance of timber log construction under attack from burning debris. The requirements for gauge-planing and sealing are considered necessary to prevent the passage of burning debris to the interior of the building.*

Windows (Clause 3.6.3)

5. All openable windows, including louvres shall be screened with corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm in such a way that the entire opening remains screened when the window is open.

C3.6.1 *A maximum aperture size of 1.8mm was selected for mesh to be used as screening in order to facilitate the use of the screen as an insect-screen.*

Note: Aluminium mesh shall not be used.

In addition to the above, the following applies:

(a) Where timber is used, it shall be fire-retardant-treated timber except where protected by non-combustible shutters.

(b) Where leadlight windows are used, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.

Note: Where the windows are not protected by non-combustible shutters, they shall be glazed with toughened glass.

External Doors (Clause 3.7.3)

6. External doors shall be fitted with –

(a) weather strips or draught excluders to prevent the penetration or build-up of burning debris beneath the door; and

(b) tight fitting door screens fitted with corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

C3.7.1 *A maximum aperture size of 1.8mm was selected for mesh to be used as*

screening in order to facilitate the use of the screen as an insect-screen.

Note: Aluminium mesh shall not be used.

If leadlight glazing panels are incorporated in the doors, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.

(a) timber doors shall be fire-retardant-treated or shall have a non-combustible covering on the exterior surface; or

(b) doors shall be protected by shutters of non-combustible material.

Vents and Weepholes (Clause 3.8.3)

7. Vents and weepholes shall be protected with spark guards made from corrosion-resistant-steel or bronze mesh with a maximum aperture size of 1.8mm.

Note: Aluminium mesh shall not be used.

Roofs (Clause 3.9.3)

General (C3.9.1.2)

8. The following general requirements shall apply to all types of roofing systems:

(a) Timber shakes or shingles shall not be used for the roof covering.

(b) The roof/wall junction shall be sealed either by the use of fascia and eaves linings, or by sealing the gaps between the rafters with a suitable non-combustible material.

(c) Sarking shall have a flammability index of not more than 5 (see AS 1530.2).

Tiled roofs (C3.9.1.2)

9. Tiled roofs shall be fully sarked. The sarking shall be located directly below the tiling battens and shall cover the entire roof area including the ridge.

***C3.9.1.1** and **C3.9.1.2** Where roofing systems are fully sarked, effectively restricting or excluding airflow, it may be necessary to provide ventilation to prevent moisture (condensation) from occurring in the roof space. If roof vents need to be provided to address moisture, they need to be sealed, to protect against the entry of sparks and embers, with corrosion-resistant steel or bronze mesh having a maximum aperture of 1.8mm.*

Sheeted roofs (C3.9.1.3)

10. The requirements for sheeted roofs are as follows:

(a) No fibre reinforced cement or aluminium sheet shall be used.

(b) All gaps under the corrugations or ribs of the roofing material where it meets the fascia or wall line shall be sealed or protected –

(i) by fully sarking the roof; or

(ii) by providing corrosion-resistant steel or bronze mesh, with a maximum aperture size of 1.8mm, profiled metal sheet, neoprene seal, compressed mineral wool or similar material.

(c) All roof sheeting shall be non-combustible and sarked.

Notes:

1. The method of protection in Item (b) (ii) can only be achieved on a roof without valleys and having the deck fixed directly to, but not structurally supported by, the fascia.

2. It is generally recognised that where compressed mineral wool is used for sealing against bushfire attack or for other purposes, adequate ventilation should be provided to stop condensation on the mineral fibre causing corrosion in the roof sheeting or supporting structure.

(c) Rib caps and ridge capping shall be sealed in accordance with **Clause 3.9.1.3(b)**, or preformed rib caps or ridge capping shall be used.

Rooflights (C3.9.1.4)

11. The requirements for rooflights are as follows:

(a) All penetrations of the roof space for the installation of rooflights and associated shafts shall be sealed with a non-combustible sleeve or lining.

Note: Thermoplastic material or toughened glass shall not be used as the glazing for rooflights.

Rooflight glazing shall be of wired glass.

AS 1288 and AS 4285 sets out specific requirements for glazing and skylights.

(b) Vented rooflights shall be provided with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8mm.

Roof ventilators (C3.9.1.5)

12. All components of roof ventilators, including the rotary type shall be constructed of non-combustible material and shall be sealed against the entry of sparks and embers with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8mm.

Roof-mounted evaporative cooling units (C3.9.1.6)

13. Roof-mounted evaporative cooling units shall only be used if the openings to the cooling unit are encased in corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

Note: The evaporative cooler shall be manufactured from a non-combustible material.

C3.9.2 *Assemblies such as awnings, pergolas, blinds, coverings and shades,*

designed to provide shelter to persons, or protect the building from the effects of sun or rain, are not covered by this Standard. The awnings, or similar assemblies, may be located in front of a window or door or over a balcony or deck and may be constructed from metal or a combustible material such as canvas or a thermoplastic material. These assemblies may be fixed or retractable. Awnings and similar assemblies, in many cases, may be added to the building after construction is completed.

Building designers and building owner should be aware that potential dangers may be present where the awning or similar assembly is made from a combustible material.

Eaves (Clause 3.10.3)

14. All eaves shall be enclosed, and the fascia or the gaps between the rafters shall be sealed.

    Note: All timber eaves lining and joining strips shall be of fire-retardant-treated timber.

    Aluminium shall not be used.

Fascias (Clause 3.11.3)

15. All materials used for fascia shall be either non-combustible or of fire-retardant-treated timber.

    Note: Fibre-reinforced cement or aluminium sheet shall not be used.

Gutters and Downpipes (Clause 3.12.3)

16. Any materials or devices used to stop leaves collecting in the gutters shall have a flammability index of not greater than 5 when tested in accordance with AS 1530.2.

C3.12 An alternative approach would be to build gutters and downpipes.

Verandahs and Decks (Clause 3.13.3)

17. Verandahs, decks, and the like, forming part of a building shall comply with one, or a combination, of the following:

    (a) *Slab*

    A reinforced concrete suspended slab floor, supported by posts or columns complying with **Clause 3.4** or walls complying with **Clause 3.5**, or a slab-on-the-ground floor complying with **Clause 3.3.**

    (b) *Sheeted or tongued and grooved solid flooring*

    The requirements for flooring are as follows:

    (i) Compliance with the flooring requirements shall be in accordance with **Clause 3.3**.

(ii) Where the clearance between the finished ground level and the underside of the fill or is not greater than 400mm above finished ground level, all joints in the flooring shall be covered (above the floor level) or shall be sealed.

(c) *Spaced decking*

The requirements for spaced decking are as follows:

(i) The decking timbers shall be fixed with a clearance of not less than 5mm between adjacent timbers.

(ii) The external perimeter beneath the decking shall not be enclosed nor shall access to the space beneath the decking be impeded.

NOTE: This requirement is designed to ensure that access to extinguish fires and remove burning material is maintained.

(iii) Any supports for the decking shall be treated as set out in **Clause 3.4**.

(iv) Decking timbers shall not be allowed to connect with the remainder of the building unless measures are used to prevent the spread of fire into the building;

(v) All materials shall be non-combustible or where timber is used, it shall be fire-retardant-treated (including any balustrades).

C3.13.1 *The dangers represented by timber decks is significantly different to other parts of the building such as roofs due to the timber species, method of fixing, elevation and conditions of exposure. For these reasons, timber decking is not excluded.*

The required spacing, for spaced decking, of at least 5mm between deck timbers is nominal and was selected to allow water to be sprayed up from underneath the deck and reach both the deck surface and adjacent walls. This is facilitated by the external perimeter ground/floor gap not being sealed.

These requirements apply to low level verandas and decks even though access for firefighting purposes may be more restricted.

Service Pipes (Water and Gas) (Clause 3.14.3)

18. All exposed piping, for water and gas supplies shall be metal. Pipes of other materials shall be buried to a depth of at least 300mm below the finished ground level.

Jack Hodgson Consultants Pty Limited
CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN 94 053 405 011

VS 24367.
27th February, 2007.

GEOTECHNICAL AMENDMENT FOR PROPOSED STUDIO AT 67 WHALE BEACH ROAD, WHALE BEACH

1. INTRODUCTION.

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

2. CHANGES TO DESIGN

2.1 A three level house was originally planed to be constructed on the upper part of the block and is the subject of a Risk Analysis and Management Report numbered VO 20845 dated 10th March 2004. It is proposed to construct a single level studio and place water tanks on the slope beneath. These changes will not alter the risk assessment or recommendations in the original report.

2.3 Details of the proposed studio are shown on one drawing prepared by NB Design numbered DA08 and dated Oct 2006.

3. DESCRIPTION OF SITE.

3.1 The site was inspected on the 26th March 2007.

3.2 The property is located on the high side of the road and has a westerly aspect. The land surface rises from the backyard of the existing house at angles of some 20 degrees (Photo 1 & 2). The slope levels out at a bench that has been cut into the surface many years ago in a low cut and fill. The bench is stable and is the proposed location for the proposed studio.

DIRECTOR J D HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 140788
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PO Box 309 Mona Vale NSW 1660
Telephone: 9979 6733 Facsimile: 9979 6926

Jack Hodgson Consultants Pty Limited
CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN: 94 053 405 011

4. SUBSURFACE INVESTIGATION.

One auger hole was put down on the site at the crest of the bench for the proposed cabin. The log of this hole is as follows:-

AUGER HOLE 1.

0.0 to 0.1	Topsoil with sandstone fragments
0.1 to 0.6	Brown disturbed clays and soil (fill)
0.6 to 0.9	Dark brown fine sandy loam (original surface)
0.9 to 1.4	Yellow brown firm to stiff clays
1.4 to 1.5	Mottled pink to light yellow firm to stiff clays
	Hand auger refusal on sandstone at 01.5 metres (possibly floater)

5. RECOMMENDED CHANGES TO DESIGN

It is proposed to put a water tank under the proposed studio. We recommend the tank be supported on a concrete slab as opposed to sitting on the surface slope materials or on piers. A suitable solution would be to excavate the slope to create a lower level for the studio. This would serve to safely hold the tanks and the required retaining wall would add support to the slope.

6. EXCAVATIONS.

6.1 The required excavation will reach a maxim mum depth of 3.5 metres. Provided the subsurface materials are representative of those encountered in Auger 1 the cut will stand unsupported until permanent support is in place. As an addition to the original report we recommend a geotechnical engineer be present during start of the excavation process to confirm this.

6.2 Construction of the retaining walls is to be completed as soon as possible after the excavation is complete. The cut batters are to be covered to prevent loss of moisture in dry weather and to prevent access of moisture in wet weather. Upslope runoff must be diverted from the cut faces by sandbag mounds or similar diversion works. Temporary support may be necessary depending upon the material encountered in the cuts, the likelihood of heavy rain and the length of period before permanent support is installed. The design Coefficient of Lateral Pressure is 0.6.

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CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN: 94 053 405 011

7. CONCLUSIONS.

The site and the proposed development can achieve the Acceptable Risk Management criteria outlined in the Pittwater Interim Geotechnical Risk Policy provided the recommendations given in this amendment are undertaken as well as those in **Section 10** of the original report.

JACK HODGSON CONSULTANTS PTY. LIMITED.

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

J. D. Hodgson M.Eng.Sc.,
M.I.E.Aust., CP ENG.
Civil & Structural Engineer.
Nper3, Struct. Civil. No. 149788.
Director.

Photo 1

Photo 2

Fair Trading for consumers & traders

FRANZ XAVER GROSS
67 WHALE BEACH ROAD
AVALON 2107

HOME BUILDING ACT 1989

OWNER BUILDER PERMIT

Permit :318759P Issued:14/03/2007
Receipt:AA2356624 Amount:$135.00

Building Site:

LOT 155, 67 WHALE BEACH ROAD, AVALON 2107

Authorised Building Work:

DA 0058/06 EXTENTION TO EXISTING HOUSE
ENLARGING FLOOR AREA AND KITCHEN AREA & BEDROOM
DA00812/06 CONSTRUCTION OF A SEPARATE STUDIO

ISSUED BY PITTWATER COUNCIL

Should the property be sold within 6 years of completion of the work it will be necessary to obtain home warranty building insurance from approved insurers if the value of the work was greater than $12,000. A certificate of insurance must be attached to any contract for sale.

You should obtain professional advice from general insurers regarding public liability and property damage cover, etc.

Note: This permit is only valid when an official receipt has been imprinted.
If payment is made by cheque, the permit is conditional on the cheque being met at presentation.

K.A. Sibbosa
Issuing Officer

********** END OF PERMIT **********

SYDNEY WATER
APPROVED

1. Property will drain to Sydney Water's Sewer with Ground levels as at Date of Survey.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licensed plumber/drainer.
3. Position of structure in relation to Sydney Water's assets is satisfactory.
4. Any Plumbing and/or Drainage Work to be carried out in accordance with the Water Board (Corporation) Act 1994 AS 3500 and the NSW Code of Practice.
5. Gullies, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Balcony, Verendah, Floor or other cover unless otherwise approved by Sydney Water.
6. Prop. No. 3460975

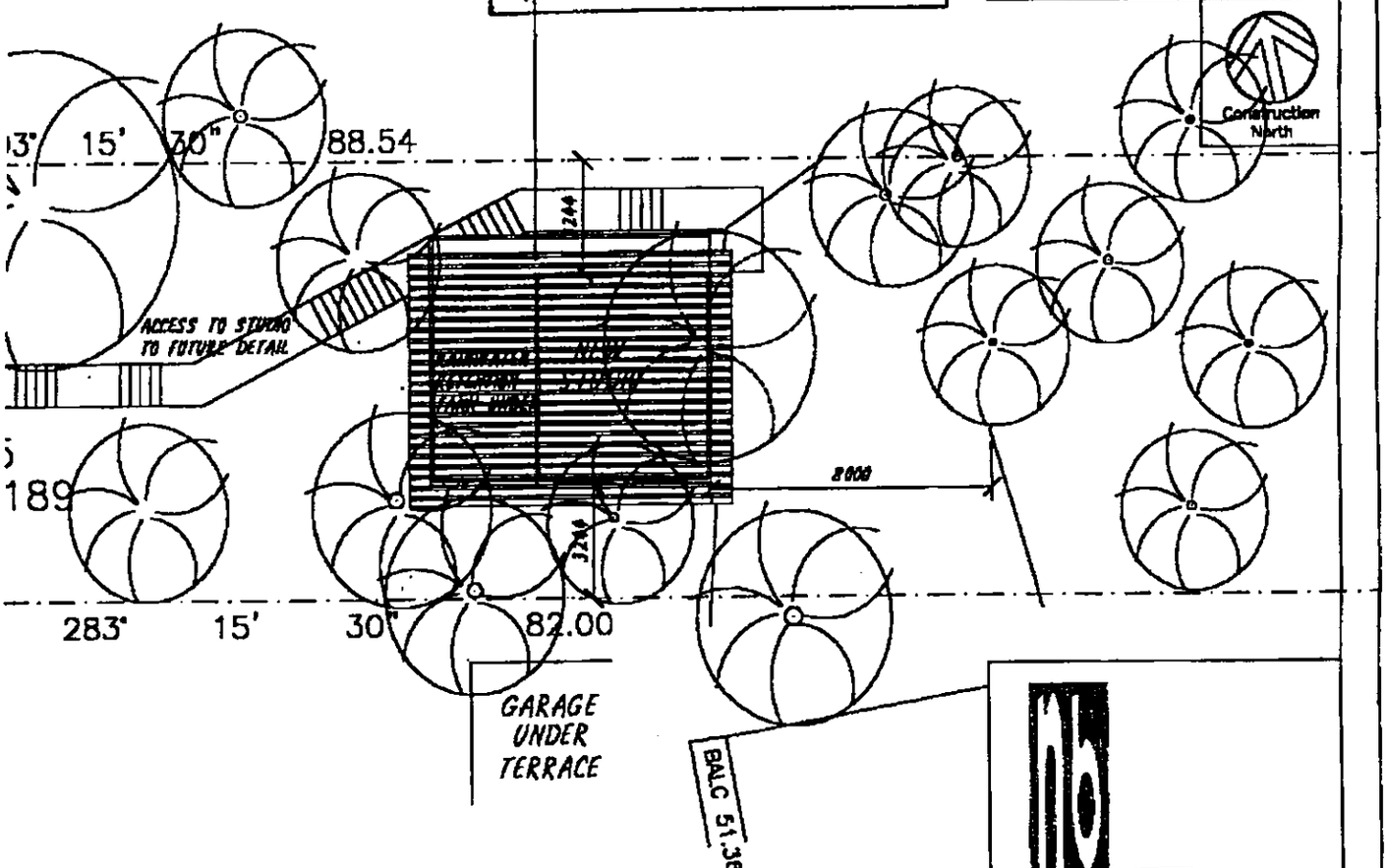
CITY CUSTOMER CENTRE

30/3/07

SYDNEY WATER CORPORATION

No	Revision	Date
A	ISSUED FOR COUNCIL	24.01.06
B	RELOCATED STUDIO TOWARD HOUSE	09.10.06

27008



DEVELOPMENT DATA

EXISTING LOT SIZE	1065 m²
EXISTING HOUSE AREA	185 m²
EXISTING LOWER GROUND	45 m²
EXISTING LANDSCAPING	958 m²
EXISTING FSR	0.099:1
PROPOSED GROUND FLOOR AREA	133.7 m²
PROPOSED FIRST FLOOR AREA	40.1 m²
PROPOSED HOUSE AREA	172.8 m²
PROPOSED GARAGE/STORAGE AREA	58.8 m²
PROPOSED STUDIO AREA	30 m²
PROPOSED LANDSCAPING AREA	862.3 m²
PROPOSED FSR	0.162:1

IMITATION TIMBER CLAD RESIDENCE NO. 65

design
ABN 500 775 23481
Suite 3A, 479 Pacific Hwy, Belgrave NSW 2065
Tel: (02) 9949 5317 Fax: (02) 9907 5167

CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

DRAWING
SITE PLAN

Drawn	Checked	Scale
mel		1:200 @ A3
Date	Job No.	Drawing No. / Issue
Nov. 2005		DA-01 / B

Council Copy

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/5/07
Accreditation No 117

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

Development Application for _____
Name of Applicant

Address of site 67 Whale Beach Road, Whale Beach

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

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

on this the 8th May 2007 (date)
certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater. I am authorised by the above organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least $2million. I also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development

Geotechnical Report Details: Geotechnical Amendment for the proposed studio at 67 Whale Beach Road, Whale Beach VS 24367

Report Date: 27th February, 2007

Author: Jack Hodgson

Structural Documents list:

24367-S1a, S2a and S3a

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.

Jack Hodgson (name) _____ (signature)

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

I prepared and/or technically verified the abovementioned Geotechnical Report as per Form 1 dated and now certify that I have viewed the above listed structural documents prepared for the same development. I am satisfied that the recommendations given in the Geotechnical Report have been appropriate taken into account by the structural engineer in the preparation of these structural documents. I am 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 J HODGSON
Chartered Professional Status MEngSc FIEAust
Membership No. 149 788

No	Revision	Date
A	ISSUED FOR COUNCIL	20.01.06
B	RELOCATED STUDIO TOWARD HOUSE	04.10.06

WHALE BEACH ROAD

PROVIDE APPROVED SEDIMENT RETENSION MATERIAL TO EROSION BARRRIER AS SHOWN

METAL CLAD RESIDENCE NO. 69

EAVE 45.41

15' 12.495

193°

HOUSE

NEW CONCRETE DRIVEWAY

P.POLE

EXISTING KERB AND GUTTER TO REMAIN - NO WORKS

103° 15' 30" 88.54

PROVIDE APPROVED SEDIMENT RETENSION MATERIAL TO EROSION BARRRIER AS SHOWN

ACCESS TO STUDIO TO FUTURE DETAIL

RAINWATER RETENTION TANK UNDER

NEW STUDIO

Construction North

LOT 155
D.P. 17189

PROVIDE APPROVED SEDIMENT RETENSION MATERIAL TO EROSION BARRRIER AS SHOWN

CONCRETE DRIVEWAY

PROVIDE APPROVED SEDIMENT RETENSION MATERIAL TO EROSION BARRRIER AS SHOWN

283° 15' 30" 82.00

GARAGE UNDER TERRACE

BAL 51.36

1 DP 203362

NOTE:
REFER SURVEY DRAWINGS FOR CONTOURS.

Council Copy

IMITATION TIMBER CLAD RESIDENCE NO. 65

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/5/07
Paul Fitzgerald Accreditation No 117

nb design
ABN 500 775 23481
999 SETTLERS RD. CENTRAL MACDONALD, NSW 2775
Tel: (02) 4648 2283 Fax: (02) 4648 2272

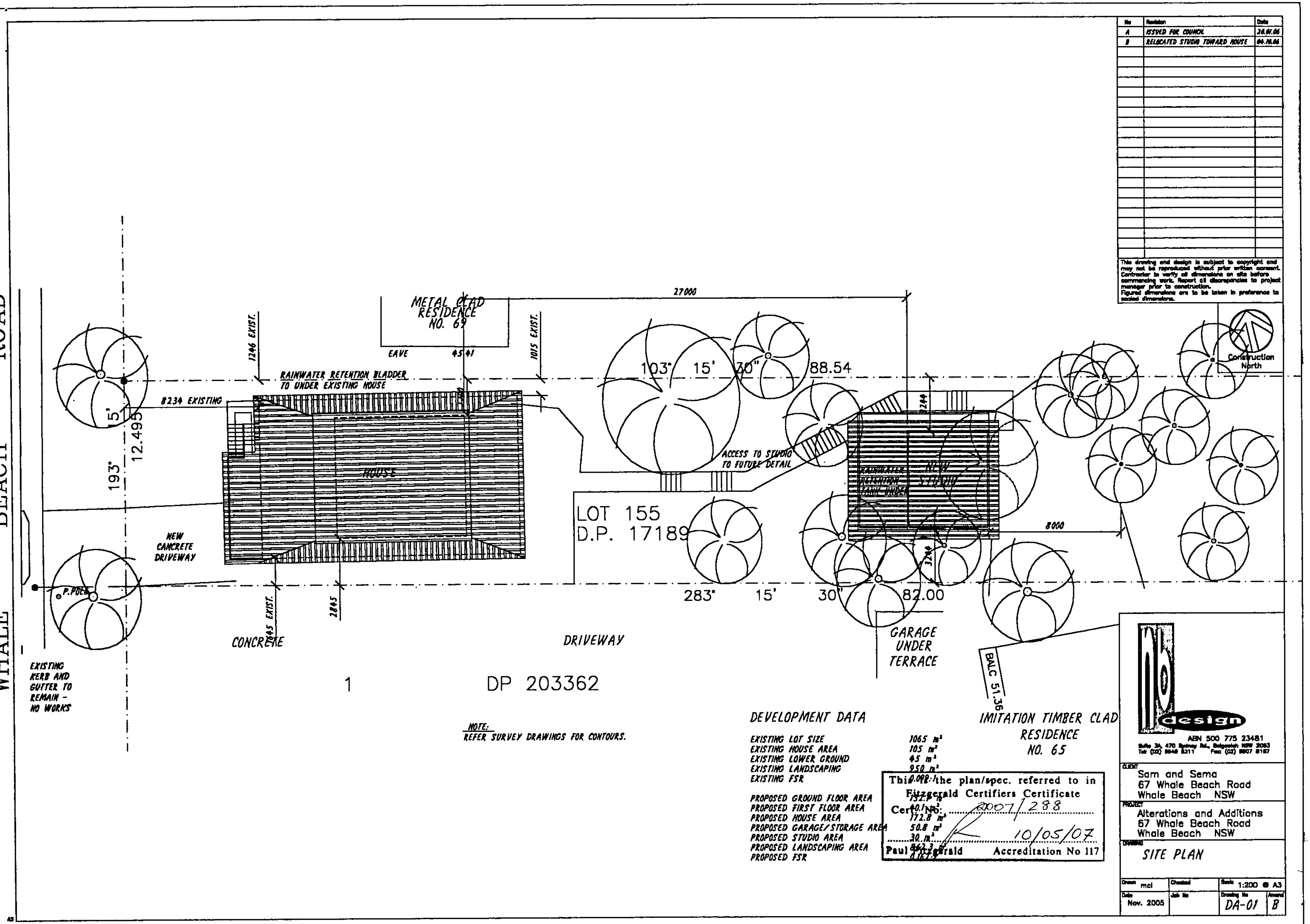
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

DRAWING
EROSION AND SEDIMENT MANAGEMENT PLAN

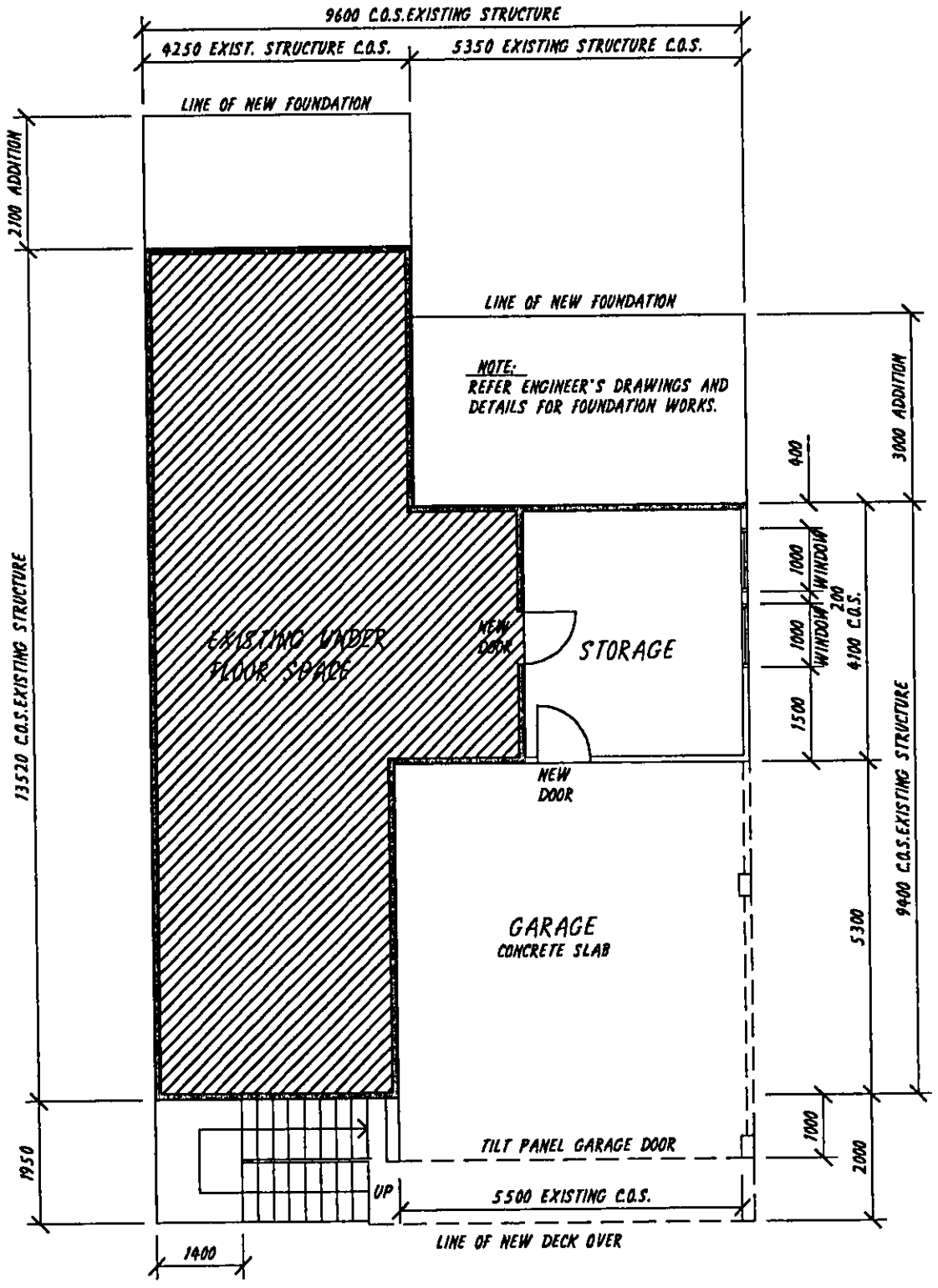
Drawn	Checked	Scale	
mcl		1:200 @ A3	
Date	Job No	Drawing No	Amend
Mar. 2007		ES-01	A

A3


WHALE BEACH ROAD
EXISTING KERB AND GUTTER TO REMAIN - NO WORKS
P.POLE
193° 15' 12.495
NEW CANCRETE DRIVEWAY
8234 EXISTING
RAINWATER RETENTION BLADDER TO UNDER EXISTING HOUSE
1246 EXIST.
1645 EXIST.
2845
CONCRETE
HOUSE
METAL CLAD RESIDENCE NO. 69
EAVE
4541
1015 EXIST.
27000
DRIVEWAY
LOT 155
D.P. 17189
1
DP 203362
NOTE: REFER SURVEY DRAWINGS FOR CONTOURS.
103° 15' 30" 88.54
ACCESS TO STUDIO TO FUTURE DETAIL
283° 15' 30" 82.00
NEW STUDIO
3244
8000
GARAGE UNDER TERRACE
BALC 51.36
IMITATION TIMBER CLAD RESIDENCE NO. 65
DEVELOPMENT DATA
EXISTING LOT SIZE 1065 m²
EXISTING HOUSE AREA 105 m²
EXISTING LOWER GROUND 45 m²
EXISTING LANDSCAPING 950 m²
EXISTING FSR
PROPOSED GROUND FLOOR AREA
PROPOSED FIRST FLOOR AREA
PROPOSED HOUSE AREA 172.8 m²
PROPOSED GARAGE/STORAGE AREA 50.8 m²
PROPOSED STUDIO AREA 30 m²
PROPOSED LANDSCAPING AREA
PROPOSED FSR
This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert No: 2007/288
10/05/07
Paul Fitzgerald Accreditation No 117
Construction North
No Revision Date
A ISSUED FOR COUNCIL 28.01.06
B RELOCATED STUDIO TOWARD HOUSE 04.10.06
This drawing and design is subject to copyright and may not be reproduced without prior written consent. Contractor to verify all dimensions on site before commencing work. Report all discrepancies to project manager prior to construction. Figured dimensions are to be taken in preference to scaled dimensions.
nb design
ABN 500 775 23481
CLIENT Sam and Sema 67 Whale Beach Road Whale Beach NSW
PROJECT Alterations and Additions 67 Whale Beach Road Whale Beach NSW
DRAWING SITE PLAN
Drawn mcl
Scale 1:200 @ A3
Date Nov. 2005
Drawing No DA-01
Amend B

No	Revision	Date
A	ISSUED FOR COUNCIL	26.01.06

Construction North



NOTE:
RAINWATER RETENSION BLADER TO BE LOCATED UNDER EXISTING FLOOR

1 LOWER GROUND FLOOR PLAN

EXISTING WALLS SHOWN SOLID - EXISTING AREAS SHOWN HATCHED - NO WORKS

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10/05/07
Paul Fitzgerald Accreditation No 117

design
ABN 500 775 23481
Suite 3A, 470 Sydney Rd., Balgowlah NSW 2093
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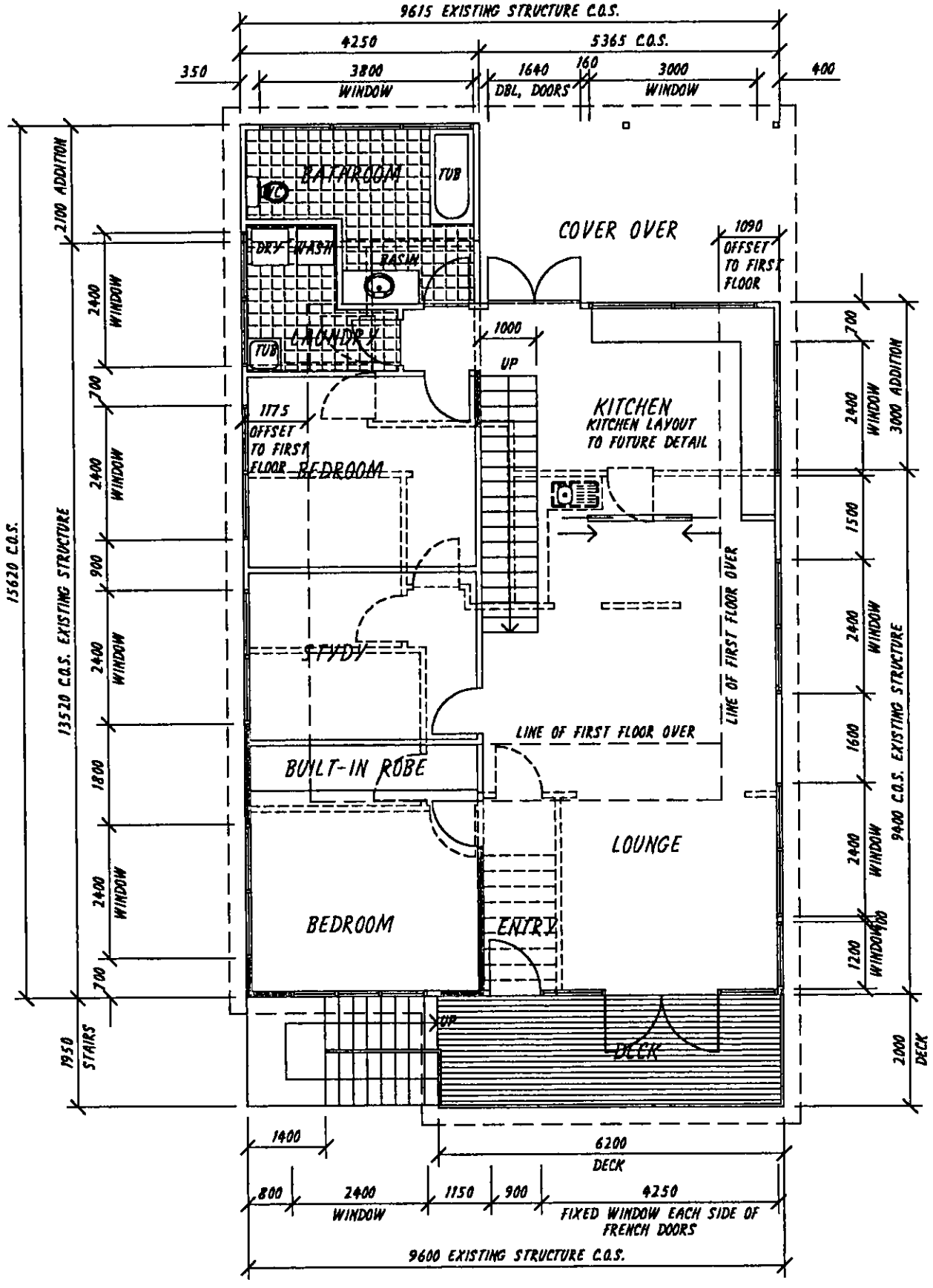
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

DRAWING
LOWER GROUND FLOOR PLAN

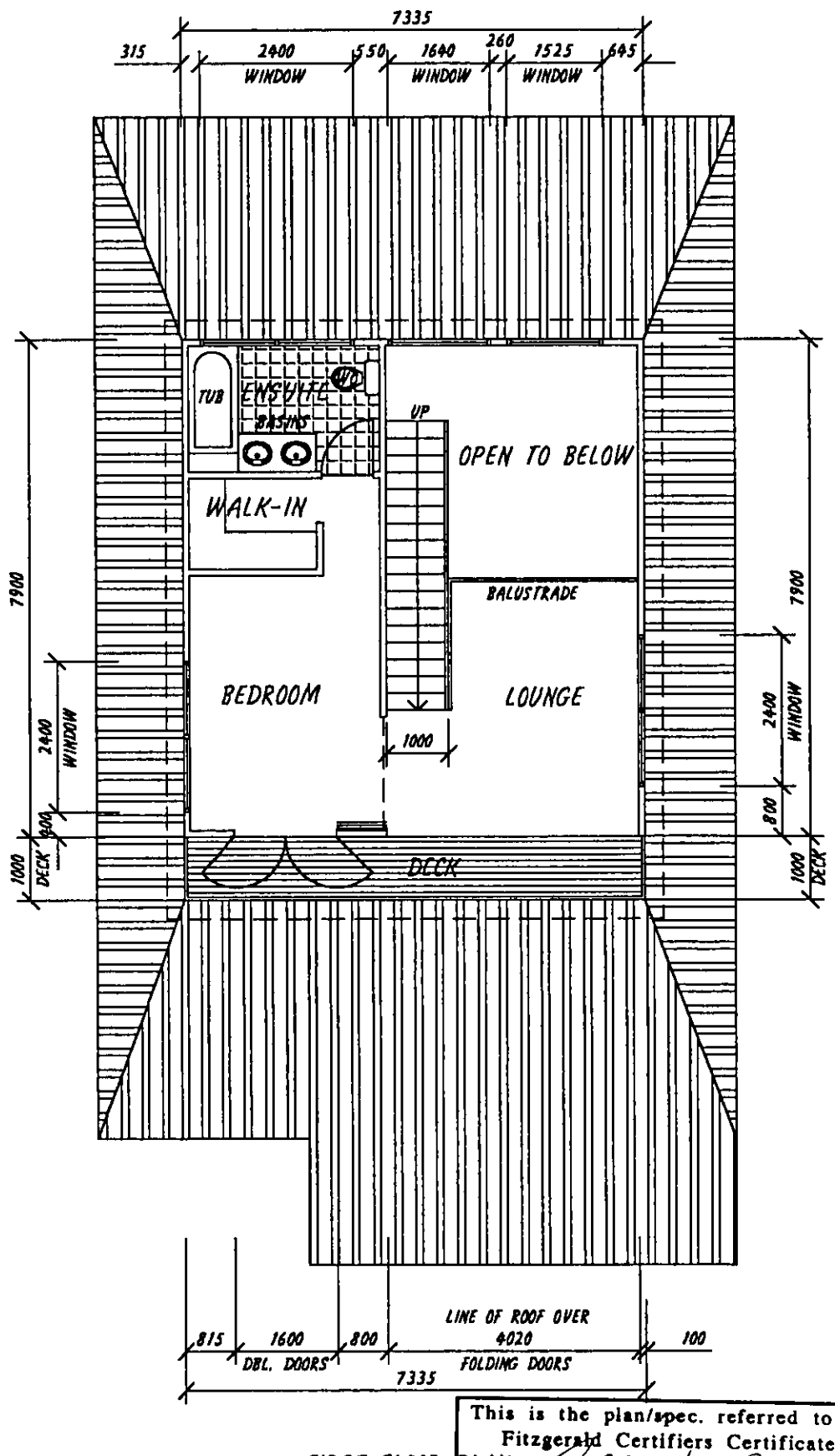
Drawn	Checked	Scale
mcl		1:100 @ A3
Date	Job No	Drawing No / Amend
Nov. 2005		DA-02 / A

A3



1 GROUND FLOOR PLAN

EXISTING WALLS SHOWN SOLID
EXISTING WALLS TO BE
DEMOLISHED SHOWN DASHED



2 FIRST FLOOR PLAN

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate Cert. No. 2007/288

10/5/07

Paul Fitzgerald Accreditation No 117

No	Revision	Date
A	ISSUED FOR COUNCIL	26.01.06

Construction North

design
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Tel: (02) 9948 6311 Fax: (02) 9907 8187

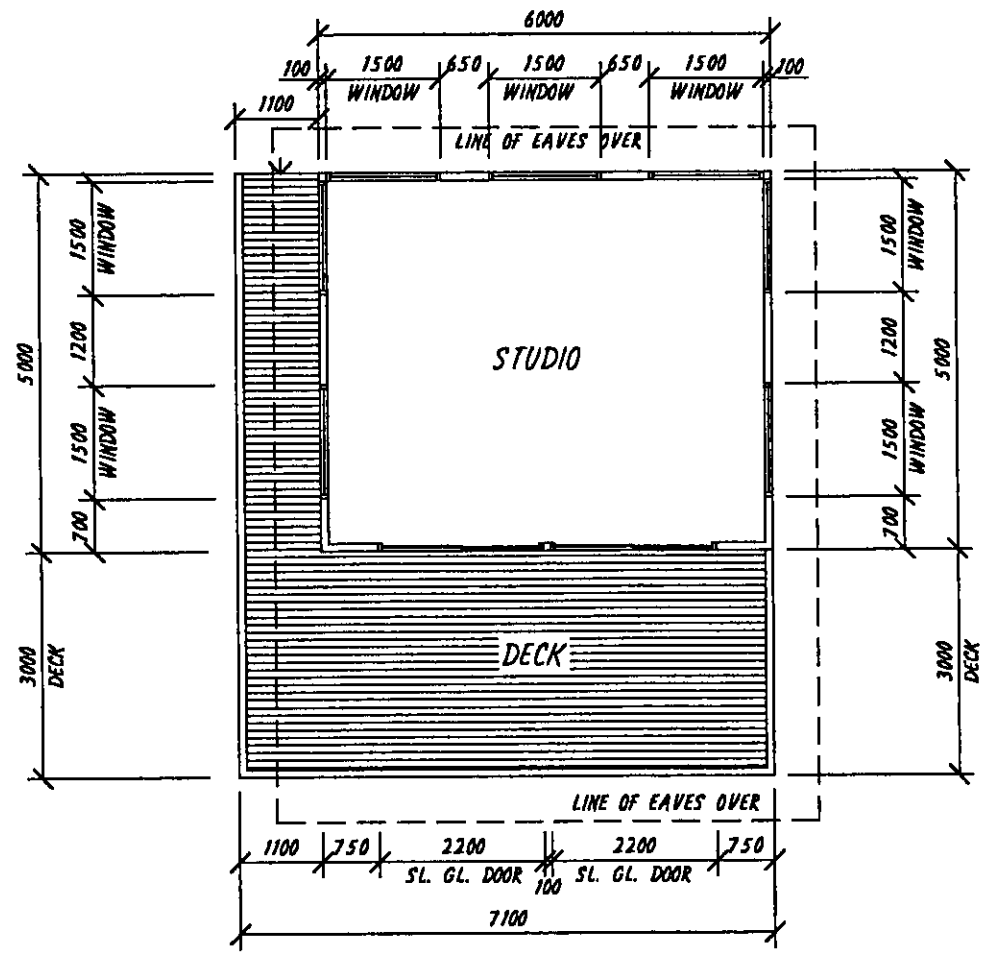
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

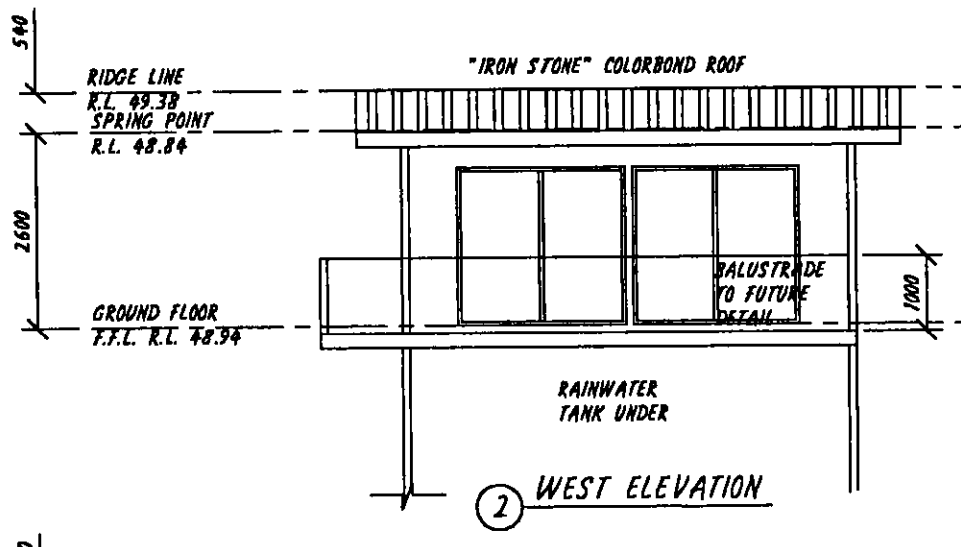
DRAWING
GROUND AND FIRST FLOOR PLANS

Drawn	Checked	Scale	
mcl		1:100 @ A3	
Date	Job No	Drawing No	Amend
Nov. 2005		DA-03	A

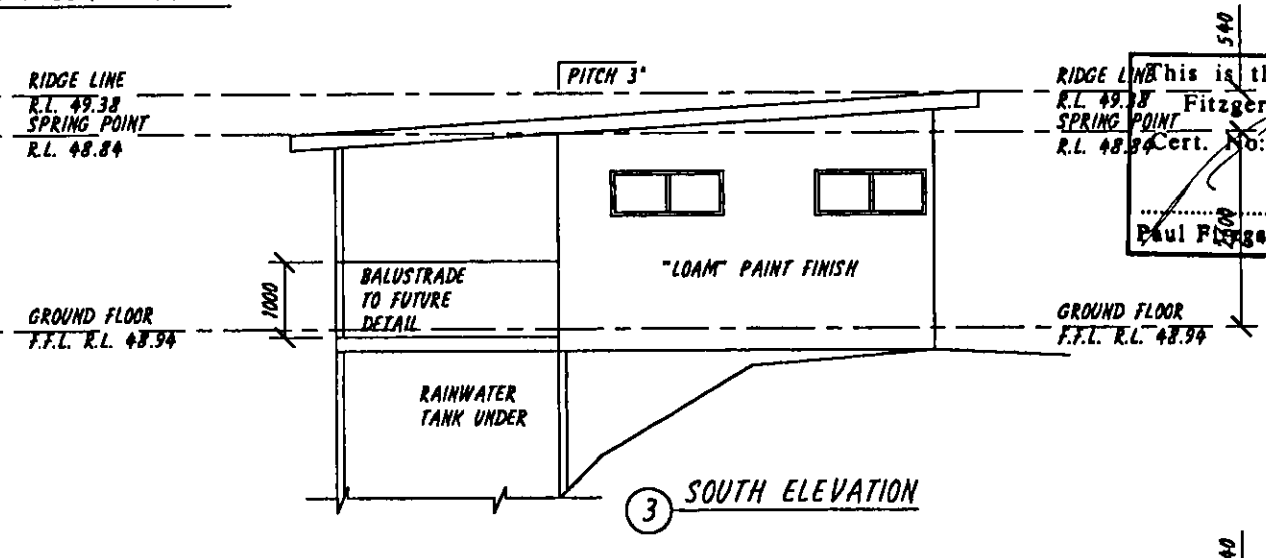
A3



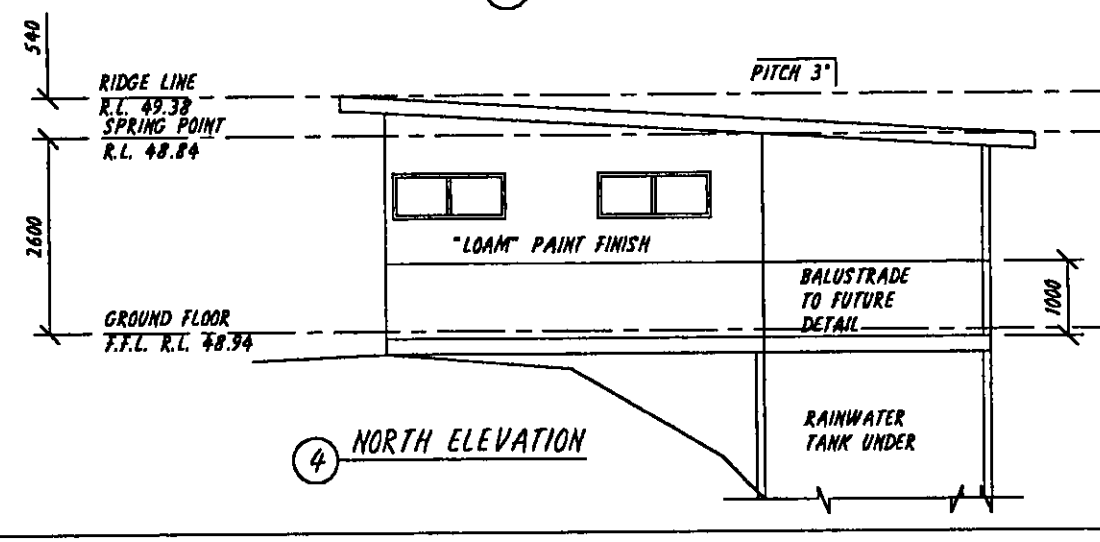
1 STUDIO FLOOR PLAN



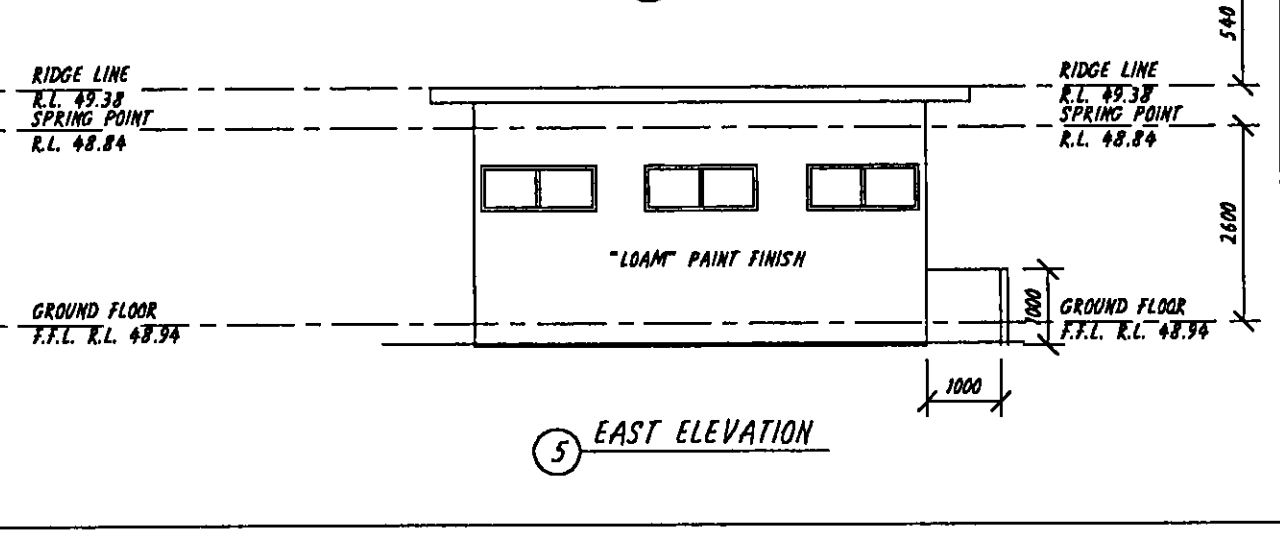
2 WEST ELEVATION



3 SOUTH ELEVATION



4 NORTH ELEVATION



5 EAST ELEVATION

No	Revision	Date
A	ISSUED FOR COUNCIL	26.10.06
B	MINOR REVISIONS DUE TO RELOCATION	04.10.06

FINISHES

ROOF - COLORBOND "PAPERBARK"
MAIN STRUCTURE - "LOAM" PAINT FINISH
WINDOWS - "QUARTZ" FINISH
TRIMS - "QUARTZ" PAINT FINISH

Construction North

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10/5/07
Paul Fitzgerald Accreditation No 117

design
ABN 500 775 23481
Suite 3A, 470 Sydney Rd., Balgowlah NSW 2093
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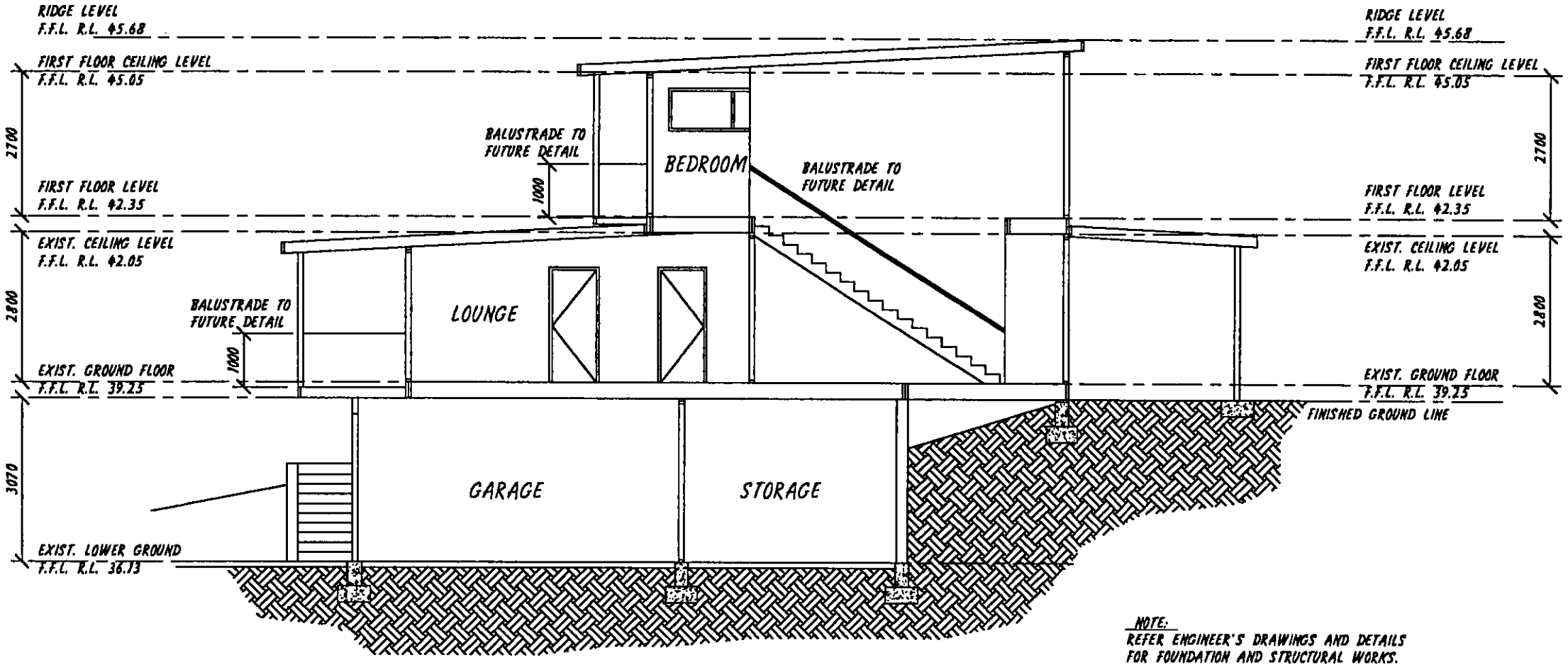
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
New Studio
67 Whale Beach Road
Whale Beach NSW

DRAWING
STUDIO PLAN AND ELEVATIONS

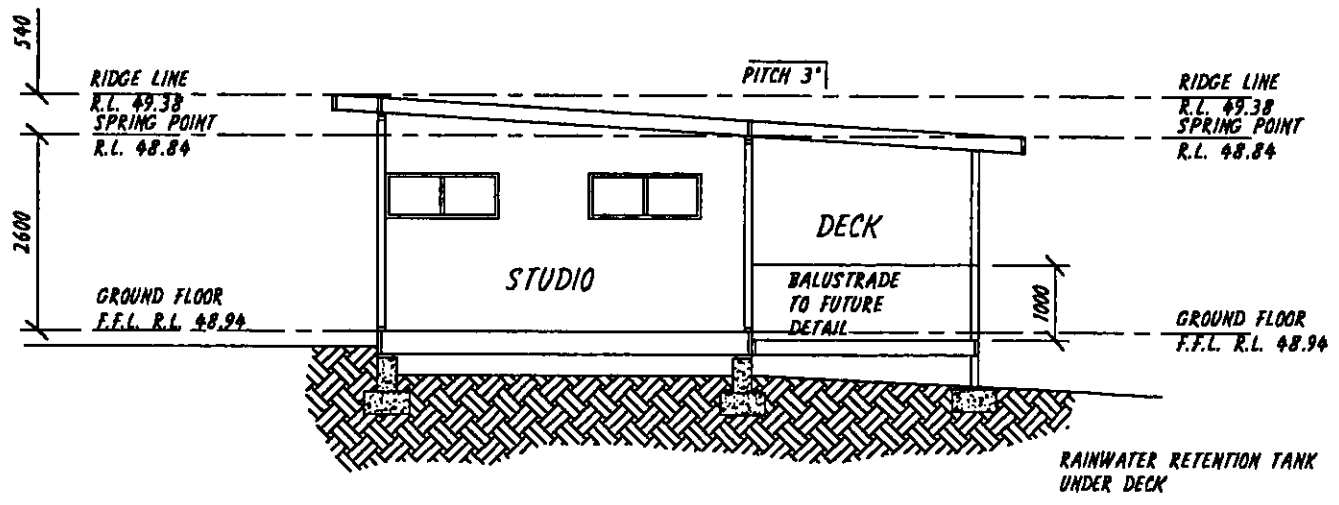
Drawn	Checked	Scale	
mcl		1:100 @ A3	
Date	Job No	Drawing No	Amend
Nov. 2005		DA-04	B

A3



NOTE:
REFER ENGINEER'S DRAWINGS AND DETAILS FOR FOUNDATION AND STRUCTURAL WORKS.

1 HOUSE SECTION



2 STUDIO SECTION

No	Revision	Date
A	ISSUED FOR COUNCIL	28.11.06

Construction North

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Cert. No: 2007/288
10/5/07
Paul Fitzgerald Accreditation No 117

mc design
ABN 500 775 23481
Suite 3A, 479 Sydney Rd., Balgowlah NSW 2093
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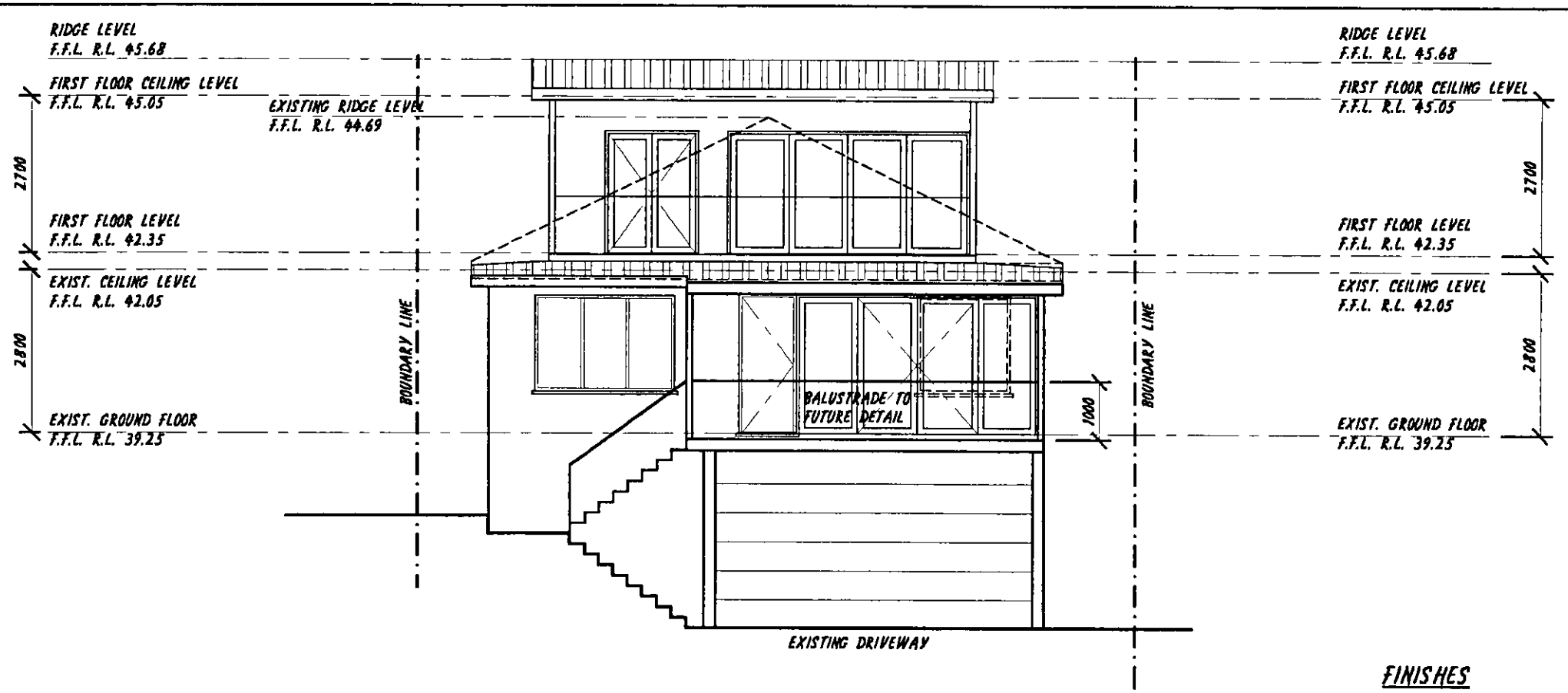
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

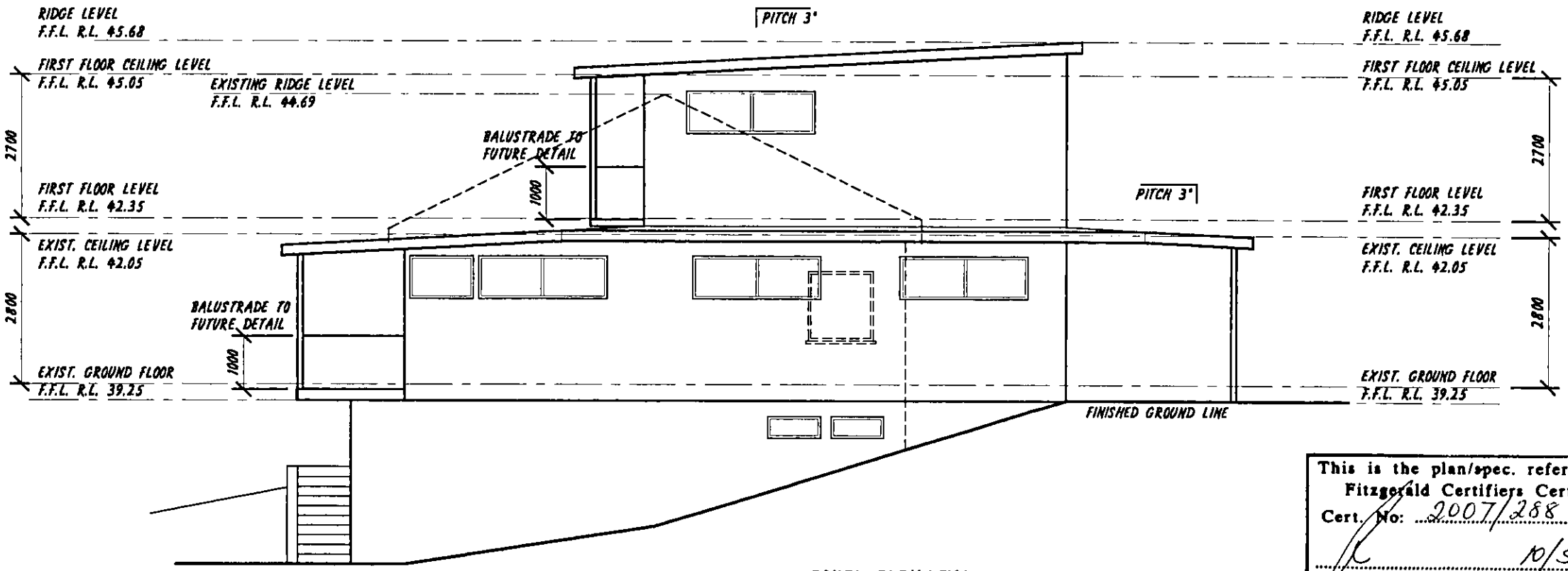
PROJECT
New Studio
67 Whale Beach Road
Whale Beach NSW

DRAWING
STUDIO AND HOUSE SECTIONS

Drawn	Checked	Scale
mcl		1:100 @ A3
Date	Job No	Drawing No / Amend
Nov. 2005		DA-05 / A



1 WEST ELEVATION



2 SOUTH ELEVATION

FINISHES

ROOF - COLORBOND "PAPERBARK"
MAIN STRUCTURE - "LOAM" PAINT FINISH
WINDOWS - "QUARTZ" FINISH
TRIMS - "QUARTZ" PAINT FINISH

No	Revision	Date
A	ISSUED FOR COUNCIL	20.01.06

Construction North

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/5/07
Paul Fitzgerald Accreditation No 117

design
ABN 500 775 23481
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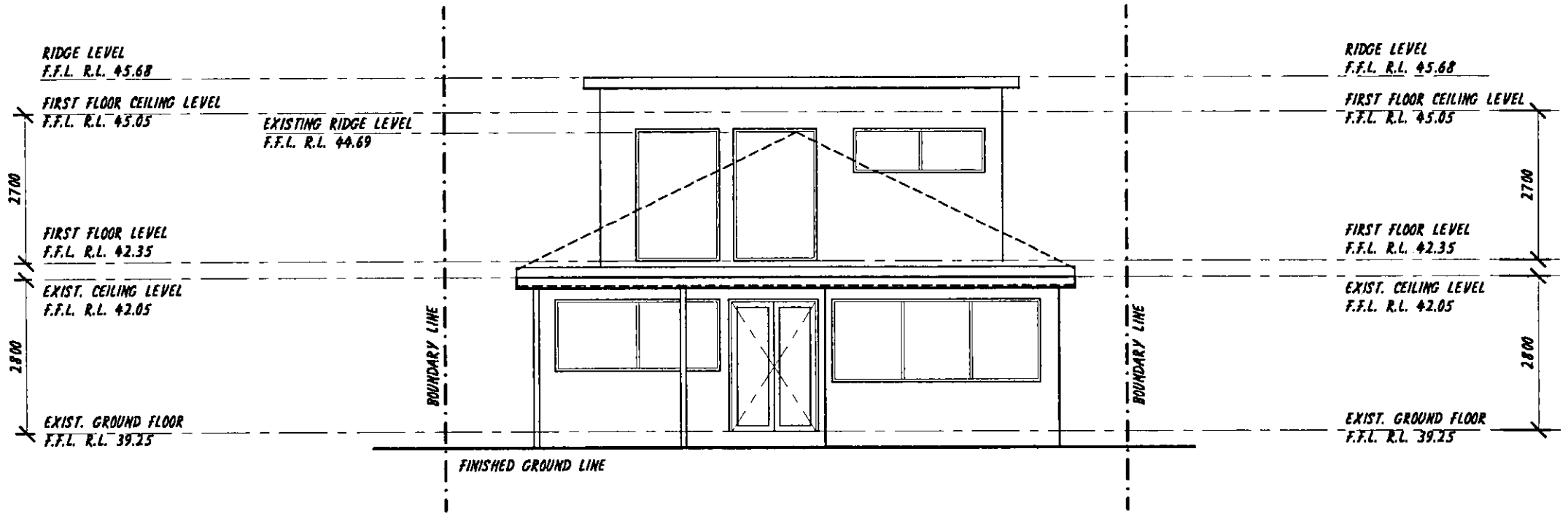
CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

DRAWING
WEST AND SOUTH ELEVATIONS - HOUSE

Drawn	Checked	Scale
mcl		1:100 @ A3
Date	Job No	Drawing No / Amend
Nov. 2005		DA-06 / A

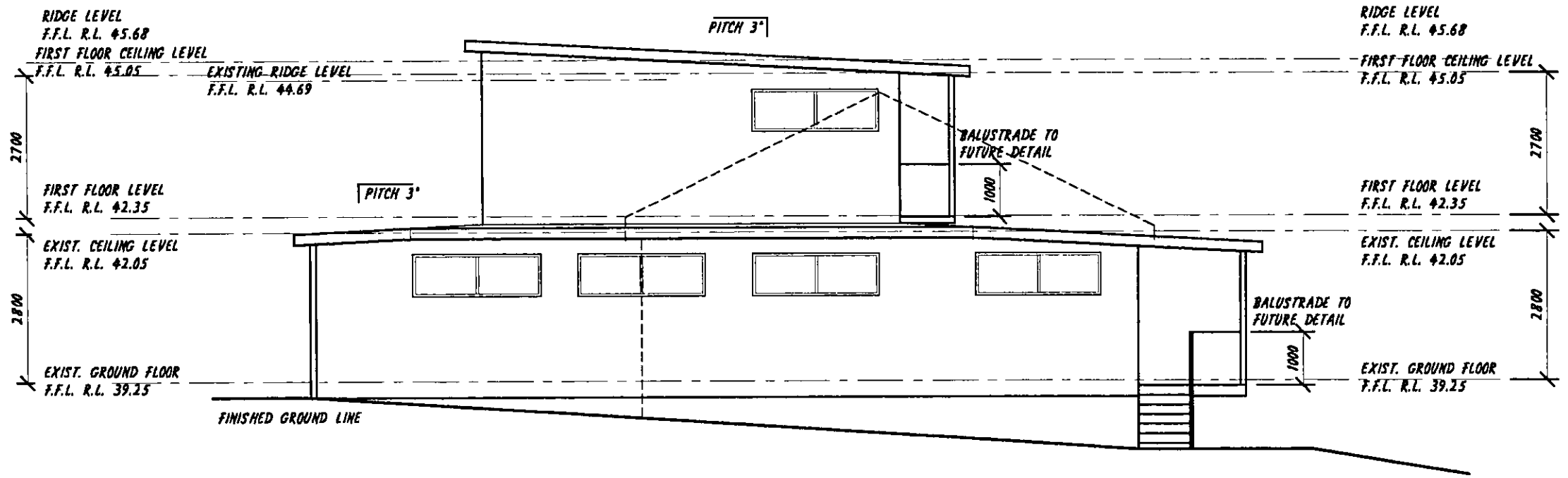
A3



1 EAST ELEVATION

FINISHES

ROOF - COLORBOND "PAPERBARK"
MAIN STRUCTURE - "LOAM" PAINT FINISH
WINDOWS - "QUARTZ" FINISH
TRIMS - "QUARTZ" PAINT FINISH



2 NORTH ELEVATION

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/5/07
Paul Fitzgerald Accreditation No 117

No	Revision	Date
A	ISSUED FOR COUNCIL	20.01.06

Construction North

design
ABN 500 775 23481
Suite 3A, 479 Sydney Rd., Balgowlah NSW 2093
Tel: (02) 9948 5311 Fax: (02) 9907 5157

CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

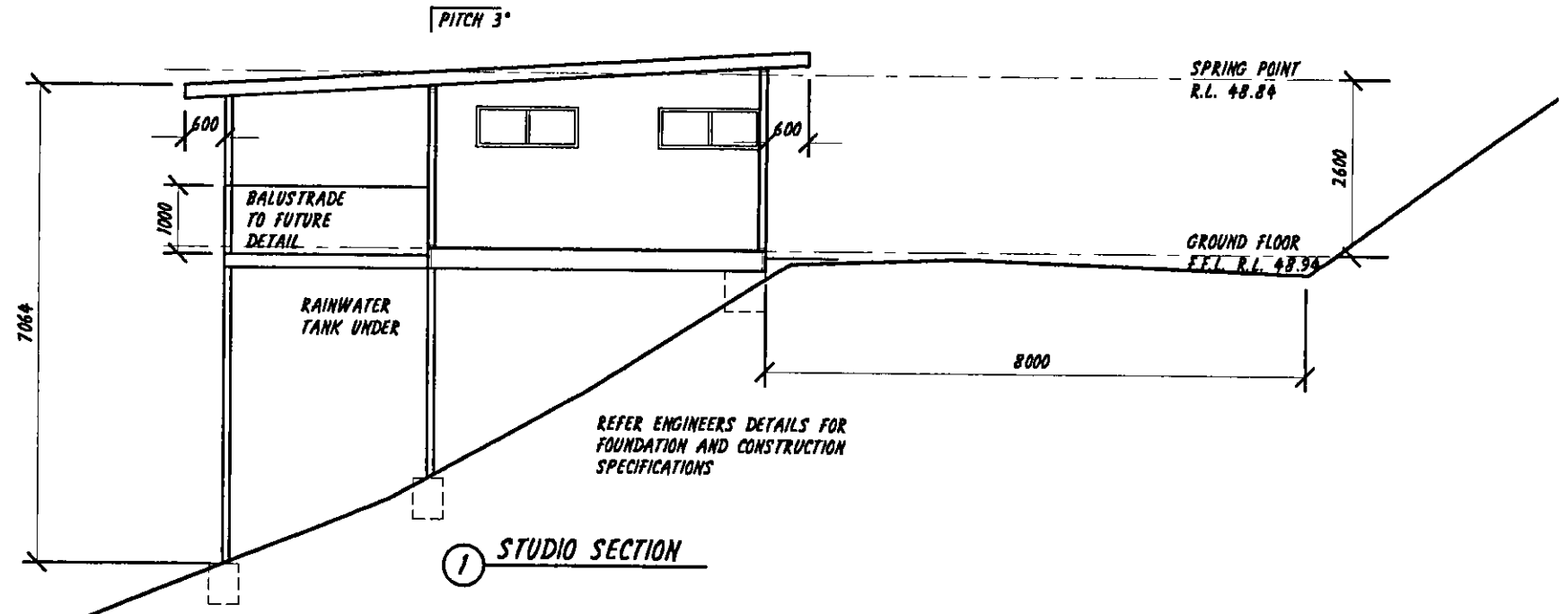
DRAWING
EAST AND NORTH ELEVATIONS - HOUSE

Drawn	Checked	Scale	
mcl		1:100 @ A3	
Date: Nov. 2005	Job No	Drawing No: DA-07	Amend: A

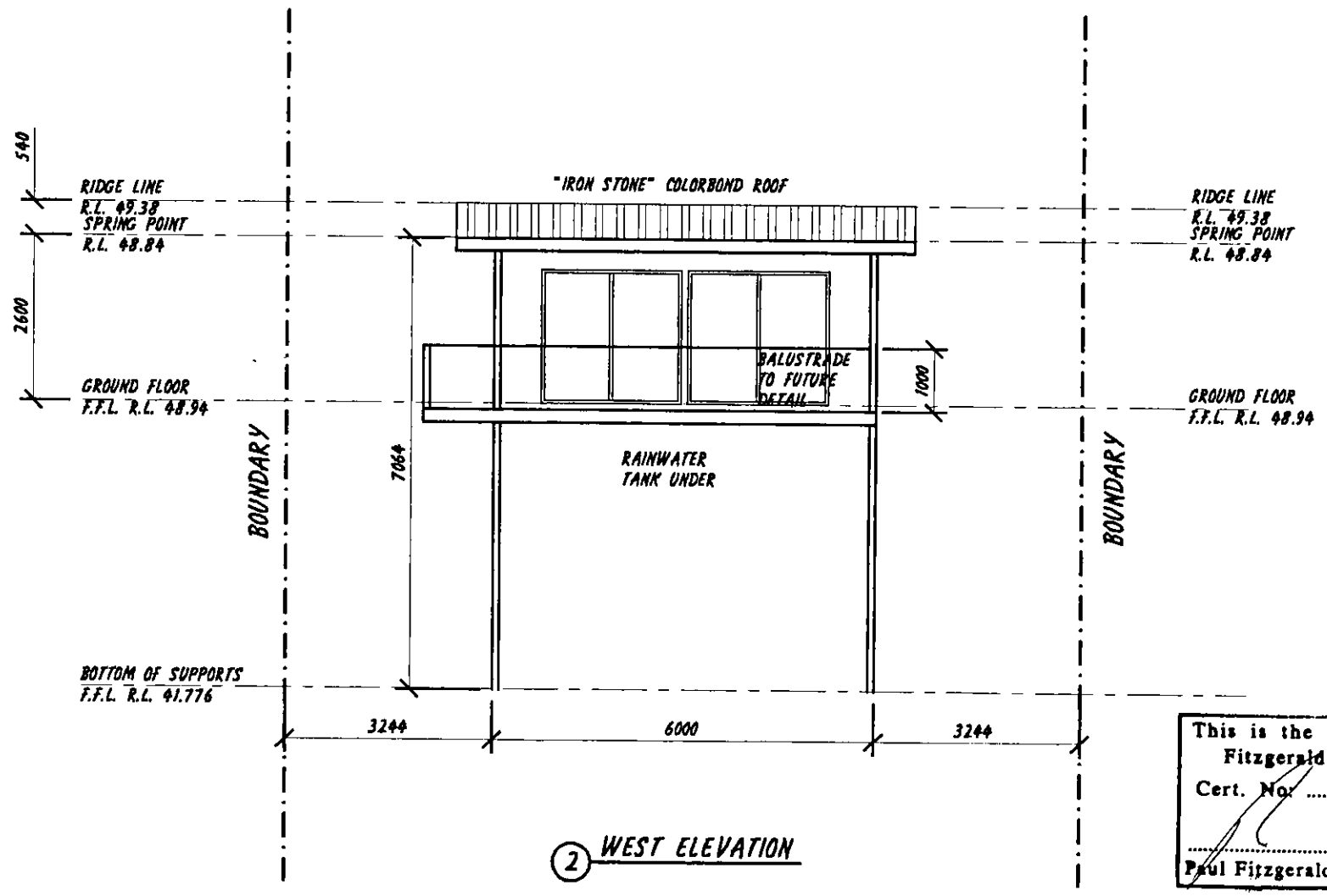
A3

No	Revision	Date
A	ISSUED FOR SECTION 96	04.10.06

Construction North



1 STUDIO SECTION



2 WEST ELEVATION

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/5/07
Paul Fitzgerald Accreditation No 117

mcl design
ABN 500 775 23481
Suite 3A, 470 Sydney Rd., Balgowlah NSW 2093
Tel: (02) 9948 5311 Fax: (02) 9907 8167

CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
New Studio
67 Whale Beach Road
Whale Beach NSW

DRAWING
STUDIO SECTION AND SETBACKS

Drawn	Checked	Scale
mcl		1:100 @ A3
Date	Job No	Drawing No / Amend
OCT. 2006		DA-08 / A

A3

Council Copy

SIMMAT & Associates Pty Ltd
www.simmat.com.au

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate
Cert. No: 2007/288
10/05/07
Paul Fitzgerald Accreditation No 117

Ecological Sustainability Plan

For

Franz Gross

67 Whale Beach Road AVALON

Simmat and Associates Pty Ltd – Freshwater, Australia
QUALITY – ENVIRONMENTAL – SAFETY – MANAGEMENT CONSULTANTS
P.O. Box 505 HARBORD NSW 2096 ABN 85 111 206 618
www.simmat.com.au

ENVIRONMENTAL SUSTAINABILITY POLICY FOR PITTWATER
FORM NO. 3A Requirements for Ecological Sustainability Plan
To be attached to Map

Development Application for FRANZ GROSS
Name of Applicant

Address of site 67 WHALE BEACH ROAD – AVALON

4/5/07

Declaration made by environmental consultant as part of the Ecological Sustainability Plan or Ecological Sustainability Concept Plan

I, KOBI SIMMAT (Insert Name) of SIMMAT + ASSOCIATES PTY LTD (Trading or Company Name)

on this day, the 4 MAY 2007. (Date)

certify that I have completed the following as marked:

Site Plan

The following check sheet is to be completed and attached to the Map for the Ecological Sustainability Plan or Ecological Sustainability Concept Plan

Annotated plan showing the following	Completed (✓)
All areas of native vegetation	✓
Native trees include species, size, condition (e.g. SULE rating) Accurate survey and describe native trees within 5m of proposed works	✓
Trees to be retained and those to be modified/removed	✓
Areas with medium to high regeneration potential	✓
Areas of native vegetation to be retained	✓
Areas of vegetation proposed to be removed	✓
Areas of ~~Noxious~~ and Environmental Weeds	✓
Areas of habitat features, bushrock (over 2m), caves, termite mounds etc	—
Footprint of house and associated works (fuel reduced zones, waste-water etc)	✓
Areas for exclusion fencing–during development/establishment phase	✓
Areas appropriate for storage of materials during construction	✓
Recommended access ways during construction	—
Areas for bush-regeneration	—
Areas for planting trees (if appropriate)	✓
Areas for planting low and or mid strata	—
Areas for landscaping	✓
Fuel reduced zone	✓
Fuel free zone	—
Waste-water disposal zone	—
Recommended Environmental Protection Zone (EPZ) *if appropriate*	—
Areas for managing domestic animals (see requirements of Pittwater Council Control Documents *Pittwater 21*)	✓
Wildlife Corridors and Core/Fragmented Bushland (as per Pittwater Council Maps)	—

ENVIRONMENTAL SUSTAINABILITY POLICY FOR PITTWATER
FORM NO. 3b Ecological Sustainability Plan (report)
To be attached to inside front cover of ESP Report

Development Application for FRANZ GROSS
Name of Applicant

Address of site 67 WHALE BEACH ROAD - AVALON

Declaration made by environmental consultant as part of the Ecological Sustainability Plan

I, KOBI SIMMAT of SIMMAT + ASSOCIATES PTY LTD.
(Insert Name) (Trading or Company Name)

on this day, the 4 MAY 2007 certify that I have completed the following as marked: 4/5/07

The following is to be completed and attached to the inside front cover of the Ecological Sustainability Plan.

Report covering	Completed (✓)
Site Preparation Description of: ▪ Tree, vegetation and habitat protection, ▪ Sediment and erosion control for natural features, ▪ Weed control, ▪ Top soil/ litter layer treatment, ▪ Surface treatment and stabilisation (mulch etc), ▪ Site drainage with respect to natural features,	✓ ✓ ✓ ✓ ✓ ✓
Weed Removal and Regeneration ▪ List of ~~Noxious~~ and Environmental Weeds	✓
▪ Timeline for removing Noxious Weeds and controlling/removing Environmental Weeds (*for updated weeds list see Dept of Agriculture web page*). Timeline to include the area / number of weed species acceptable as a background level. Cross reference location with Map.	✓
Description of Planting (if planting) ▪ Planting aims, e.g. supplementary planting in a regeneration area, or a native vegetation area or planting in a landscape area.	✓
▪ Species list recommended for planting–as appropriate (if the ESP is replacing a Landscaping Plan give details of species to be planted and size range / species). Local native species to be used (for at least 70% of plantings, 80% in Endangered Ecol. Comm.). Identify source of local native, plant stock.	✓ COUNCIL LIST
▪ Description of areas for bush regeneration, trees to be retained, trees to be planted (and what size), etc	✓
▪ A schedule of materials–including elements such as weed matting, mulch, edging, walling, paving and fencing.	✓
▪ Description of works meeting minimum requirements of Landscaping Policy (i.e. 50% of development screened in 3 yrs).	—
Long-term Management ▪ Management of habitat features, including protection during construction and for the life of development. Also include the provision of nesting boxes etc as appropriate. Maintenance period for 12 to 24 months after Issue of Occupation Certificate. NB maintenance can be by land occupier.	✓
▪ Indicate areas that are to be maintained as 'bushland' for the life of the development	✓
▪ Description of exclusion areas for domestic animals *as relevant*	✓
▪ Reference to other documents if relevant (e.g. frequency and type of fuel reduction, care for on-site water disposal system)	✓
Check-sheets listing activities to be completed on an on-going basis.	
▪ List of ~~Noxious Weeds~~ to be managed/removed (at all times).	—
▪ List of Environmental Weeds to be managed/removed (all times).	✓
▪ Area of native vegetation and trees to be maintained/retained.	✓
▪ Area from which domestic animals are not permitted.	✓

SIMMAT
& Associates Pty Ltd
www.simmat.com.au

Ecological Sustainability Plan

Prepared for Franz Gross

by
Simmat and Associates Pty Ltd
P.O. Box 505
Harbord NSW 2096
Telephone (02) 9905 5531 Fax (02) 9939 5635

Document Control		
Date	Status	Author
2 May 2007	Draft	KS / NL
4 May 2007	Ext Issue	KS

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& Associates Pty Ltd
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Plan Contents

Simmat and Associates Pty Ltd - Freshwater, Australia
QUALITY - ENVIRONMENTAL - SAFETY - MANAGEMENT CONSULTANTS
P.O. Box 505 HARBORD NSW 2096 ABN 85 111 206 618
www.simmat.com.au

Plan Scope

The Plan is required to be read in conjunction with Appendix 1 – *Ecological Sustainability Site Plan Drawing Number #FG-S&A07*

Simmat and Associates Pty Ltd (S&A) were engaged by Franz Gross to prepare the attached Ecological Sustainability Plan (ESDP), for the approved alterations and additions to the existing residence at 67 Whale Beach Road Avalon.

In response to the requirements outlined below Simmat and Associates Pty Ltd have conducted both a desk top and site based investigation to assess the significance of construction and ongoing maintenance related environmental aspects of the works to be undertaken and the subsequent significant environmental impacts. Where environmental impacts have been deemed to be significant or where required by Pittwater council or consultants advising on the development application, that has subsequently been approved, environmental management controls have been defined and instructed in the attached report.

This report has been complied to address the following requirements;

- *Pittwater Council Form 3a*
- *Pittwater Council Form 3b*
- *Statement of Environmental Effects prepared by NB Design 23 January 2007*
- *Planning for Erosion and Sediment Control on Single Residential Allotments - 1st Edition, Landcom NSW (Blue Book)*

Introduction

The following plan outlines the essential environmental controls and activities required for the duration of excavation, construction, ongoing maintenance and re-stabilisation works associated with the approved alterations and additions to the existing residence, and construction of detached studio at 67 Whale Beach Rd Avalon NSW.

In order to ensure that adequate provision has been made to the implementation of action items and ongoing maintenance and management of environmental controls with respect to the construction and ongoing management and maintenance of the premises and the site. Each element of the report has tabled required works, completion dates and owner-builder self certification that the works have been undertaken and implemented is required to be completed by Franz Gross.

Site Preparation

Tree Vegetation and Habitat protection

As defined by *"Growing my Way"* tree management recommendations December 2006, 5 tree specimens have been identified to be potentially impacted upon on the rear of the site.

1) Glochidion Ferdinandi – Cheese Tree

Stairs to the proposed studio are to be suspended over the 2m Critical Root Zone (CRZ). A tree guard shall be installed in accordance with the "Growing my way" generic tree guard diagram" and placement of mulching in the localised area.

2) Corymbia gummifera – Red bloodwood

Potentially impacted upon with excavation for water tanks under the studio. The clients intention is to retain this tree. Recommendations by *"Growing My Way"* are for removal, or if retained the installation of a tree guard and placement of localised mulching.

3) Allocasuarina littoralis – Black Sheoak

Potentially minor impacts, to be managed with minor pruning (10%), installation of Tree Guarding, and mulching of the root zone.

4) Corymbia gummifera – Red Bloodwood

Is within the foot print of the studio construction as is to be removed. The owners have elected to replace three #4 with an established seedling of the same species.

5) Pittosporum undulatum – Native Daphne tree (or Victorian Box)

Is within the footprint of the proposed studio. Should it be able to be retained during the set-out of the studio it will require guarding and mulching of the CRZ. In leiu of being retained the client has nominated it is to be replaced with an established juvenile seedling of species variety *Eucalyptus haemastoma* during the landscaping phase of the project after the construction phase has finished.

Sediment and Erosion control for natural features

The following construction has been approved by Pittwater council for the site,

- Alterations and additions to the existing dwelling
- Construction of a studio to the rear of the property

The proposed alterations and additions will include site disturbance for the excavation of footings. With the limited site disturbance caused by detailed hand excavation of pier holes the potential risk of sedimentation in a heavy rain event is the likelihood of erosion is considered to be low. In addition

there will be no stockpiling of civil construction materials so the risk of wind erosion and dust pollution in a significant wind event is also considered to be low.

The soils recorded on site from our previous experience in the area are typically sandy-loam underlain by a clay-loam or major obstruction of sandstone rock. This has been confirmed for the site

The soils in the area are categorized as Level 1 – Soil Dispensability, where well maintained and appropriately installed stormwater diversions and sediment fences will provide protection from sediment laiden water discharges from the site.

When kept damp these soils retain a low risk for dust emissions from the site in the event of a significant wind event.

The proposal does not include any change to existing cut and filling on site. Detailed excavation for the extensions to the dwelling and construction of the studio are proposed to be returned to natural ground levels

Weed Control

No significant intrusions of weeds identified in the *Pittwater Council A-Z list of weeds* have been identified. During the construction and subsequent landscaping and site maintenance processes weed management is proposed to include the methodology as defined by Pittwater council @ http://www.pittwater.nsw.gov.au/environment/plants__and__animals/noxious_weeds/control_techniques

"The plant should be small enough to ensure the entire root will be removed, or the plant should not be able to re-sprout from any remaining root system.

Tools and Equipment

Gloves, knife, hand trowel or similar.

Procedure

Rake back ground mulch

Insert knife or similar tool and loosen the soil around the plant roots. Keep soil disturbance to a minimum

Grasp the stems or leaves of the plant at ground level and pull while freeing the roots with the knife

Remove the plant and shake off excess soil

Replace disturbed soil and any ground mulch

Top / Soil little layer treatment

The detailed excavation for the additional footings will not generate a requirement for material stockpiling. Materials excavated by hand from footings will be stored adjacent to excavation areas and be returned to the excavated pits on completion for re-stabilisation of the site. Where surplus materials exist after the completion of the construction works, they will be removed from site with the construction waste.

The proposal does not include filling activities with surplus material.

Surface treatment and stabilisation

It is proposed that erosion and sediment will be controlled with the following measures

For Water Borne Erosion and Sedimentation

- Installation of an upslope swale, covered with Geo Fabric or mulch as applicable.
- Installation of sediment control fences around detailed excavation areas or the erection of a single sediment fence on the down slope of the detailed excavation area and upslope of the vegetation buffer.
- Upon completion of excavation the immediate stabilisation of the site with applicable surface treatments including mulching, replanting, or paved surfaces with drainage controls.

For Air Borne Erosion

- In periods of dry weather and high winds, the application of a light water spray to the detailed excavation areas and any other area of soil disturbance

See attachment 1 – Ecological Sustainability Plan for the location of proposed erosion and sediment control measures. Drawing Number #FG-S&A07

The site is currently landscaped, and accommodates a valuable diversity of un-disturbed vegetation to the rear. The detailed excavation and additions to the existing residence, seeks to protect and enhance where possible this valuable asset to the site. The detailed excavation is to be done by hand to ensure minimal disturbance to these areas. No intrusions are proposed for the undisturbed rear of the site.

On the completion of the construction works it is proposed that the areas of disturbance will be returned to their pre-construction state with landscaping works being implemented by the site owners

Site Drainage with respect to natural features

Existing overland stormwater flow paths have not been defined. It is proposed that overland flow paths after the completion of the proposed construction works will include drainage control on the upslope of the studio by way of collection troughs or pits and laid stormwater lines down the southern boundary to the western boundary of the property. All stormwater collected on paved surfaces will be controlled and directed to collection pits where required

All rain water collected from the roof is stored in the onsite water tanks for domestic resuse purposes. The proposed additions to the roof of the dwelling will add to the water collection capacity of the premises and thus reduce the runoff potential.

	Site Prep - Required Works	Completion Date	Name / Sign off
1.	Tree #1 - Install tree guard protection and mulching		
2.	Construct suspended staircase over CRZ for Tree #1		
3.	Minor pruning to tree #1 (10%)		
4.	Tree #2 - Install tree guard protection and mulching if not removed		
5.	Tree #3 - Install tree guard protection and mulching		
6.	Tree #4 – Remove		
7.	Replace Tree #4 with established seedling Corymbia gummifera – *Red Bloodwood* on completion of construction		
8.	Tree #5 – Remove		
9.	Replace Tree #5 with Eucalyptus haemastoma (Scribly Bark)		
10.	Notify PCA of Intention to commence building works		
11.	Install sediment fence(s) along the down slope of detailed excavation areas. Cover excavated materials with geo-fabric or similar material for longer periods of storage prior to relocation on or off the site		
12.	Divert up-slope water around the work site and appropriately stabilise any drainage channels, with swale and mulch		
13.	Notify Pittwater Council or PCA that sediment controls have been installed		
14.	Clear only those areas necessary for building work to occur.		
15.	Stockpile excavated materials only within the sediment-controlled zone.		
16.	Stabilise exposed earth banks eg. With vegetation, erosion control blankets, geo fabric.		
17.	Install on-site waste receptacles eg. bins, or cages. These should be covered to prevent waste being moved by wind.		
18.	Commence building activities.		
19.	Install roof downpipes and stormwater collection pits and drains as soon as practicable after hard surfaces including the roof are laid.		
20.	Maintain all control measures in good working order, on a daily basis and after significant events of rain and wind		
21.	Revegetate or otherwise stabilise the site as soon as possible during or after the completion of the construction works		

Weed Removal and Regeneration

List of Noxious and Environmental weeds

No Noxious weeds have been identified on the site

With regard to environmental weeds the following have been identified on the site;

Agapanthus orientalis – Agapanthus

Nephrolepis cordifolia – Fishbone fern

It is proposed the while these examples of environmental weeds are located well below the proposed construction zone of the studio and the undisturbed native bushland areas of the site, they are to be controlled and removed where possible with the following methodologies as prescribed by Pittwater Council;

Agapanthus - http://www.pittwater.nsw.gov.au/environment/plants_and_animals/noxious_weeds/herbs/agapanthus

Fishbone fern - http://www.pittwater.nsw.gov.au/environment/plants_and_animals/noxious_weeds/herbs/fishbone_fern

Timeline for weed management

The timeline for weed management is ongoing for the prescribed life of the construction phase of the project and during the initial landscaping phase of the project. On completion of the landscaping and during the establishment and maintenance of the garden on the property, environmental weed control will be at the digression of the property owner at the time or as directed by the appropriate regulatory authority, under the *Noxious Weeds Act 1993*

	Weed Removal - Required Works	Completion Date	Name / Sign off
22.	Agapanthus to the rear of the property identified and removed as required		
23.	Asparagus Fern controlled to avoid infestation of the native bushland areas of the property		
24.	Asparagus Fern removed where possible from ongoing landscaping works on the property		

Description of Planting

Planting Aims

The aim of the landscaping and Ecological Sustainability Plan for the site is consistent with the Pittwater Policy on native planting and biodiversity -;

"Maintaining the genetic integrity of bushland on public and private land can be achieved by:

- *promoting natural regeneration*
- *using plant material that has been sourced from within Pittwater*
- *removal of 'native' species which are non-indigenous to the Pittwater area"*

Species list recommended for planting

Species recommended for planting within the site and as identified in the Ecological Sustainability plan are identified in the appendices of this report and specifically referenced from;- *Pittwater Council fact sheet – Native Planting for 1. Sandstone Crests*

Description of areas for bush regeneration

No areas on the site have been identified for bush regeneration. The rear of the site has been identified for access control and maintenance as an undisturbed native sandstone Crest vegetation area.

Schedule of materials

With regard to a schedule for materials the following is be required for installation of environmental controls;

A) Tree guard materials as defined by *"Growing My Way" – "Generic Tree Guard Detail"*
B) Sediment control fencing material for the down slope of the soil disturbance areas
C) Sediment control untreated timber stakes
D) Geo-fabric and / or slope stabilisation material for areas of sloped soil disturbance
E) Mulch in the volumes required for 50 – 100mm cover. Mulch should be locally sourced and verified to ensure only native trees and shrubs were used as raw materials in the chipping or commercial composting of the product.

Landscape Policy requirements

50% Screening requirements for the development are not applicable as the approved alterations and additions are not visible as a component of the streetscape for Whale Beach Road.

In support of screening of the property in general the owners of the premises are proposing mature tree plantings in the front yard of the property utilising species from the list of *Sandstone Crests* in the appendices.

	Planting - Required Works	Completion Date	Name / Sign off
25.	Landscaping includes species listed on the prescribed list for Sandstone Crests		
26.	Mulch is of native species origin and is not contaminated with exotic species.		

Long term Management

Management of Habitat features

With regard to the management of habit features, these will be affected in part by the requirements for maintaining of a Bushfire control inner protection area requirements.

Indicated areas of Bushland

Undisturbed natural bushland areas on the site have been identified on the attached Ecological Sustainability Plan drawing number #FG-S&A07 included in the appendices of this report.

Domestic Animals exclusion areas

There are currently no domestic animals residing on the property, while potential habitats of Pittwater LGA identified threatened species may exist on the site the areas of natural bushland and the need for exclusion areas on the site is considered to be a minor requirement. As such the requirement of the owners of the property to maintain controls of domestic pets visiting the site will be their responsibility and should the need for permanent controls be required it would be recommended to install an appropriate fence on the upslope of the proposed studio for the containment of dogs. With regard to cats it is recommended that they do not reside within the property, the location of this fence has been determined on drawing number #FG-S&A07

Fuel Reduction Program

Fire Based Consulting Pty Ltd, have made recommendations for fire risk reduction controls during construction, and in the ongoing management and maintenance of the property. Specifically Fire *Based Consulting Pty Ltd* has nominated the need for an *IPZ.*

	Long Term Management -Required Works	Completion Date	Name / Sign off
27.	Domestic Animal exclusion – minimisation of domestic cats on the site where possible		
28.	Prevent access of domestic animal to the upslope natural bushland areas of the property		
29.	Maintain natural bushland within 10m to the east of the studio in a fuel reduced condition, annual maintenance should be completed annually before each fire season.		
30.	Ensure construction standards prescribed by AS 3959 are met as applicable in the construction of the studio and alterations and additions to the dwelling.		
31.	External Timbers installed are fire retardant or designated species		
32.	New fencing is non-combustible		
33.	Gutter guards have been installed (AS3959)		
34.	Unobstructed access path has been defined and is clear		

Authorised by
Kobi Simmat
Managing Director
Simmat and Associates Pty Ltd
Freshwater – Australia

End of Planning Document.

Check sheets to be completed

Appendix 1 – Drawing Number FG-S&A07 – Ecological Sustainability Plan

Appendix 2 - Ecological Sustainability Checklist

Appendix 3 - Erosion and Sediment Control inspections

Appendices

Appendix 1 – Drawing Number FG-S&A07 – Ecological Sustainability Plan

No	Revision	Date
A	ISSUED FOR COUNCIL	20.01.06
B	RELOCATED STUDIO TOWARD HOUSE	04.10.06
C	Ecological Sustainability Plan	06.05.07

Note ;
"sandstone crest" landscape zone.

Note ;
2m Suspended stairs.

Note ;
"Bushfire fuel reduction zone".

Note ;
Drainage Swale.

WHALE BEACH ROAD

METAL CLAD RESIDENCE NO. 69

27000

10000

1246 EXIST.

1015 EXIST.

EAVE 4541

RAINWATER RETENTION BLADDER TO UNDER EXISTING HOUSE

8234 EXISTING

15'

12.495

193°

HOUSE

103° 15' 30" 88.54

ACCESS TO STUDIO TO FUTURE DETAIL

RAINWATER RETENTION TANK UNDER DECK

NEW STUDIO

3244

LOT 155
D.P. 17189

NEW CANCRETE DRIVEWAY

P.POLE

283° 15' 30" 82.00

GARAGE UNDER TERRACE

BALC 51.39

IMITATION TIMBER CLAD RESIDENCE NO. 65

Construction North

1845 EXIST.

2845

CONCRETE DRIVEWAY

EXISTING KERB AND GUTTER TO REMAIN - NO WORKS

1 DP 203362

NOTE:
REFER SURVEY DRAWINGS FOR CONTOURS.

Legend

A. Tree guard + mulch
B. Sediment fence
C. Domestic pet fence
D. Remove fish bone fern
E. Drainage swale
F. Construction waste zone
G. Mature seedling planting for replacement of removed trees (client selection)
H. Sandstone crest
I. Bushfire fuel reduction zone

SIMMAT & Associates Pty Ltd

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CLIENT
Sam and Sema
67 Whale Beach Road
Whale Beach NSW

PROJECT
Alterations and Additions
67 Whale Beach Road
Whale Beach NSW

DRAWING
Ecological Sustainability Plan

Drawn	Checked	Scale	
DS	KS	1:200 @ A3	
Date	Job No	Drawing No	Amend
May 07		FG-S&A07	C

A3

Appendices

Appendix 2 - Ecological Sustainability Checklist – page 1

	Site Prep - Required Works	Completion Date	Name / Sign off
35.	Tree #1 - Install tree guard protection and mulching		
36.	Construct suspended staircase over CRZ for Tree #1		
37.	Minor pruning to tree #1 (10%)		
38.	Tree #2 - Install tree guard protection and mulching if not removed		
39.	Tree #3 - Install tree guard protection and mulching		
40.	Tree #4 – Remove		
41.	Replace Tree #4 with established seedling Corymbia gummifera – *Red Bloodwood* on completion of construction		
42.	Tree #5 – Remove		
43.	Replace Tree #5 with Eucalyptus haemastoma (Scribly Bark)		
44.	Notify PCA of Intention to commence building works		
45.	Install sediment fence(s) along the down slope of detailed excavation areas. Cover excavated materials with geo-fabric or similar material for longer periods of storage prior to relocation on or off the site		
46.	Divert up-slope water around the work site and appropriately stabilise any drainage channels, with swale and mulch		
47.	Notify Pittwater Council or PCA that sediment controls have been installed		
48.	Clear only those areas necessary for building work to occur.		
49.	Stockpile excavated materials only within the sediment-controlled zone.		
50.	Stabilise exposed earth banks eg. With vegetation, erosion control blankets, geo fabric.		
51.	Install on-site waste receptacles eg. bins, or cages. These should be covered to prevent waste being moved by wind.		
52.	Commence building activities.		
53.	Install roof downpipes and stormwater collection pits and drains as soon as practicable after hard surfaces including the roof are laid.		
54.	Maintain all control measures in good working order, on a daily basis and after significant events of rain and wind		
55.	Revegetate or otherwise stabilise the site as soon as possible during or after the completion of the construction works		

Appendices

Appendix 2 - Ecological Sustainability Checklist – page 2

	Weed Removal - Required Works	Completion Date	Name / Sign off
56.	Agapanthus to the rear of the property identified and removed as required		
57.	Asparagus Fern controlled to avoid infestation of the native bushland areas of the property		
58.	Asparagus Fern removed where possible from ongoing landscaping works on the property		
	Planting - Required Works	**Completion Date**	**Name / Sign off**
59.	Landscaping includes species listed on the prescribed list for Sandstone Crests		
60.	Mulch is of native species origin and is not contaminated with exotic species.		
	Long Term Management -Required Works	**Completion Date**	**Name / Sign off**
61.	Domestic Animal exclusion – minimisation of domestic cats on the site where possible		
62.	Prevent access of domestic animal to the upslope natural bushland areas of the property		
63.	Maintain natural bushland within 10m to the east of the studio in a fuel reduced condition, annual maintenance should be completed annually before each fire season.		
64.	Ensure construction standards prescribed by AS 3959 are met as applicable in the construction of the studio and alterations and additions to the dwelling.		
65.	External Timbers installed are fire retardant or designated species		
66.	New fencing is non-combustible		
67.	Gutter guards have been installed (AS3959)		
68.	Unobstructed access path has been defined and is clear		

Appendices

Appendix 3 - Erosion and Sediment Control inspections

EROSION AND SEDIMENT CONTROL DAILY SITE CHECK LIST

Best Practice guidelines for the *Control of Stormwater Pollution from Building Sites*

Location of site _____

Site Supervisor _____

It is suggested that the site supervisor completes the following checklist daily while site work occurs.

ITEM AND/OR LOCATION TO CHECK	TIMING			
	Start of works	Each day – throughout the duration of works	Roof laid	Completion
If required, has an Erosion and Sediment control management plan been prepared and approved? • Are all contractors and subcontractors aware of the contents of this plan?				
Is the builder's sign displayed?				
Are the sediment fences erected adequately/correctly? NOTE: • Geotextile sediment fence buried at least 200 mm below ground. • Built up sediment should not exceed 1/3 of the height of the sediment fence • No tears or rips. • Not laying down or covered over by materials.				
Is there an advisory/attention sign on the sediment fence?				
Is the entry/exit pad (rumble pad) in the correct location? NOTE: • Are the tradespeople/suppliers using this entry point?				
Does the entry/exit point (rumble pad) require maintenance? NOTE: • Has the entry/exit pad got excessive sediment in it? • Turn over with a machine to expose the course aggregate again. • Aggregate must be 40 mm or greater. • Is there a bunding/diversion drain above the rumble pad to divert sediment behind the sediment fence? • Are the tradespeople using an adjacent lot to gain entry to the site? If so, are there control measures in place to prevent the movement of sediment off the lot and into the gutter?				
Is the road clean of sand, silt and mud? NOTE: • Do the tradespeople have the capacity to clean-up the sediment before they leave the site?				

1

EROSION AND SEDIMENT CONTROL DAILY SITE CHECK LIST

Best Practice guidelines for the *Control of Stormwater Pollution from Building Sites*

ITEM AND/OR LOCATION TO CHECK	TIMING			
	Start of works	Each day – throughout the duration of works	Roof laid	Completion
Is there a contained area for building waste on site? NOTE: • Use a skip bin and/or mesh trap. • Cover the waste cage/bin at the end of each work day. • Place food packaging into waste cage/bin after each meal break. • Skip or waste cage should not be allowed to overflow. • Cover loads of waste when delivering to waste facility.				
Have the tradespeople and suppliers been made aware of the requirements for erosion and sediment control, and the consequences involved if there is a breach?				
Are filter socks/sand bags in place?				
Are the stormwater gully traps in front of the site protected from sediment run-off and maintained?				
Are the 'wet trades' setting/washing up behind a sediment fence and on grassed areas that will hold the volume of waste?				
Is my maintenance program diary for this site up-to-date?				
Are the stockpiles/sand/soil adequately protected? NOTE: • Covered by a plastic sheet. • Located behind a sediment fence. • Sand bags around base.				
At the end of each working day do the temporary stockpiles on hard surfaces have: • a bund wall of sandbags, fibre or geofabric sausage on the downside of the stockpile? • a waterproof / windproof covering? • an up-slope diversion of sandbags, fibre or geofabric sausage for on-site stockpiles? • sandbags or geotextile bags filled with gravel surrounding the stockpile (if on road reserves)?				
Is the turf strip on the footpath cleared of sediment, sand and mud?				
Are the service trenches backfilled?				
Are the temporary downpipes correctly connected?				
Is there an exposed aggregate driveway? If so, does the concreter know/practice the correct control measures?				
Has the client been advised about erosion and sediment control requirements? NOTE: • The site must have adequate control measures on-site at all times, even after hand over.				

For further information about the Healthy Waterways Campaign and The Partnership telephone **(07) 3403 4206** or visit the Healthy Waterways website at **www.healthywaterways.org**

SUPPORTED BY

References

Pittwater Council website – Ecological Sustainability Plan Guidelines

Pittwater Council or PCA – B5 Water management Development Control Plan,

Pittwater Council or PCA – B4 Controls relating to the natural Environment

Lancom NSW - Planning for Erosion and Sediment Control on Single Residential Allotments - 1st Edition and 4th Edition,

Catchments and Creeks Pty Ltd – Erosion and sediment control detailed specifications

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1. SANDSTONE CREST (SC)

These areas are the plateaus and upper slopes with generally shallow soils developed on Hawkesbury sandstone. Their soils fall into the Hawkesbury, Gymea, Somersby and Oxford Falls soil landscapes.

A. Open Forest

Trees:

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTICS
Parramatta Green Wattle	Acacia parramattensis	Pale yellow flowers and fine fern-like leaves.
Black She Oak	Allocasuarina littoralis	Deep fissured bark. Cones cylindrical shape with a flat apex
Smooth-barked Apple	Angophora costata	Orange to salmon coloured bark. Branches that contort and twist.
Saw toothed/ Old Man Banksia	Banksia serrata	Knobbly grey bark and thick serrated leaves. Nectar for birds and marsupials.
NSW Christmas Bush	Ceratopetalum gummiferum	Flowers are small and white. Fruits that swell to an attractive bright red in summer.
Red Bloodwood	Eucalyptus gummifera	Tesselated dark grey-brown bark. Flowers with heavily scented blossoms.
Scribbly Gum	Eucalyptus haemastoma	Smooth-bark is pale with scribbles. Important Koala food tree.
Sandstone Stringybark	Eucalyptus oblonga	A small tree, with stringy bark extending to the smallest branches.
Sydney peppermint	Eucalyptus piperita	Grey rough barked trunk, with white upper limbs and scented peppermint leaves
Grey Gum	Eucalyptus punctata	Bark is grey with large cream patches. Significant Koala food tree.
Silver top Ash	Eucalyptus sieberi	The trunk has dark flaky bark, with smooth creamy upper branches.

Shrubs:

Sweet-scented Wattle	Acacia suaveolens	Pale yellow, perfumed flower balls.
Paper bark Tea-tree	Leptospermum trinervium (formerly L .attenuatum)	Flowers white. Stout trunk with papery-flaky bark
Blackthorn	Bursaria spinosa	Flowers in late Summer - white.
Prickly Moses	Acacia ulicifolia	Flowers in late Winter with pale lemon wattle flowers.
Wedding Bush	Ricinocarpus pinifolius	Soft erect shrub, with white flowers.
Hair-pin Banksia	Banksia spinulosa var. spinulosa	Flowers in Autumn/ Winter. A major food source for birds and possums.
Common Hop Bush	Dodonaea triquetra	Soft leafy shrub with thin -textured leaves
Native Fuschia	Epacris longiflora	Brilliant Winter flowers with small heart-shaped leaves
Broad-leafed Wedge Pea	Gompholobium latifolium	Large lemon yellow pea flower with broad, flat leaves.
Grey Spider flower	Grevillea buxifolia	Rusty-brown to grey flowers with whitish hairs.
White spider flower	Grevillea linearifolia	White flowers in Spring.
Pink spider flower	Grevillea sericea	Pink-purple flower in Spring ; tolerates dry, open areas.
Red spider flower	Grevillea speciosa	Crimson/red Winter flowers.
Hakea	Hakea gibbosa	Prickly shrub with dense foliage and creamy flowers.
Mountain Devil	Lambertia formosa	Large orange/red tubular flowers.
Rice flower	Pimelia linifolia	White clustered flowers in Spring
Native Parsnip	Platysace lanceolata	White compact flowers in Summer.

Fine-leaf Bush-pea	Pultenaea stipularis	Summer flowers are yellow with faint -red markings.
Grass Tree	Xanthorrhoea spp.	Long grass-like leaves with tall flower spike. The rich nectar is food for birds and insects.

Herbs, Climbers and Low Shrubs:

Flannel Flower	Actinotus helianthi	Attractive soft, white daisy -like flower heads.
Variable Bossiaea	Bossiaea heterophylla	Narrow leaves, with red, orange and yellow patterned flowers.
Wombat Berry	Eustrephus latifolius	Flowers in pale pink clusters.
Blue Flax Lily	Dianella caerulea	Tufted herb, with rich blue flowers and yellow anthers.
Apple Berry	Billardiera scandens	Slender climber, with cream drooping flowers and edible fruits.
Love Creeper	Glycine clandestina	Slender creeper with mauve flowers.
Dusky Coral Pea	Kennedia rubicunda	Robust twiner, which has large red pea flowers with black markings.
False Sarsaparilla	Hardenbergia violacea	Attractive twiner with rich purple pea flowers.
Spiny-headed Mat-rush	Lomondra longifolia	Perfumed-yellow flower clusters on small stalks.
Silky Purple Flag	Patersonia sericea	Tufted herb with large purple iris flowers and grass-like leaves.
Snake flower/ Purple Fanflower	Scaevola ramosissima	Scrambling herb with purple fan-shaped flowers.
Kangaroo grass	Themeda australis	Native grass with purple sheen, which flowers late Spring.

B. HEATHS AND ROCKY HEATHS (SANDSTONE CRESTS)

Trees:

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTIC
Saw toothed/ Old Man Banksia	Banksia serrata	Knobbly grey bark and thick serrated leaves.Nectar for birds and marsupials.
Red Bloodwood	Eucalyptus gummifera	Tesselated dark grey-brown bark. Flowers with heavily scented blossoms.
Grey Gum	Eucalyptus punctata	Bark is grey with large cream patches. Significant Koala food tree.

Shrubs:

Sweet-scented wattle	Acacia suaveolens	Pale yellow perfumed balls of flowers with blue-green leaves.
Scrub She-Oak	Allocasuarina distyla	Glossy foliage with grey fruiting nuts.
Dwarf Apple	Angophora hispida	Twisted trunk with young branches bearing red hairs.
Heath-leaved Banksia/ Lantern Banksia	Banksia ericifolia	Flowers in a cylindrical spike. Nectar source for birds.
Darwinia	Darwinia fascicularis var. fascicularis	Clusters of tiny pine-like leaves. Flowers changing from white to red.
Dogwood	Jacksonia scoparia	Orange-yellow pea flowers,with little leaf coverage on plant.

Sticky sword sedge	Leptospermum squarrosum	Enjoys moist position with pinky white flowers.
Fringe-myrtle	Calytrix tetragona	Star-shaped white flowers.
Crowea	Crowea saligna	Thin leaves with bright pink flowers.
Native Fuschia	Epacris longiflora	Bell-shaped red to white flowers.
Grey Spider -flower	Grevillea buxifolia	Grey flowers with fine hairs covering.
Dagger Hakea	Hakea teretifolia	Spiky leaves and white to cream flowers.
Pink Capitata	Kunzea capitata	Bright purple to violet flowers in button-like heads.
Honey Flower/Mountain Devil	Lambertia formosa	Large orange to red tubular flowers.
Grass Tree	Xanthorrhoea spp	Long grass-like leaves with a tall flower spike. The rich nectar is food for birds and insects.

Groundcover and Low Shrub:

Christmas Bells	Blandfordia nobilis	Erect tufted herb with red to yellow bell-shaped flowers.
River Rose	Bauera rubioides	Bell-shaped pink to purple flowers.
Variable Bossiaea	Bossiaea heterophylla	Erect shrub with flattened leaves and red flowers.
Calyptrix	Calyptrix tetragona	Erect shrub with small white flowers each with long sinuous feelers.

C. HANGING SWAMPS (SANDSTONE CRESTS):

Shrubs:

Heathleaved/ Latern banksia	Banksia ericifolia	Cylindrical flowers in a spike. Nectar source for birds.
River Rose	Bauera rubioides	Forms dense entwined masses with pink flowers.
Christmas Bells	Blandfordia nobilis	Erect tufted herb with red to yellow bell-shape flowers.
Darwinia	Dawinia fascicularis var. fascicularis	Clusters of tiny pine-like leaves. Flowers white changing to red.
Red-fruited Sword Sedge	Gahnia sieberana	Tall leafy sedge, dense thickets blue-green leaf underside.
Crimson Bottlebrush	Callistemon citrinus	Crushed leaves have a lemon scent. Flowers have bright red filaments.
Heathy Parrot Pea	Dillwynia retorta	Small spreading shrub with masses of flowers with yellow and red markings.
Pink Tea-Tree	Leptospermum squarrosum	Small dense shrub, with masses of pink flowers and dark prickly foliage.
Fine-leaf Bush-pea	Pultenaea stipularis	Long slender leaves and yellow flowers.

D. COASTAL HEATHS
(SANDSTONE CRESTS):

Trees:

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTIC
Lillypilly	Acmena smithii	Dense dark glossy foliage with fruit succulent and edible.
Saw toothed/ Old Man Banksia	Banksia serrata	Knobbly grey bark and thick serrated leaves. Nectar for birds and marsupials.
Coastal Banksia	Banksia integrifolia	Leaves are stiff and leathery, dark-green above with white hairs below.
Scribbly Gum	Eucalyptus haemastoma	Smooth-bark is pale with scribbles. Important Koala food tree.
Bastard/ Broad-leaved White Mahogany	Eucalyptus umbra	Thick tough leaves and fibrous bark.
Ball Honeymyrtle	Melaleuca nodosa	Leaves are linear and sharply pointed. Flowers filaments cream to yellow.

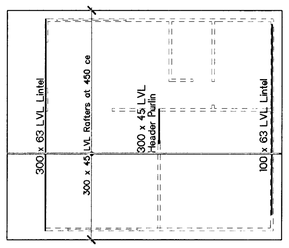
Shrubs:

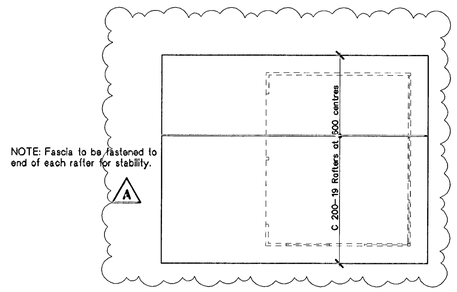
Golden Wattle	Acacia longifolia var. sophorae	Robust sprawling shrub with flower heads a golden-yellow.
Myrtle Wattle	Acacia myrtifolia	Attractive red-tinged foliage and flower heads a pale yellow.
Scrub She-oak	Allocasuarina distyla	Dense brushy shrub. Male plant a rusty-red when in flower.
Sweet-scented Wattle	Acacia suaveolens	Pale yellow perfumed balls of flowers and blue-green leaves.
Baeckea	Baeckea imbricata	Leaves are broad and flat with flowers white to pinkish.
Heath-leaved Banksia/ Lantern Banksia	Banksia ericifolia	Cylindrical flower spike. Nectar source for birds.
Silver Banksia	Banksia marginata	Rounded shrub with leaves small and white below. Flower spikes yellow in colour.
Breynia	Breynia oblongifolia	Flowers tiny and reddish with leaves an olive green.
Common Correa	Correa reflexa	Leaves papery and heart shaped with flowers a red-white-green combination.
Box-leaf Wax Flower	Eriostemon buxifolius	Leaves are short and broad and flowers pink.
Hop-Goodenia	Goodenia ovata	Leaves are broad and glossy and flowers yellow.
Broad-leafed Drumsticks	Isopogon anemonifolius	Leaves are narrow and flat with flowers yellow.
Butterfly Bush	Kunzea ambigua	Leaves are tiny and clustered with flowers white.
Rusty Petals	Lasiopetalum ferrugineum	Flowers are a rusty colour and appear permanently withered.
Coastal Tea Tree	Leptospermum laevigatum	Tall coastal shrub with white flowers.
Sticky Sword-Sedge	Leptospermum squarrosum	Flowers pink to white.
Dagger Hakea	Hakea teretifolia	Stiff prickly shrub with leaves needle sharp. Fruit narrow and dagger-like.
Hakea	Hakea gibbosa	Very prickly shrub with leaves covered in fine white hairs.
Spiky Mirbelia	Mirbelia rubiifolia	Flowers are a large rich rose-purple colour with pale purple markings.
Carrot Tops	Platysace linearifolia	Flowers are white in dense clusters with soft thread-like foliage.
Large-leafed Bush-pea	Pultenaea daphnoides	Slender attractive shrub with flowers yellow bearing red markings.

Elliptical Bush-pea	Pultenaea elliptica	Small erect shrub with flowers a rich yellow with dark red markings.
Mutton Wood	Rapanea variabilis	Flowers are pale yellow, tiny and clustered on the old wood.
Coast Westringia	Westringia fruticosa	Dense spreading shrub. Flowers are white with a long narrow throat.
Boobialla	Myoporum insulare	Leaves are thick and fleshy with flowers white with purple spots.
Grass Tree	Xanthorrhoea spp.	Long grass-like leaves with a tall flower spike. The rich nectar is food for birds and insects.

Herbs, Climbers and Low Shrubs:

Apple Berry Dumplings	Billardiera scandens	Slender climber or scrambler with purple fruits which are edible.
Blue Flax Lily	Dianella caerulea	Tufted herb with flowers a rich blue.
Knobby Club Rush	Isolepis nodosa	A clump-forming sedge with spiklets in a dense globular cluster.
Dusky Coral Pea	Kennedia rubicunda	Robust twiner with large red pea-flowers bearing black markings.
Spiny Mat Rush	Lomondra longifolia	Large tufted herb with tough strap-like leaves. Flowers edible and scented.
Crinkle Bush	Lomatia silaifolia	Low shrub with rigid, highly divided leaves. Tufted on ground.
Snake Flower	Scaevola ramosissima	Herbaceous scrambler, with large bluish-mauve flowers.
Kangaroo Grass	Themeda australis	Tufted grass with browny purplish spiklet clusters and a long, wiry flowering stem.





ROOF MARKING PLANS

Scale 1:100

REFER TO DRAWING 1 FOR NOTES AND THE 'IMPORTANCE OF CURING CONCRETE' GRAPH.

No.	Amendment	Drawn	Date
A	Studio relocated by request from client	LS	7.05.07

PLAN OR DOCUMENT CERTIFICATION

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I hold the following qualifications or licence No.....M.Eng.Sc.....
.....F.I.E.Aust.....Nper3.....Struct.Civil.No.149788.....
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Jack D. Hodgson 3/5/07 — Name — Date — Signature

ROOF MARKING PLANS

PROPOSED ALTERATIONS AND ADDITIONS
87 WHALE BEACH ROAD
WHALE BEACH

Council Copy

This is the plan/spec. referred to in Fitzgerald Certifiers Certificate Cert. No. 2007/283
10/5/07
Paul Fitzgerald — Accreditation No 117

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Designed	Drawn	Job No.	Drawing No.
JDH	LS	24367-S3	/A
Design Check	Drawing Check		
JDH	SG		
Date			
1 MAY 2007			

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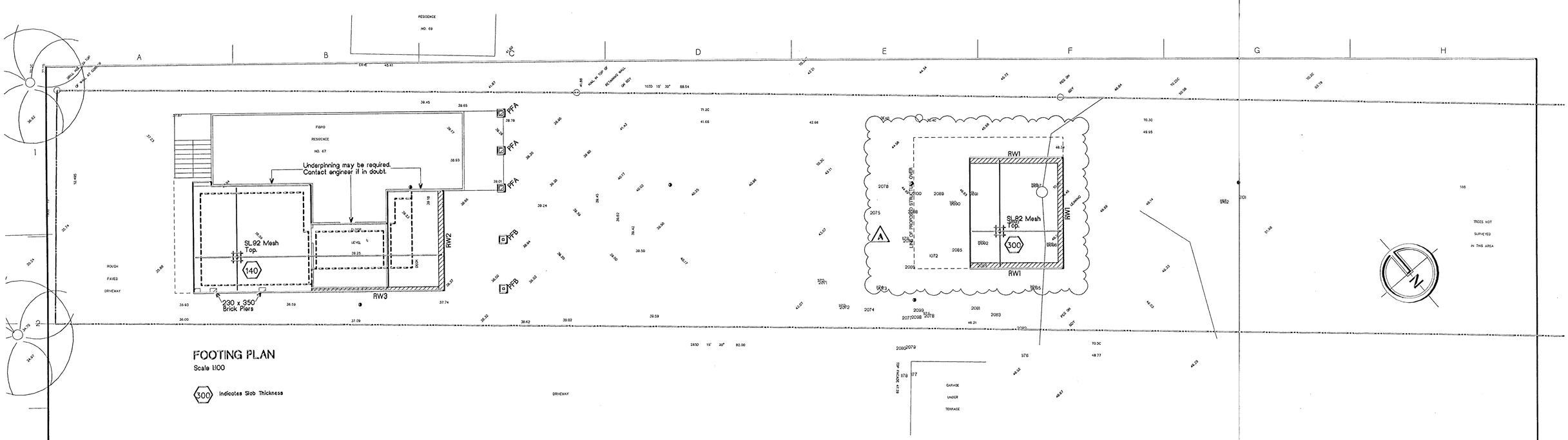
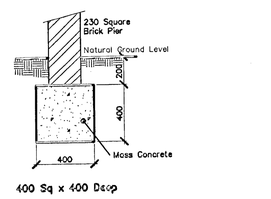
0 1m 2m 3m 4m 5m



FOOTING PLAN

Scale 1:100

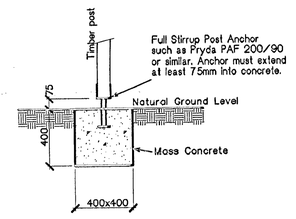
(300) Indicates Slab Thickness



400 Sq x 400 Deep

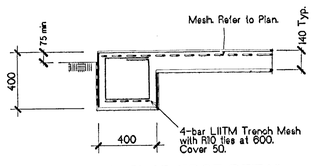
PAD FOOTING DETAIL - PFA

SCALE 1:20

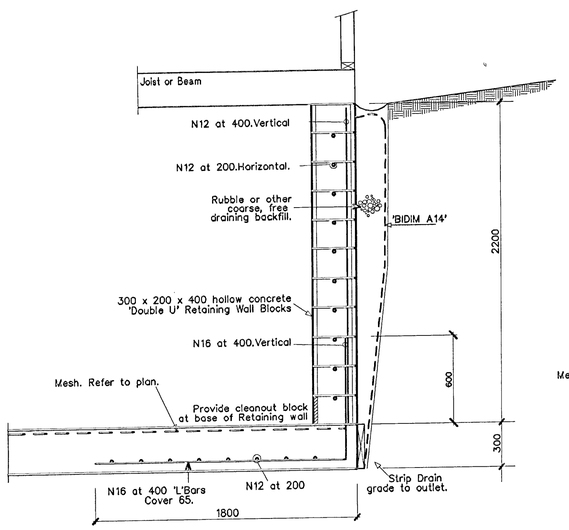


PAD FOOTING DETAIL 'PFB'

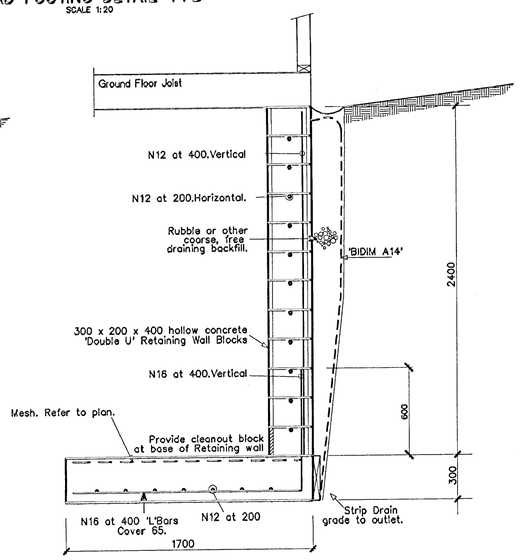
SCALE 1:20



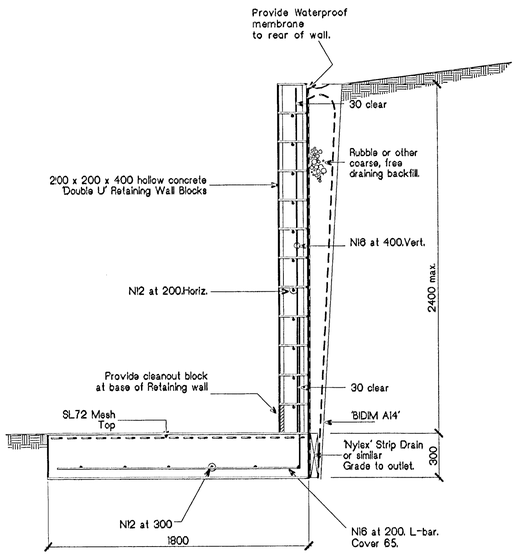
TYPICAL SLAB EDGE DETAIL



TYPICAL RETAINING WALL SECTION - RW1



TYPICAL RETAINING WALL SECTION - RW2



BLOCK RETAINING WALL SECTION 'RW3'

Scale 1:20

CONCRETE & BLOCK NOTES

1. All concrete work to be in accordance with AS 3600.
2. F'c Refer to table.
3. Maximum aggregate size = 20 for footings, slabs & beams.
   = 10 for block filling.
4. Slump = 80.
5. All concrete, including block filling, to be vibrated.
6. Slabs to be kept damp for at least 14 days after placing.
7. All blockwork to be in accordance with SAA Masonry Code AS 3700.
8. All cavities of block work to be thoroughly cleaned out, using knock out blocks or other suitable means, before filling with grout or concrete.
9. 200 & 300 blocks to be hollow retaining wall blocks with a characteristic strength of 20 MPa.
10. Blocks may be filled with a C 1L 0.5 :S 4.5 mortar as the block laying proceeds.
11. Reinforcing Steel to comply with AS/NZS 4671:2001 and to be D500N unless noted otherwise. (where 500 = strength grade in megapascals & N = Normal ductility class).
    Steel Reinforcement to be cut & bent in accordance with AS 3600.
12. Bar Chairs to be no more than 800mm centre to centre spacings.
13. Reinforcement to be tied at every other intersection minimum.
14. Metal roofing being used as formwork (not Bondeck or similar).
    Depth of Slab must be taken from the Top of the Roof Rib.
    Specified bottom cover must be taken from the Top of the Roofing Rib or be protected by an approved curing membrane.
15. Moisture Vapour Membrane to be 200 Microns thick, U.V. Resistant and to be in accordance with AS 2870-1996.

Acceptable manufacturers and processors of steel reinforcement must hold a valid certificate of approval, issued by the Australian Certification Authority for Reinforcing Steel Ltd (ACRS), or to an equivalent certification system as may be approved in writing by the specifier. Evidence of compliance with this clause must be obtained when the contract bids are received.

STEELWORK NOTES

1. Fabricate and erect all structural steelwork in accordance with AS 3680.1, AS 4100, AS 1554 and the Specification.
2. Do not obtain dimensions by scaling the structural elements.
3. Chip all welds free of slag.
4. All steelwork to be Hot Dipped Galvanised. Unless Otherwise Noted.
5. Unless otherwise noted use
   a) 6mm continuous fillet weld
   b) 10mm thick gusset, fin and end plates, weld all round.
   c) 16mm dia. 4.8/s bolts
6. Minimum end bearing 150mm.

TIMBER NOTES :

1. All work (including bracing, wind bracing & tie downs) shall be carried out in accordance with AS 3660.1, AS 1684.2, AS 1720.1 and the specification.
2. Refer to the Architects Drawings and the specification for all timber sizes not shown on these drawings.
3. All timber shall be free of Gum veins, pockets, knots holes or splits within 255mm of any connection.
4. Refer to specification for preservatives and finishes to timbers.
5. All bolts, nuts, washers and timber connectors shall be hot dip galvanised unless noted otherwise.
6. All F7 timber shown are nominal sizes only.

Element	Cover (mm)		F'c at 28 days	
	Protected	Exposed	Protected	Exposed
Piers	65		25 MPa	
Footings	50		25 MPa	
Block Filling	refer to detail		25 MPa	
Slab on Ground			32 MPa	32 MPa
- Top	30	45		
- Bottom				
Beams	50	50	40 MPa	40 MPa
Columns	30	45	40 MPa	40 MPa
Slabs	30	45	40 MPa	40 MPa
Walls	30	45	40 MPa	40 MPa

The minimum clear cover is to reinforcement ties and stirrups.

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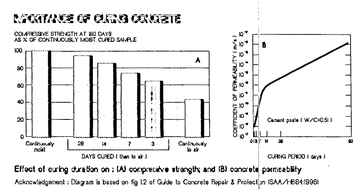
This is the plan/spec. referred to in Fitzgerald Certifiers Certificate Cert. No. 2007/288

16/05/07
Paul Fitzgerald — Accreditation No 117



Effect of curing duration on : (A) compressive strength, and (B) concrete permeability

Acknowledgement : Diagram is based on fig 12 of Guide to Concrete Repair & Protection (SAA/HB84:1999)

No.	Amendment	Drawn	Date
A	Studio relocated by request from client	LS	7.05.07

PLAN OR DOCUMENT CERTIFICATION

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Jack D. Hodgson 2/5/07 — J Hodgson

Name — Date — Signature

FOOTING PLAN AND DETAILS

PROPOSED ALTERATIONS AND ADDITIONS
87 WHALE BEACH ROAD
WHALE BEACH

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Email:info@jackhodgson.com.au web:www.jackhodgson.com.au ACN. 053 405 011

Designed	Drawn	Job No.	Drawing No.
JDH	LS	24367	S1 /A
Design Check: JDH	Drawing Check: SG		
Date: 1 MAY 2007			

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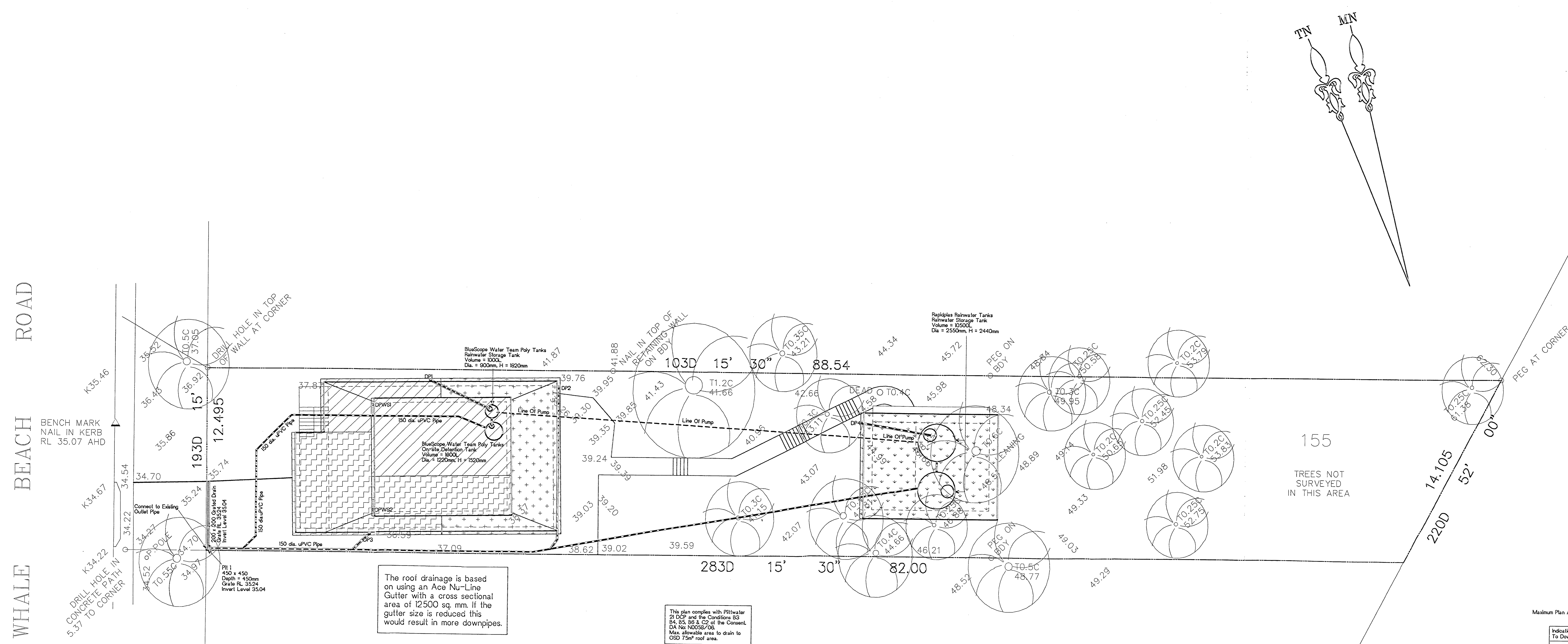
0 5m 10m 15m 20m 25m



Maximum Plan Area is ##.#m² per downpipe

Indication Of Area Draining To Downpipes By Hatching.	
DP1 – 70.0m²	
DP2 – 49.0m²	
DP3 – 70.0m²	
DP4 – 68.0m²	
DPWS1 – 51.0m²	
DPWS2 – 26.0m²	

Note:– Areas are unfactored plan areas

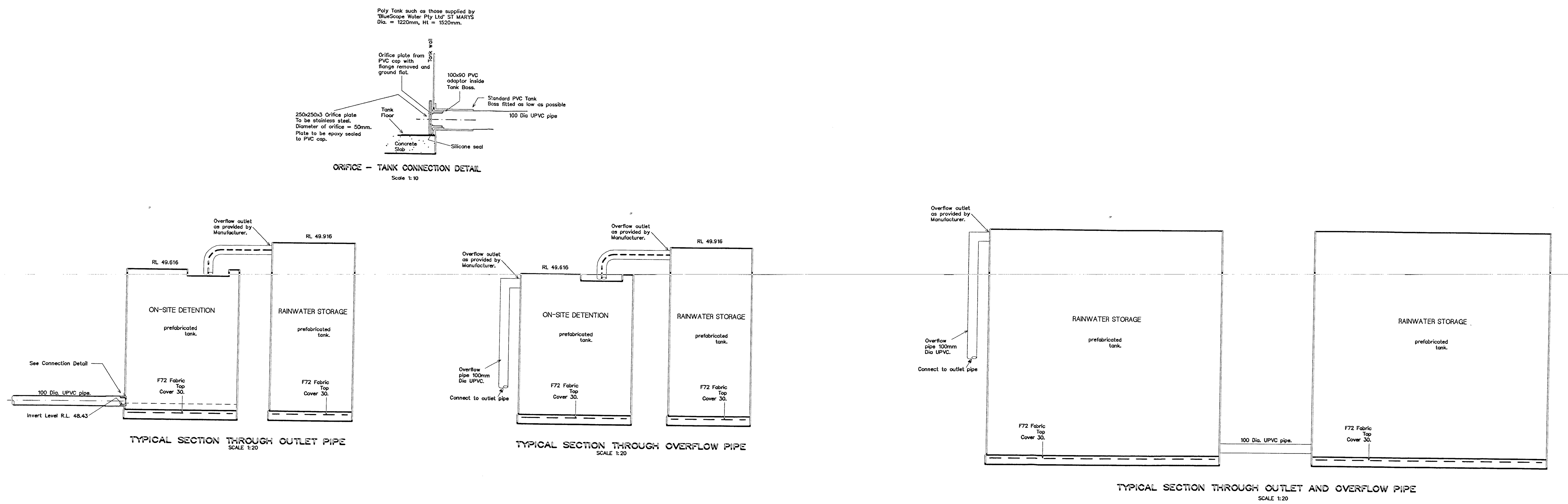
Drainage Pipe Notes.

Slope of pipes to be a minimum of 1:100 i.e. 1%
All levels and dimensions to be checked and confirmed on site.
All design work and works to be in accordance with AS/NZS 3500.5 (2000) and AS/NZS 3500.3.2 (1998)

All pipes unless otherwise specified on the plan to be 100 dia. UPVC pipe.

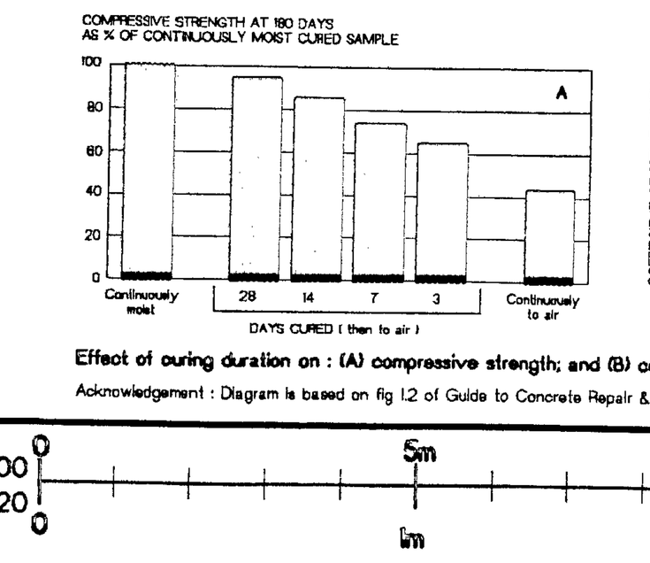
Inspection openings will be required at even spacings not more than 30 metres apart and at any change of direction greater than 45 degrees.

The Eaves Gutter connected to all DP's to be a minimum of Ace Nu-Line Gutter with a cross sectional area of 12600 sq. mm (as taken from ACE Gutters), or similar. Downpipes attached to the eaves gutter to have a minimum diameter of 125mm or 100 x 100 rect. or similar.



Council Copy

This is the plan/spec. referred to in Pittwater Certifiers Certificate
Cert. No 2007/288
Paul Fitzgerald 10/5/07 Accreditation No 117



No.	Amendment	Drawn	Date
A	Studio relocated by request from client	CP	8/5/07

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Jack D. Hodgson 8/5/07 [signature]
Name Date Signature

STORMWATER MANAGEMENT PLAN

PROPOSED ALTERATIONS AND ADDITIONS
67 WHALE BEACH ROAD
WHALE BEACH

SAM & SEMA

Our design and drawings are based upon and derived from information (including levels, surveys, etc) provided by the owner/architect/designer/builder. D.P. SURVEYING SERVICES PTY. LTD. Ref: 740
NB DESIGN Amendment: A
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Designed	Drawn	Job No.	Drawing No.
CP	CP	24367-H1/A	
Design Check: GH	Drawing Check: GH		
Date: 27 APRIL 2007			

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