Pittwater Council ABN 61 340 837 871
All Correspondence to be addressed to General Manager

Units 9, 11 & 12/ 5 Vuko Place
WARRIEWOOD NSW 2102
Avalon Customer Service Centre
59A Old Barrenjoey Road, AVALON 2107

Postal Address
P.O. Box 882
MONA VALE NSW 1660
DX 9018MONA VALE

Telephone (02)9970 1111
Facsimile (02) 9970 7150
Internet www.pittwaterlga.com.au
Email: pittwater_council@pittwater.nsw.gov.au

Development Compliance Group
8am to 6pm Mon - Thurs, 8am to 5pm Fri
Phone 9970 1111

23rd December 2003

Carol Voss
PO Box 300
CHURCH POINT NSW 2105

Dear Madam,

Re: Construction Certificate Application CC0608/03
Property : 12 Cornicho Road , Church Point

Thank you for selecting Council to assess your application.

After due consideration, the following items remain outstanding and require your attention to enable Council to approve your Construction Certificate:

1
2

- Show evidence that the Long Service Levy has been paid.
- B4 - The approved plans must be submitted to a Sydney Water Quick Check agent or Customer Centre to determine whether the development will affect Sydney Water's sewer and water mains, stormwater drains and/or easements, and if further requirements need to be met. The approved plans will be appropriately stamped. For Quick Check agent details please refer to "Your Business" section of Sydney Water's web site at www.sydneywater.com.au <http://www.sydneywater.com.au> then see Building & Renovating under the heading Building & Developing, or telephone 13 20 92.

  The consent authority or a private accredited certifier must ensure that a Quick Check agent/Sydney Water has appropriately stamped the plans before the issue of any Construction Certificate.

3

- B20 - Three sets of Drainage details showing site stormwater management are to be submitted prior to the release of the Construction Certificate. Such details are to be accompanied by a certificate from either a Licensed plumber or qualified practising Civil Engineer with corporate membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a corporate member and has appropriate experience and competence in the related field, that the stormwater management system complies with the requirements of section 3.1.2 "Drainage" of the Building Code of Australia Housing Provision and AS/NZS 3500.3.2 - Stormwater Drainage. The details shall include disposal of site stormwater to a public system (if the site is in a known slip area the stormwater disposal system must comply with the recommendations of a Civil (Geotechnical) Engineer's report).

JACK

4

- B28 - Three copies of plans, Street Levels provided by Council and a certificate, submitted by a chartered Professional Engineer, Architect or Surveyor, confirming to the satisfaction of Council or the accredited certifier that the access driveway and internal driveway complies with Council's policy DCP E3 "Driveways and Internal Roadways" and the Council street levels, are to be submitted with the Construction Certificate application.

5

- B29 - Three copies of an Erosion and Sediment Management Plan are to be submitted with the Construction Certificate application. Control over discharge of stormwater and containment of run-off and pollutants leaving the site/premises shall be undertaken through the installation of erosion control devices such as catch drains, diversion drains, energy dissipaters, level spreaders and sediment control devices such as hay bale barriers, filter fences, filter dams, sedimentation basins. Such plan is to be a accompanied by a certification from an appropriately qualified person, that the plans/ details have been designed in accordance with the requirements of the N.S.W. Department of Land and Water Conservation's "Urban Erosion and Sediment Control" manual.

6

- B45 - Three sets of detailed landscape working drawings, which comply in all respects with the conditions of development consent, are to be submitted prior to release of the Construction Certificate. Each plan/sheet is to be certified by a qualified landscape architect, landscape designer/environmental designer or horticulturist, confirming that the plans/details provide for the works to be carried out in accordance with Development Control Plan No 23 - Landscape and Vegetation Management.

- B45a - In particular, the landscape working drawing is to provide full details of the following:

    1. the usage of the dominant tree species growing in the area or locally indigenous species.
    2. all existing trees and vegetation to be retained, removed and proposed, including canopy spread, trunk location and condition;
    3. a plant schedule including stratum, species/common names, species' numbers, pot size and staking details;
    4. a schedule of materials (including such elements as turfing, edging, walling, paving and fencing);
    5. the proposed finished treatment of garden areas, including soil depth and mulching details;
    6. the location of underground/overhead services;
    11. understorey planting of species growing in the area or locally indigenous species, which, after three years will in conjunction with the canopy planting screen 50% of the built form, when viewed from the street.

7

- B60 - Three sets of Structural Engineering details relating to the slabs, footings, retaining walls are to be submitted prior to release of the Construction Certificate. Each plan/sheet is to be signed by a qualified practising Structural Engineer with corporate

membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a corporate member and has appropriate experience and competence in the related field.

- B60a - As the site is located in a slip liable area, the structural details relating to the slabs, footings, retaining walls, structural framing are to be endorsed by a qualified practising Geotechnical Engineer with corporate membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a corporate member and has appropriate experience and competence in the related field.

- B61 - Three copies of a Schedule of Works prepared by a qualified practising Structural Engineer with corporate membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a corporate member and has appropriate experience and competence in the related field are to be submitted in respect of the following items:

    1. The details and location of all intercept drains, provided uphill of the excavation, to control runoff through the cut area.

    2. The proposed method of disposal of collected surface waters is to be clearly detailed;

    3. Procedures for excavation and retention of cuts, to ensure the site stability is maintained during earthworks.

- B62 - Three copies of a Certificate from a qualified practising Structural Engineer with corporate membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a corporate member and has appropriate experience and competence in the related field, certifying the adequacy of the existing structure to support the additional loading.

B65 - Prior to issue of the Construction Certificate, details are to be submitted to Council or the Accredited Certifier that include, but are not limited to, all of the recommended conditions in the Geotechnical Report referred to in Council's Deferred Commencement Consent.

Form 2 of the "Geotechnical Risk Management Policy for Pittwater" is to be completed and submitted with the above details before issue of the Construction Certificate.

- Council has issued a Deferred Commencement Consent N0146/02 and written confirmation from Council's Planning & Assessment Group to confirm compliance with Part 1 of the Deferred Commencement Consent is required prior to further consideration of the Construction Certificate Application.

- Reference is made to the stairs leading to the Studio. Please refer to Part 3.9.1 of the Building Code of Australia and amend the plans appropriately.

- Submit to Council Specifications for the proposed works prior to the release of the Construction Certificate.

- Reference is made to the studio being built on the boundary on Lot 21, DP 661001 & Lot Y, DP 28908. Submit to Council's details on the construction material for the studio

that is within 900mm from the boundaries in accordance with Part 3.7.1 of the Building Code of Australia.

- Reference is made to the Development Consent approval and note that the consent is only granted for Lot Y, DP 28908.

We endeavour to make phone contact with our Customers to ensure a timely turn around in information although at times this may not be possible and/or Customers require written confirmation. If you have attended to these issues please disregard this letter.

This construction Certificate Application will be reviewed after 28 days from the date of this letter and should the abovementioned information not be received, Council will proceed to determine the Application with a refusal.

All new information provided to Council should clearly quote your application number CC0608/03.

Yours faithfully

Renee Turner
DEVELOPMENT COMPLIANCE OFFICER

Pittwater Council

ABN: 61340837871

REPRINTED

TAX INVOICE

OFFICIAL RECEIPT

R/145703

19/07/2004 Receipt No 145703

To v w felton $444.40

12 CORNICHE RD
CHURCH POINT

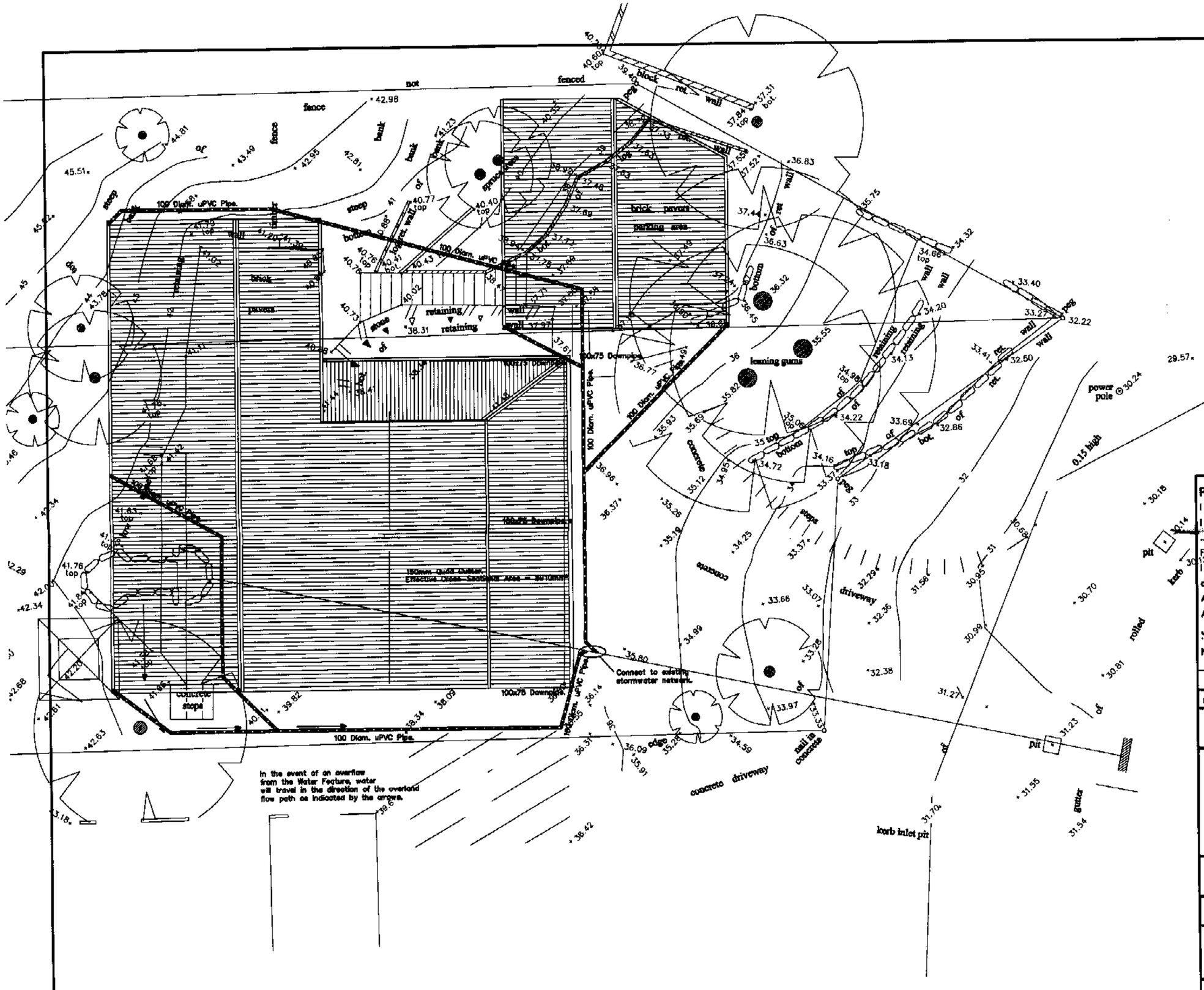
Qty/ Applic	Reference	Amount
	GLSL-Buil	$440.00
GL Rec	CC0608/03	
1	CCSST-CCf	$4.00
GL Rec	1 X	
	GST	$0.40
GL Rec		
To GL Receipt:		

Total Amount:	$444.40
Includes GST of:	$0.40

Amounts Tendered

Card	$444.40
Total	$444.40
Rounding	$0.00
Change	$0.00
Nett	$444.40

Printed 19/07/2004 9:47:21 AM
Cashier KRobinson



CONCRETE 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 or to be protected by an approved curing membrane.
7. Bar Chairs to be no more than 800mm ctr to ctr spacing.
8. 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)
9. Reinforcement to be tied at every other intersection minimum.
10. Moisture Vapour Membrane to be 200 Microns thick, U.V. Resistant and to be in accordance with AS 2870-1996.

DRAINAGE PIPE NOTES:-

1. All pipes unless otherwise specified to be 100 dia. UPVC pipe.
2. Slopes of pipes to be a minimum of 1:100 i.e. 1%.
3. All levels and dimensions to be checked and confirmed on site.
4. Inspection openings will be required at even spacings not more than 30 metres apart and at any change of direction greater than 45 degrees.
5. All design work and works to be in accordance with AS/NZS 3500.3.2:(1998) and AS/NZS 3500.5:(2000).

PLAN OR DOCUMENT CERTIFICATION

I am a qualified....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEER...

I hold the following qualifications or licence No.....M.Eng.Sc.....

.....F.I.E.Aust....Nper3....Struct.Civil.No. 149788.....

Further I am appropriately qualified to certify this component of the project. I hereby state that these plans or details comply with the conditions of development consent, the provisions of the Building Code of Australia, A.S.1170., A.S.1170.1, A.S.1170.2, A.S.1684., A.S.2870.1, A.S.3600., A.S.3700, A.S.4100

Jack D. Hodgson 24/3/04 J Hodgson

Name Date Signature

No.	Amendment	Drawn	Date

Unless this company carries out the inspections of all the structural elements and approves them, NO responsibility will be taken for the structural integrity of the completed work.

STORMWATER MANAGEMENT PLAN

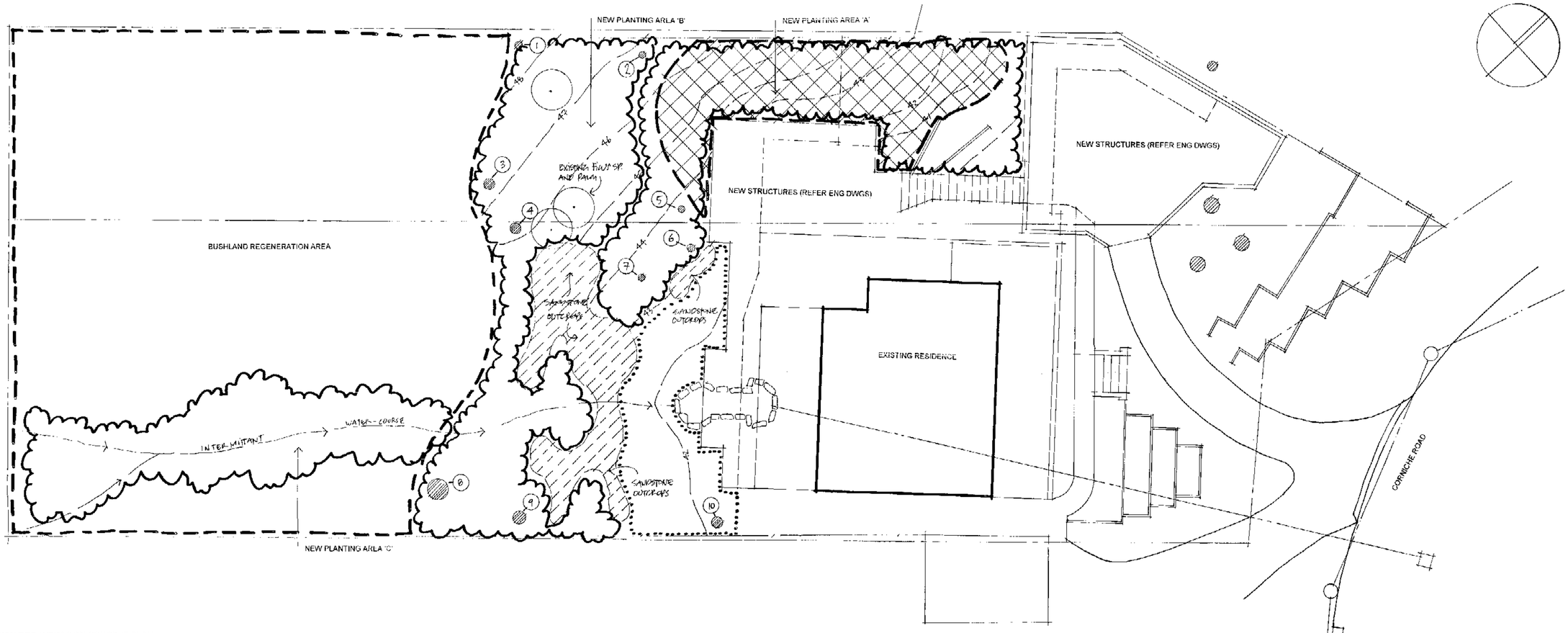
PROPOSED ALTERATIONS & ADDITIONS
12 CORNICHE ROAD
CHURCH POINT

Our drawings are based on the information provided by:-
Carol Voss, PO Box 300, Church Point, 2105.
Drawing No:- 22 17 1 - 10 of 10. Date:- September 2002
Amendment::- Date:-

The Structural Details shown on this Drawing are NOT to change under any circumstance. NO Certificate will be issued for work NOT in accordance with this Drawing.

JACK HODGSON CONSULTANTS PTY. LIMITED.
Consulting Civil, Geotechnical, and Structural Engineers.
11 Bungan Street, MONA VALE. P.O. Box 389. Post Code 2103.
Telephone (02) 9979 6733. Facsimile (02) 9979 6926. A.C.N. 003 405 811

Designed	JDH	Drawn	ARC	Job No.	Drawing No.
Checked	JDH	Scale	1:100,20, unc.	21014-1	
Date	12 MARCH 2004				



BUSH REGENERATION CONCEPT PLAN

The following document is intended as a guide for bush regeneration works at the rear of the abovementioned property. The property has had many non-native plant species introduced to it over forty years and many other environmental weeds flown in by birds. The owners have expressed the desire to adopt a bush regeneration approach to weed treatment on all areas outside of the development envelope. Waratah Eco Works will monitor progress of works.

- All weeds to be treated incrementally and in a mosaic fashion to reduce the impact of sudden habitat loss. A Weed Treatment Calender and Treatment Method Table have been supplied to the proprietors.
- Bamboo has been cut and painted, this process is being continued with good success on the upper sections of the property. The canes are being mulched and used on-site as bank stabilisation and around plantings.
- All weed propagules (seeds/fruits) to be hand removed then bagged and removed off-site, especially for annuals and persistent perennial-ground weeds present such as *Oxalis sp* and *North*ocordum gracile (False Onion).
- Herbaceous fern and ginger species are to be hand removed and composted on-site in an open rafted compost style.
- Sediment mesh will be installed on the lower edges of the seasonal watercourse adjacent to the construction site to reduce downstream sedimentation.
- A sprayed edge to the couch lawn is to be established to prevent future invasion.
- *Ochna serrulata* (Mickey Mouse Plant) is to be scraped and painted where encountered as is *Cinnamomum camphora* (Camphor Laurel).
- A broad edge to the remnant good bush at the back of the property is to be established with minimum disturbance bush regeneration strategies being employed here (ie: hand weeding). No supplementary planting will occur above the broad edge.
- Local riparian plant species sourced via Waratah Eco Works will be planted along the watercourse edges and plants from the Pittwater Spotted Gum Ecological Community (PSGEC) will be selected for planting in all other disturbed areas.
- Tree weed species are to be removed and replaced over time by treatment in situ, leaving the structures for habitat.
- Nesting boxes for parrots and birds are intended to be installed on the property to offset any habitat loss during the bush regeneration process.
- A twelve-month maintenance plan working twice a month is to be conducted to monitor and maintain all environmental weeds on site.
- Supplementary planting will be undertaken only with local plant species and during appropriate weather conditions (ie. following sufficient rain).
- All large boulders to be cleared of weed species and left as features in the remnant natural landscape.

PLANTING AREA SPECIFICATION

GENERAL

THE LANDSCAPE DOCUMENTATION IS INDICATIVE AND IS INTENDED TO BE INTERPRETED BY QUALIFIED LANDSCAPE TRADES FOR CONSTRUCTION. LANDSCAPE DRAWINGS ARE TO BE READ IN CONJUCTION WITH OTHER CONSULTANT DRAWINGS AND DOCUMENTS. WHERE DISCREPANCIES ARISE, OBTAIN INSTRUCTIONS PRIOR TO COMMENCEMENT. CONFIRM ALL SET-OUT ON SITE PRIOR TO CONSTRUCTION.

SITE PREPARATION

Existing Vegetation Removal
Refer Bushland Management Plan and Existing Tree Schedule for approved vegetation removal protocol.

Existing Vegetation Protection
Monitor the site during all building works to ensure existing vegetation to be retained is protected from any damage. Position 1800 high chainmesh fence immediately adjacent approved footprint. Ensure that where excavation is necessary within the drip line of trees, hand methods shall be used to preserve root systems intact and minimise damage. Do not cut any root greater than 50 mm dia. Where it is necessary to cut tree roots, do not unduly disturb the remaining root system.

Site Preparation / Earthworks
Refer architectural and engineering drawings for areas of excavation. Limit all excavation to the approved building footprint. Monitor site to ensure all landscape areas are free of unwanted matter including existing dumped material, contaminated matter and building rubbish for the duration of the building period. In areas of approved excavation stockpile existing topsoil layer for reuse / reinstatement. Protect stockpile from erosion.

Erosion Control
Install 'Jutemaster' blanket to areas shown in accordance with manufacturers written instructions. In addition install sediment fences to the main-slope water-course and to tops and toes of batters. Provide filter tubes to drains and inverts.

PLANTING AREAS

Planting
Plants must be propagated by cuttings or provenance seed from plants growing within 25 km of the property. All plant supply is to be certified as to viability, provenance and source (Pittwater Spotted Gum Forest Ecological Community). Set-out plants as per the schedule and notes. Soak plants prior to planting and plant directly into soil / fill profile. Backfill around plants and create water basin.

TURFING

Turf species is to be *Stenotaphrum secondatum* (Soft Leaf Buffalo 'Sir Walter'). Install 100mm site topsoil. Mix fertilizer throughout soil bed prior to laying turf. Rake and level soil surface to achieve grades. Lay turf in stretcher pattern with close-butted joints and no deviations in level. Finish flush to adjacent edges. Lightly roll to un-even surface. Water immediately and maintain moisture to full soil bed depth. Lift and replace failed turf or where levels have deviated. Once established, top dress to 10mm depth, including rubbing joints.

PLANT ESTABLISHEMENT PERIOD / MAINTENANCE STRATEGY

During the plant establishment period carry out regular maintenance including the following works:
- Watering – to maintain healthy growth, and monitor
- Weeding to all areas.
- Pest & disease control
- Add mulch to planting areas if appropriate
- Mowing and maintenance of turf.

SCHEDULE OF EXISTING TREES

No	Species Name	Common Name	Height	Action
1	*Angophora floribunda*	Rough Barked Apple	12 M	Retain
2	*Glochidion ferdinandi*	Cheese Tree	7 M	Retain
3	*Eucalyptus punctata*	Grey Gum	12 M	Retain
4	*Corymbia maculata*	Spotted Gum	15 M	Retain
5	*Brachychiton acerifolius*	Illawarra Flame	8 M	Retain
6	*Angophora floribunda*	Rough Barked Apple	12 M	Retain
7	*Angophora floribunda*	Rough Barked Apple	12 M	Retain
8	*Syncarpia glomulifera*	Turpentine	12 M	Retain
9	*Corymbia maculata*	Spotted Gum	15 M	Retain
10	*Corymbia maculata*	Spotted Gum	15 M	Retain

PLANTING SCHEDULE

Species name	Common Name	Height	Size	Area A No	Area B No	Area C No
CANOPY TREES / PALMS						
Angophora costata	Smooth Barked Apple	+20M	Tube		3	
Corymbia maculata	Spotted Gum	+20M	Tube		3	
Livistone australis	Cabbage Palm	20M	300mm	5		
Syncarpia glomulifera	Turpentine	+20M	Tube			5
TREES / SHRUBS						
Backhousea myrtifolia	Grey Myrtle	3.5M	150mm	10	5	5
Eupomatia laurina	Bolwarra	5.0M	150mm		10	5
Syncarpia glandulosum	Scentless Rosewood	4.0M	150mm	10	5	5
GROUNDCOVERS & GRASSES						
Asplenium australasicum	Birds Nest Fern	1.0M	150mm	25	15	15
Blechnum nudum	Blechnum	0.5M	Tube			25
Carex appressa (1)	Carex	0.75M	Tube	25		
Cissus hypoglauca	Native Grape	0.5M	Tube	25	15	25
Dianella caerulea	Blue Flax Lily	0.5M	Tube	75	75	30
Doodia aspera	Rasp Fern	0.4M	Tube		15	25
Entolasia stricta	Entolasia	0.5M	Tube		25	
Hibbertia scandens (1)	Twinning Guinea Flower	0.3M	Tube	50		
Lomandra longifolia	Mat Rush	1.2M	Tube	50	50	
Pandorea pandorana	Wonga Wonga Vine	0.75M	Tube		15	15
Pteridium esculentum	Common Bracken	1.5M	Tube		25	25

NOTES:
(1) Species not regarded as PSGF
(2) Area A equals 80% PSGF
(3) Areas B & C equals 100% PSGF

LEGEND

EXISTING TREES AND VEGETATION

EXISTING FENCE

EXISTING PROPERTY BOUNDARY

EROSION CONTROL BLANKET

NEW PLANTING AREAS

REINSTATED / NEW TURF AREA

AREA OF BUSH REGENERATION (SEE NOTES)

NOTES

This drawing shows planting, turfing and bush regeneration.

Refer to the architectural & engineering package for other external works such as pavements, structures, backfill, drainage, services, and site management.

Ensure all planting and turfing surface areas are free draining without sumps or low areas.

ISSUE

A 15/06/04 CONSTRUCTION CERTIFICATE

Landscape Consultant:

WARATAH ECO WORKS PTY LTD

7 Corniche Road, Church Point, NSW, 2105
tel: (02) 9997 6231
fax: (02) 9997 6207
email: info@waratahecoworks.com.au

Client:

VW & FM FELTON

Project:

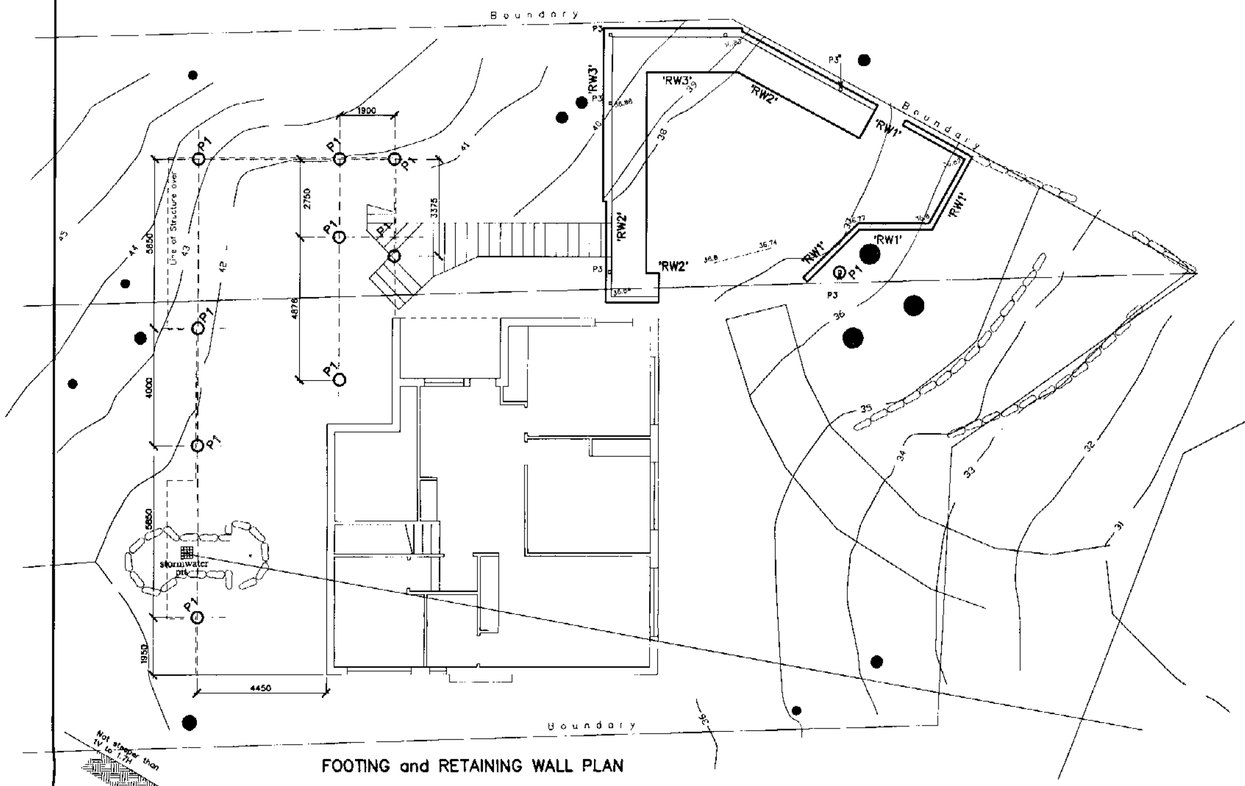
12 Corniche Road
Church Point NSW 2105

Drawing:

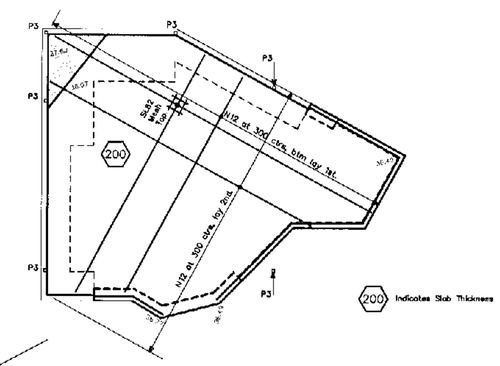
Landscape Plan

Date 10/06/04 Scale 1 : 100

Drawn SMN Dwg No L 01 A

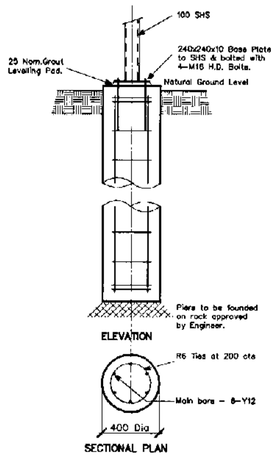


FOOTING and RETAINING WALL PLAN

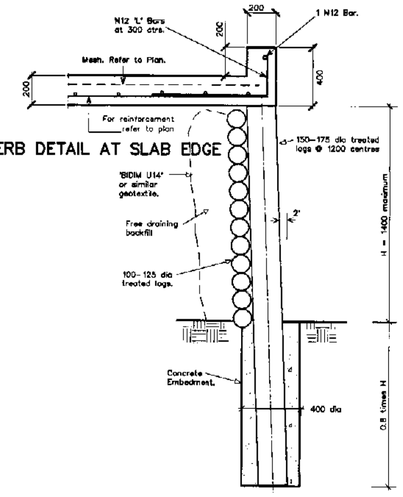


CARPARKING SLAB PLAN

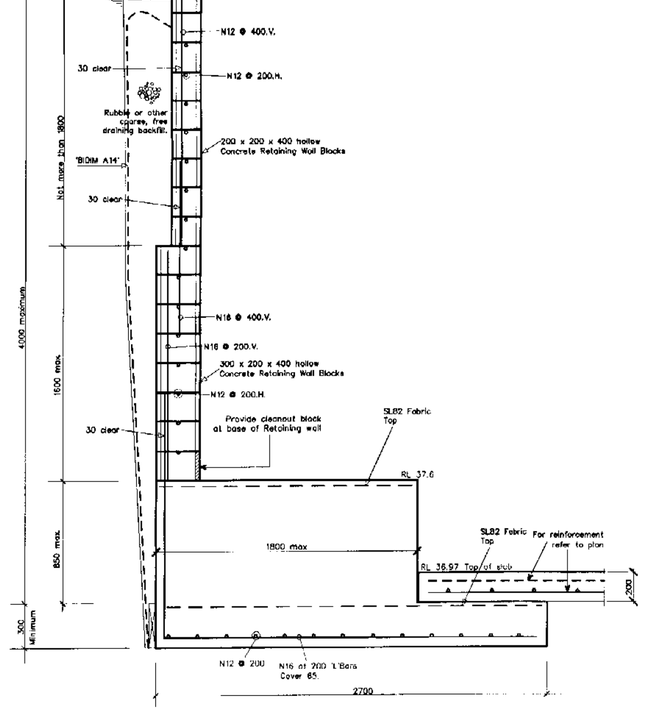
200 Indicates Slab Thickness



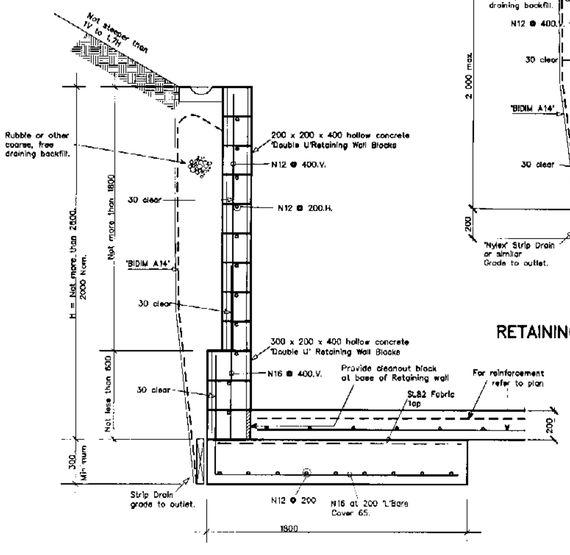
TYPICAL PIER 'P1' DETAIL
Scale 1:20



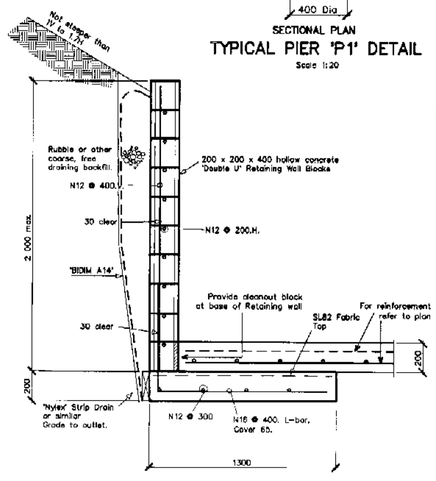
KERB DETAIL AT SLAB EDGE



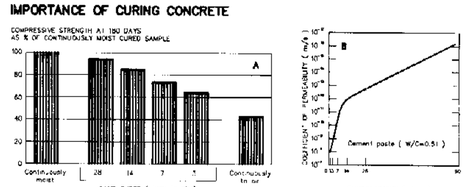
RETAINING WALL DETAIL 'RW3' AT CORNER



RETAINING WALL DETAIL 'RW3'



RETAINING WALL DETAIL 'RW2'



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

Acknowledgement : Diagram is based on fig 1.2 of Guide to Concrete Repair & Protection (SAA/HB84:1996)

CONCRETE 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 or to be protected by an approved curing membrane.
7. Bar Chairs to be no more than 800mm clr to ctr spacing.
8. 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)
9. Reinforcement to be tied at every other intersection minimum.
10. Moisture Vapour Membrane to be 200 Microns thick, U.V. Resistant and to be in accordance with AS 2870– 1996.

Element	Cover (mm)		F'c at 28 Days	
	Internal	External	Internal	External
Piers	65		40	
Footings				
Block Filling			25	
Slab on Ground			40	
– Top				
– Bottum				
Ret–Wall Footings			40	
– Top	35			
– Bottom	65			
Beams				
Columns				
Slabs				
Walls				

The minimum clear cover is to reinforcement ties and stirrups.

STEELWORK NOTES

1. Fabricate and erect all structural steelwork in accordance with AS 4100, AS 1554 and the Specification.
2. Do not obtain dimensions by scaling the structural elements.
3. Chip off 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. 4.6/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 1684.2,AS 1720.1 & 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.

PLAN OR DOCUMENT CERTIFICATION

I am a qualified....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEFR... I hold the following qualifications or licence No.....M.Eng.Sc..... .....F.I.E.Aust....Nper3....Struct.Civil.No.149788..... Further I am appropriately qualified to certify this component of the project. I hereby state that these plans or details comply with the conditions of development consent, the provisions of the Building Code of Australia. A.S.1170., A.S.1170.1, A.S.1170.2, A.S.1684., A.S.2870.1, A.S.3600., A.S.3700 A.S.4100

Jack D. Hodgson 7/4/04

Name Date Signature

No.	Amendment	Drawn	Date

FOOTING AND RETAINING WALL PLAN AND DETAILS

PROPOSED ALTERATIONS AND ADDITIONS 12 CORNICHE ROAD, CHURCH POINT

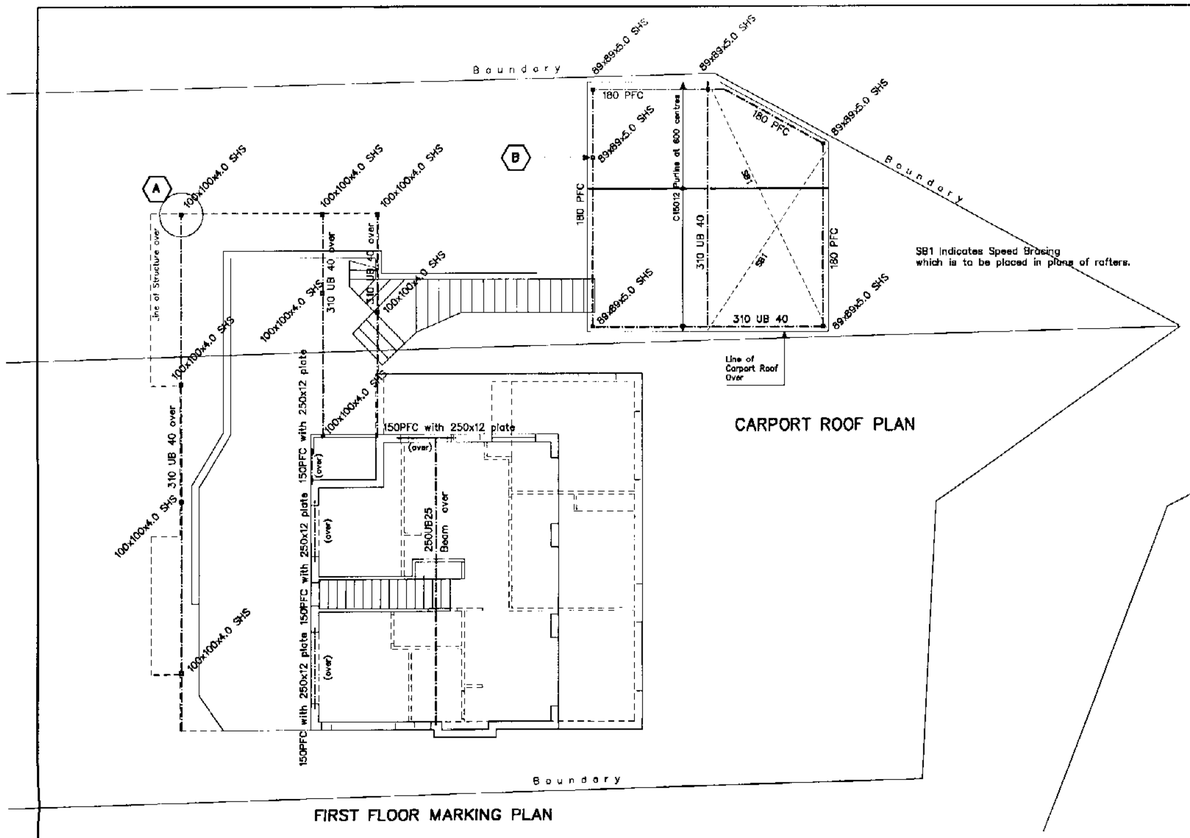
MR. VW & MRS. FM FELTON

Our drawings are based on the information provided by Mr & Mrs Felton
Drawing No:– 22.17.1,3–10 by Carol Vous Date:–September 2002
Amendment:– Date:

The Structural Details shown on this drawing are NOT to change under any circumstance. NO Certificate will be issued for work NOT in accordance with this Drawing.

JACK HODGSON CONSULTANTS PTY. LIMITED.
Consulting Civil, Geotechnical, and Structural Engineers.
11 Bungan Street, MONA VALE. P.O. Box 389, Post Code 2103.
Telephone (02) 9979 6733. Facsimile (02) 9979 6926. A.C.N. 053 405 311

Designed	JDH	Drawn	SG	Job No.	Drawing No.
Checked	JDH	Scale	1:100,20. unc.	21014–	2
Date	18 MARCH 2004				



CARPORT ROOF PLAN

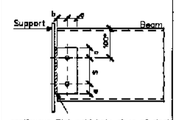
FIRST FLOOR MARKING PLAN

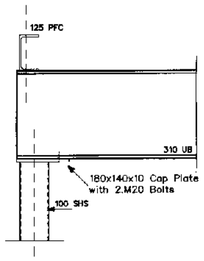
WEB SIDE PLATE CONNECTION TABLE

Beam Size	Plate (mm) Depth	Width	Thickness	Dimensions (mm) a	b	c	S	No. of Bolts	Bolt Size	Hole Dia. (mm)	Weld Size
150 UB	120	75	6	25	30	30	70	2	M20	22	8
180 UB	130	75	6	30	30	30	70	2	M20	22	8
200 UB	130	75	6	30	30	30	70	2	M20	22	8
250 UB	140	90	8	35	35	35	70	2	M20	22	8
310 UB	210	90	8	35	35	35	70	3	M20	22	8
360 UB	210	90	8	35	35	35	70	3	M20	22	8
410 UB	250	90	8	35	35	35	90	3	M20	22	8
460 UB	250	90	8	35	35	35	90	3	M20	22	8
150 UC	120	75	6	25	30	30	70	2	M20	22	8
200 UC	140	90	8	35	35	35	70	2	M20	22	8
250 UC	140	90	8	35	35	35	70	2	M20	22	8
150 PFC	130	75	6	30	30	30	70	2	M16	18	6
180 PFC	130	75	6	30	30	30	70	2	M16	18	6
200 PFC	150	75	6	30	30	30	90	2	M16	18	6
230 PFC	160	90	8	35	35	35	90	2	M20	22	8
250 PFC	160	90	8	35	35	35	90	2	M20	22	8
300 PFC	210	90	8	35	35	35	70	3	M20	22	8

Connection Details

* Indicates where possible





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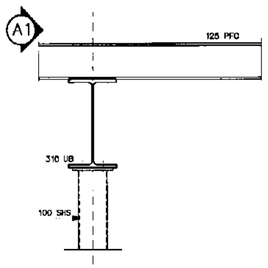
SCALE 1:10



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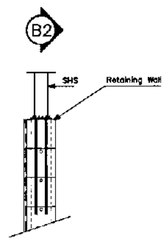
SCALE 1:10



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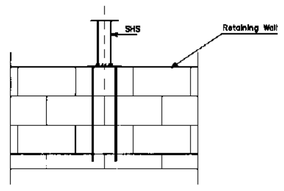

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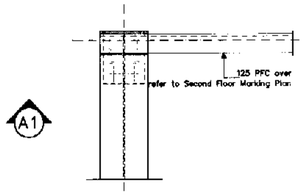
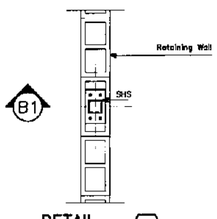
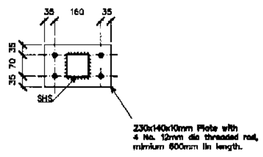
SCALE 1:20



DETAIL A
PLAN
SCALE 1:10



DETAIL B
SCALE 1:20



BASE PLATE DETAIL

PLAN OR DOCUMENT CERTIFICATION

I am a qualified....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEER...
I hold the following qualifications or licence No.....M.Eng.Sc.....
.....F.I.E.Aust....Npar3....Struct.CivIl.No.149788.....
Further I am appropriately qualified to certify this component of the project.
I hereby state that these plans or details comply with the conditions of development consent, the provisions of the Building Code of Australia.
A.S.1170., A.S.1170.1, A.S.1170.2, A.S.1684., A.S.2870.1.,A.S.3600., A.S.3700
A.S.4100

Jack D. Hodgson 7/4/04 J Hodgson
Name Date Signature

No.	Amendment	Drawn	Date

FIRST FLOOR & CARPORT ROOF MARKING PLAN AND DETAILS
PROPOSED ALTERATIONS AND ADDITIONS
12 CORNICHE ROAD,
CHURCH POINT

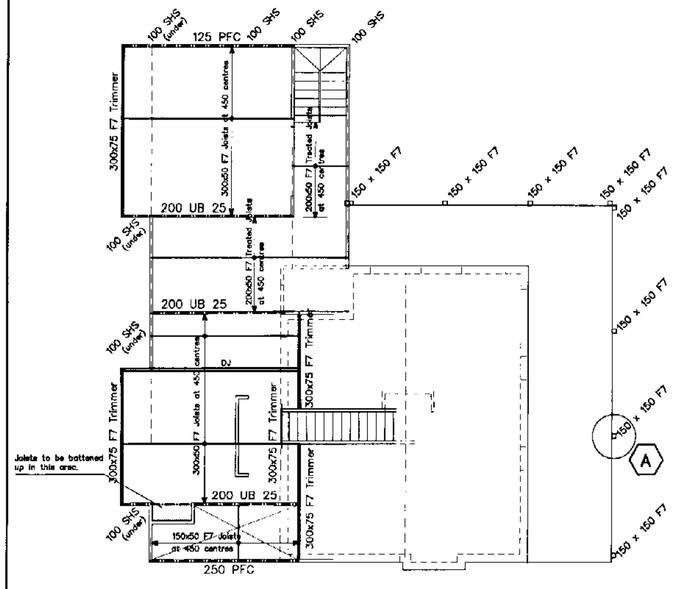
MR. VW & MRS. FM FELTON

Our drawings are based on the information provided by:-
Mr & Mrs Felton
Drawing No:- 22.17.1,3-10 by Carol Voss Date:-September 2002
Amendments:- Date:

The Structural Details shown on this Drawing are NOT to change under any circumstance. NO Certificate will be issued for work NOT in accordance with this Drawing.

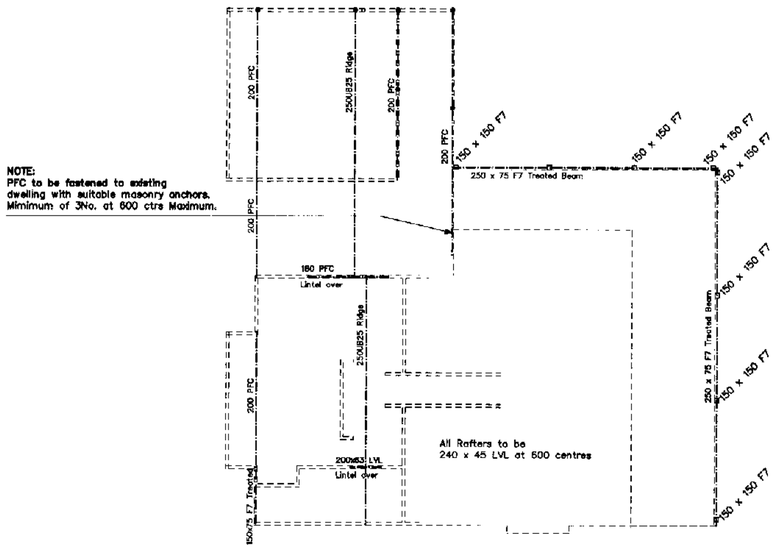
JACK HODGSON CONSULTANTS PTY. LIMITED.
Consulting Civil, Geotechnical, and Structural Engineers.
11 Bungan Street, MONA VALE. P.O. Box 389. Post Code 2103.
Telephone (02) 9979 6733. Facsimile (02) 9979 6926. A.C.N. 053 405 011

Designed	JDH	Drawn	SG	Job No.	Drawing No.
Checked	JDH	Scale	1: 100,20, uno.	21014	3
Date	18 MARCH 2004				



SECOND FLOOR MARKING PLAN

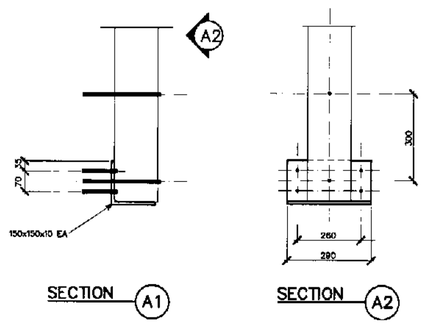
SCALE 1:100



NOTE: ALL Structural Beams to bear on Double Stud. Unless Noted Otherwise.

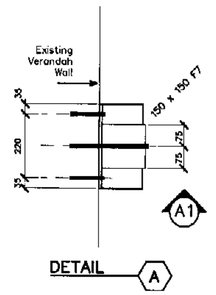
ROOF MARKING PLAN

SCALE 1:100



SECTION A1

SECTION A2



DETAIL A

PLAN OR DOCUMENT CERTIFICATION

I am a qualified....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEER...
I hold the following qualifications or licence No.....M.Eng.Sc.....
.....F.I.E.Aust....Nper3....Struct.Civil.No.149788.....
Further I am appropriately qualified to certify this component of the project.
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A.S.1170., A.S.1170.1, A.S.1170.2, A.S.1684., A.S.2870.1, A.S.3600., A.S.3700, A.S.4100

Jack D. Hodgson 7/4/04 .....
Name Date Signature

No.	Amendment	Drawn	Date

SECOND FLOOR & ROOF MARKING PLAN AND DETAILS

PROPOSED ALTERATIONS AND ADDITIONS
12 CORNICHE ROAD,
CHURCH POINT

MR. VW & MRS. FM FELTON

Our drawings are based on the information provided by:-
Mr & Mrs Felton
Drawing No:- 22.17.1,3-10 by Carol Voss Date: September 2002
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Designed	JDH	Drawn	SG	Job No.	Drawing No.
Checked	JDH	Scale	1:100,20. una.	21014	4
Date	18 MARCH 2004				

martens & associates

Posted	X
Faxed	
Emailed	
Courier	
By Hand	
Contact:	Andrew Norris
Our Ref:	2004G857JC2
Pages:	3

25th February 2004

Mr Vaughan Felton
12 Corniche Road,
Church Point, NSW,

Dear Vaughan,

RE: SEDIMENT AND EROSION CONTROL PLAN

Overview

The site is located at 12 Corniche Road, Church Point (Lot 21, DP661001) with relevant site features including the existing three bedroom dwelling and works area identified on attached plan (2004G857JD1). The site has a northerly easterly aspect with relatively steep slopes across the site. Slopes in the proposed works area are approximately 35%. A driveway and car parking area exist to the front of the allotment.

The proposed development involves minor alteration to an existing dwelling, including the construction of a new master bedroom, bathroom, laundry and office. These additions will involve the construction of a 4th level over the verandas at the rear of the residence. This extension shall be supported by piers. The existing carparking area at the front of the property is also to be expanded and covered. This will involve cutting into the slope and the construction of new retaining structures.

Sediment and Erosion Control Requirements

The piers supporting for the 4th level shall involve minor earth works and limited disturbance of site soil and vegetation. It is recommended that no sediment control measures are necessary in this area.

The expansion of the existing parking area will require the following measures:

1. A sediment fence is to be positioned as indicated on the attached drawing. The sediment fence is to be constructed in accordance with the construction details shown. It is to be maintained at all times and inspected/cleared of accumulated sediment weekly and after significant (10mm) rainfall events.

2. Sand bags are to be laid across the driveway. The sand bags should be positioned so that drainage from the works area will be diverted into the sediment fence. The sand bags are to be wrapped in a continuous or overlapped layer of filter cloth to ensure that the bags stay joined together and aligned and divert all sediment and runoff to the fence.

26a Bay Road Arcadia, NSW 2159, Australia
Ph 02 9655 1417 **Fax** 02 9655 1416

> mail@martens.com.au
www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

The sediment fence and the sand bags are to be install prior to the commencement of site disturbance works. They are only to be removed once the upslope areas are 'finished' (ie. Paved, concreted, covered or revegetated to 75% ground cover).

Please call our offices if you have any further queries regarding this matter.

For and on behalf of

MARTENS & ASSOCIATES PTY LTD

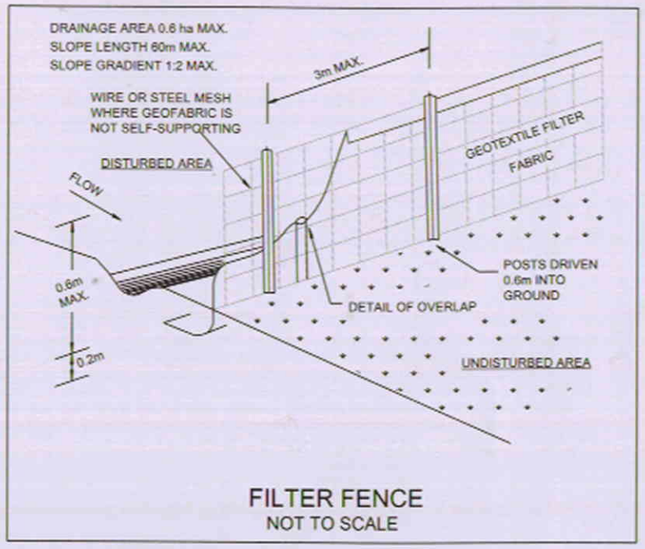
ANDREW NORRIS

BSc (Hons), MEngSci, MAWA

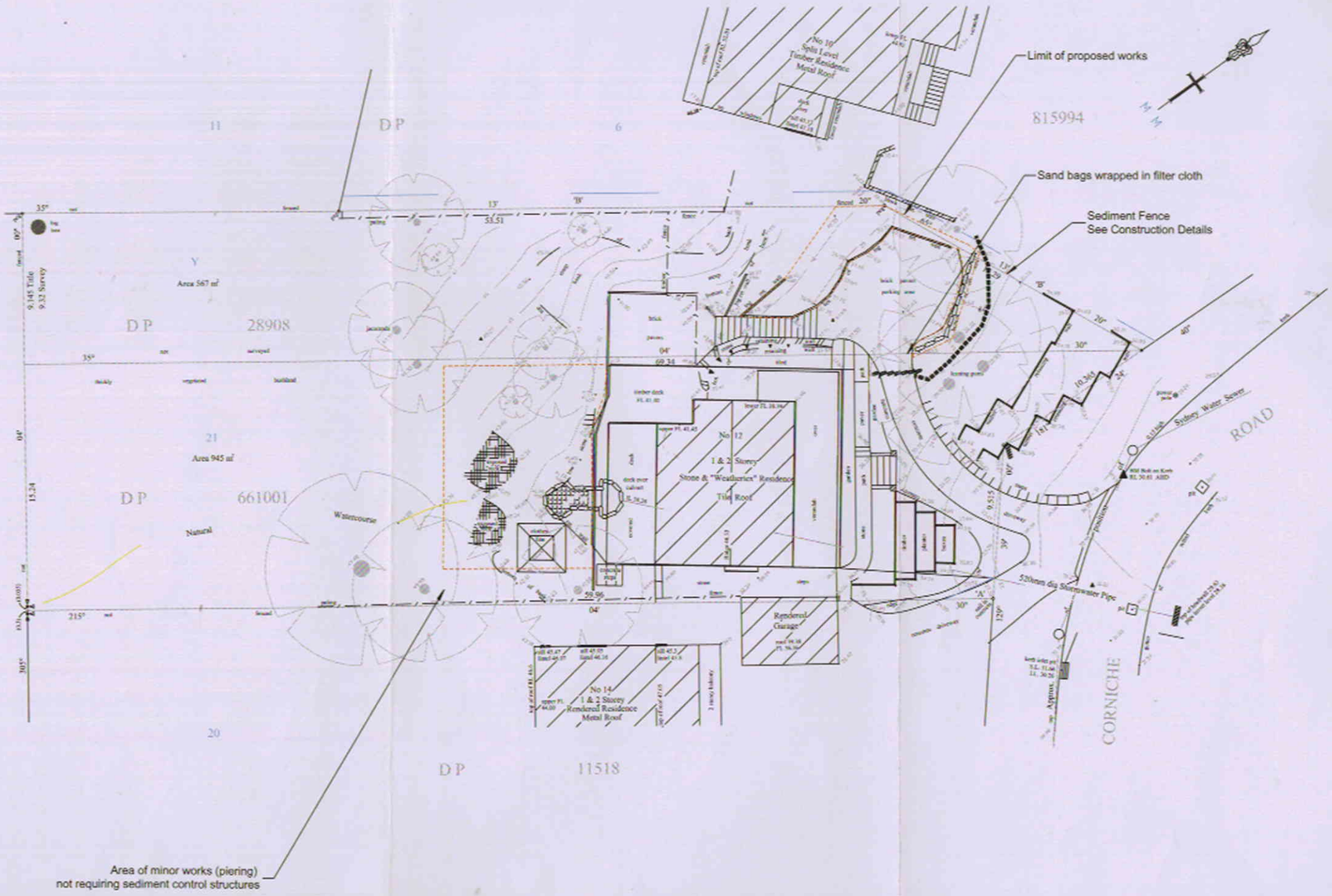
Senior Engineer

Construction Notes:

- The sediment fence should be constructed in accordance with the construction details below.
- Sand bags should be wrapped in filter cloth to hold the bags together.
- The sand bags should be laid directly on the concrete driveway and positioned so as to direct drainage into the sediment fence.
- Refer to letter 2004G857JC1 for management requirements.



FILTER FENCE
NOT TO SCALE



0 4 8 12 16 20
BAR SCALE: meters

SURVEY NOTES:
- Levels are on the Australian Height Datum (A.H.D.).
- Origin of levels BM Bolt on Kerb (9)
  R.L. 30.61 A.H.D.
- Boundaries not marked.
- Tree trunks and spreads are diagrammatic only.
- S.L. denotes Surface Level.
- I.L. denotes Invert Level.
- Covenant D301902 - Lot Y.
- Contours over part of the land only.
- Contour interval is 1.0 metre.
- Contours are indicative of ground form only.
- 'A' denotes Right of Carriageway variable width (DP 648494).
- 'B' denotes Easement for Water Supply 0.915 wide (K898726, K932946).
- Sewer pipe location taken from Water Board records is approximate only.

Plan provided by: SOUTER & ASSOCIATES

martens & associates
26A Bay Road
Arcadia, NSW 2159 Australia
Phone: (02) 9655 1417
Fax: (02) 9655 1416
Email: mail@martens.com.au
Internet: http://www.martens.com.au

MARTENS & ASSOCIATES PTY LTD
Sustainable Solutions
Environmental - Geotechnical - Hydrological
Hydraulic - Wastewater Engineers

CLIENT/ PROJECT: Vaughan Felton

THIS PLAN MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY
All measurements in mm unless otherwise specified.

TITLE: Sediment and Erosion Control Plan

PROJECT MANAGER: A. Norris

PROJECT REFERENCE / DRAWING NUMBER: 2004G857JD1

DESIGNED:	DC
DRAWN:	DC
REVIEWED:	GH
DATUM:	na
HORIZONTAL RATIO:	1:300
VERTICAL RATIO:	1:300
SHEET	1 OF 1 SHEETS
PAPER SIZE:	A3

REV.	DESCRIPTION	DATE	ISSUED
1	Sediment and Erosion Control Plan	19/02/04	AN

STATEMENT OF ENVIRONMENTAL EFFECTS

Vegetation
- there will be no change to the existing vegetation

Privacy
- there will be no change to privacy conditions
- new windows are positioned looking over the subject site not onto adjoining sites.

Overshadowing
- as can be seen on the attached shadow diagrams, no significant change is anticipated with the additions.

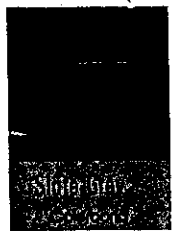
Views
- no views for adjoining properties will be affected.

Bush Fire Precautions
- bronze flywire screens will be provided to all windows and doors on external façades
- all eaves and soffits will be tightly sealed as will all doors and windows

SPECIFICATION

- all work to be carried out under the supervision of a registered structural engineer.
- all levels and dimensions to be checked on site by the contractor before any work commences or any ordering is undertaken, and any discrepancy cleared in writing with the author of the plans.
- all work to be in accordance with the Building Code of Australia and Australian Standards

Roofing
- colourbond corrugated zincalume



External Walls
- hardiflex external cladding
- paint - cream to match the existing residence

Windows + Doors
- all to match existing aluminium framed units.

CONTENTS

Job no. 22-17

THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN

client
MR. V.W. + MRS. F.M. FELTON

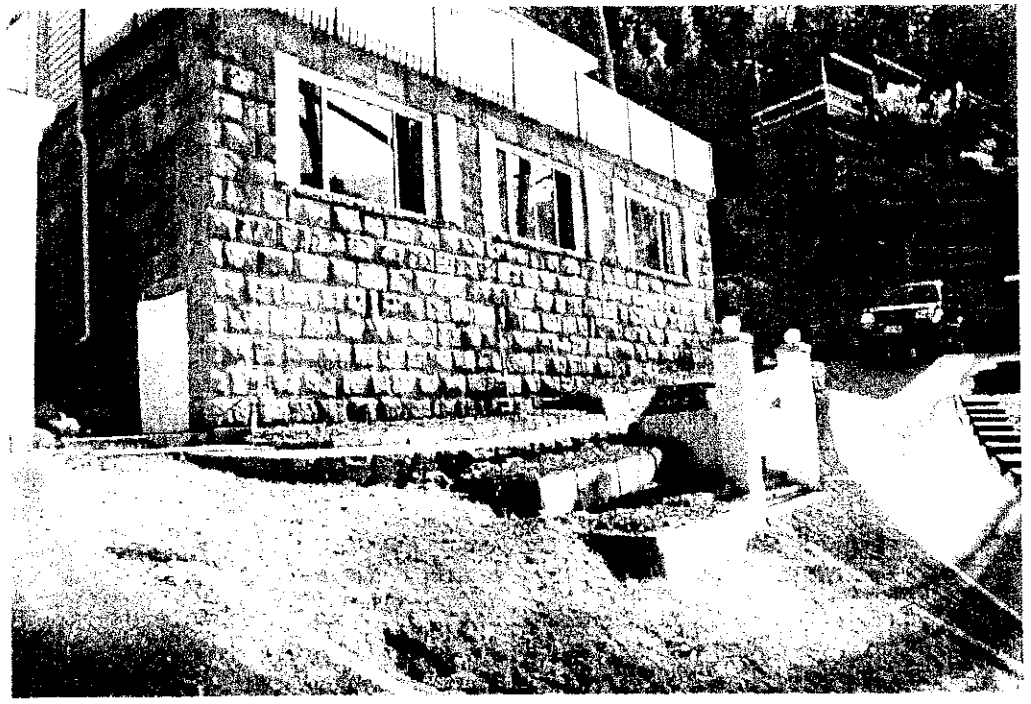
project
PROPOSED ALTERATIONS AND ADDITIONS TO EXISTING RESIDENCE

site
LOT 21 IN D.P. 661001 AND PART OF LOT Y IN D.P. 28908

address
12 CORNICHE ROAD
CHURCH POINT

date : september 2002
scale : 1:100 + 1:200
drawn : carol voss
p.o. box 300
church point 2105
n.s.w

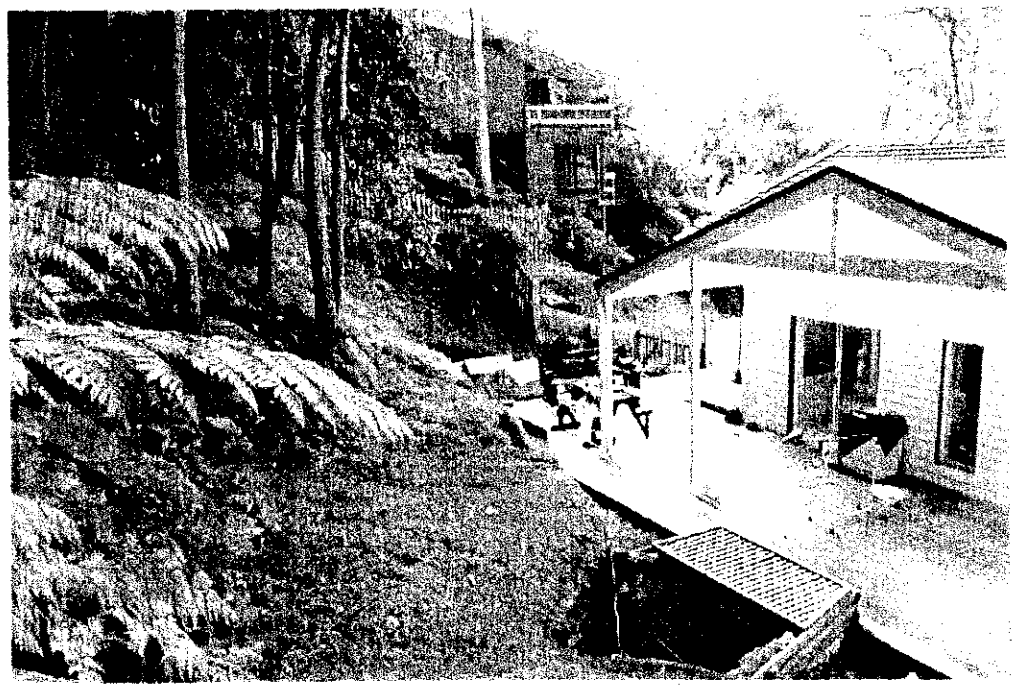
drawing number:
22.17. 1 of 10

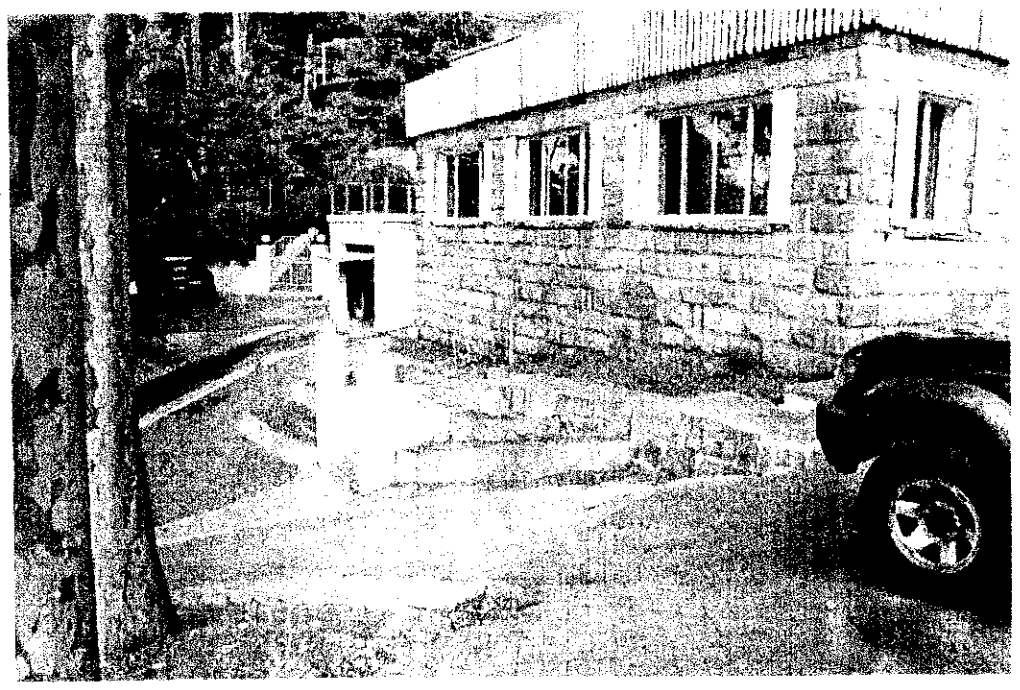


THE COUNCIL OF PITTWATER

APPROVED

DEVELOPMENT CONSENT PLAN





drawing number:

22.17.2 of 10

4100

• existing parking area extended as indicated – new slab on r.c. piers all to structural eng. detail

1 10900

700 set back

8200 o/a carport

• existing log wall removed - new retaining wall to structural eng. detail.

COVERED PARKING AREA

37.75

• timber uprights on metal shoes on r.c. pier footings all to struct. eng. detail

± 4800

struct. eng. detail 330 retain. wall

± 8028

N° 10

3700

6500 set back

± 2300

± 2800

N° 12

THE COUNCIL OF PITTWATER

APPROVED

DEVELOPMENT CONSENT PLAN

10.465

existing driveway

9.516

BEDROOM 3

HALL

38.39

BEDROOM 2

BATH ROOM

BATH ROOM

BEDROOM 4

GARAGE

existing 520° stormwater pipe

N° 14

CORNICHE ROAD

SYDNEY WATER APPROVED

1. Position of structure in relation to Sydney Water's assets is satisfactory.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licenced plumber/drainer.
3. It is the owner's responsibility to ensure that all proposed fittings will drain to Sydney Water's sewer.
4. Any Plumbing and /or Drainage Work to be carried out in accordance with the Sydney Water Act 1994, AS 3500 and the NSW Code of practice.
5. Gullies, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Balcony, Verandah, Floor or other cover unless otherwise approved by Sydney Water.
6. Property No. 3A09848

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

Per: 3/3/04

• GROUND FLOOR PLAN

1:100

drawing number:
22 • 17 • 5 of 10

900 set back

o treated timber uprights on metal connectors on r.c. pile footings all to structural eng. specification

• new (open) treated timber staircase 1 no. risers (185) treads (average 300) 1mt. high balustrade

existing treated timber retaining wall

41.40

Timber Deck to match adjoining deck

planter

40.75

existing stairs and sand stone retaining wall

new colour bond roof over existing carparking area. aff to struct. eng. detail.

18.29

6500 set back

10.365

THE COUNCIL OF PITTWATER

APPROVED

DEVELOPMENT CONSENT PLAN

extent of exist. deck indicated with broken line

41.40

broken line indicates verandah edge above

timber framed section to form laundry - cladding to match exist.

LAUNDRY

KITCHEN

DINING

41.45

VERANDAH (existing)

horizontal beam to structural eng. specification to support new lean-to verandah roof

existing driveway

9.515

o proposed new timber stair 16 no. risers (185) 15 no. treads (300) 1mt high balustrade to match existing

190□ treated timber supports (x2) as indicated.

1mt high timber handrail

LIVING

900 set back

GARAGE

1100

1450

©FIRST FLOOR PLAN

1:100

drawing number:

22.17. 6 of 10

7850
100 5750 100 1800 100
1000 6850

treated timber stairs as indicated

STUDIO

s/door

1mt high balustrade

COVERED VERANDAH
treated timber

sliding door

existing ridge line 46.33

stair up from living room

MASTER BEDROOM
44.45

shelving

cupd.

shower

EN-SUITE

wc

tub

900

GARAGE

5950 5750 ±5150 ±4700 1900 1800 1200 ±4500 ±3200

o/a ± 17700

100 900 100 4400 600 100
1000 4500

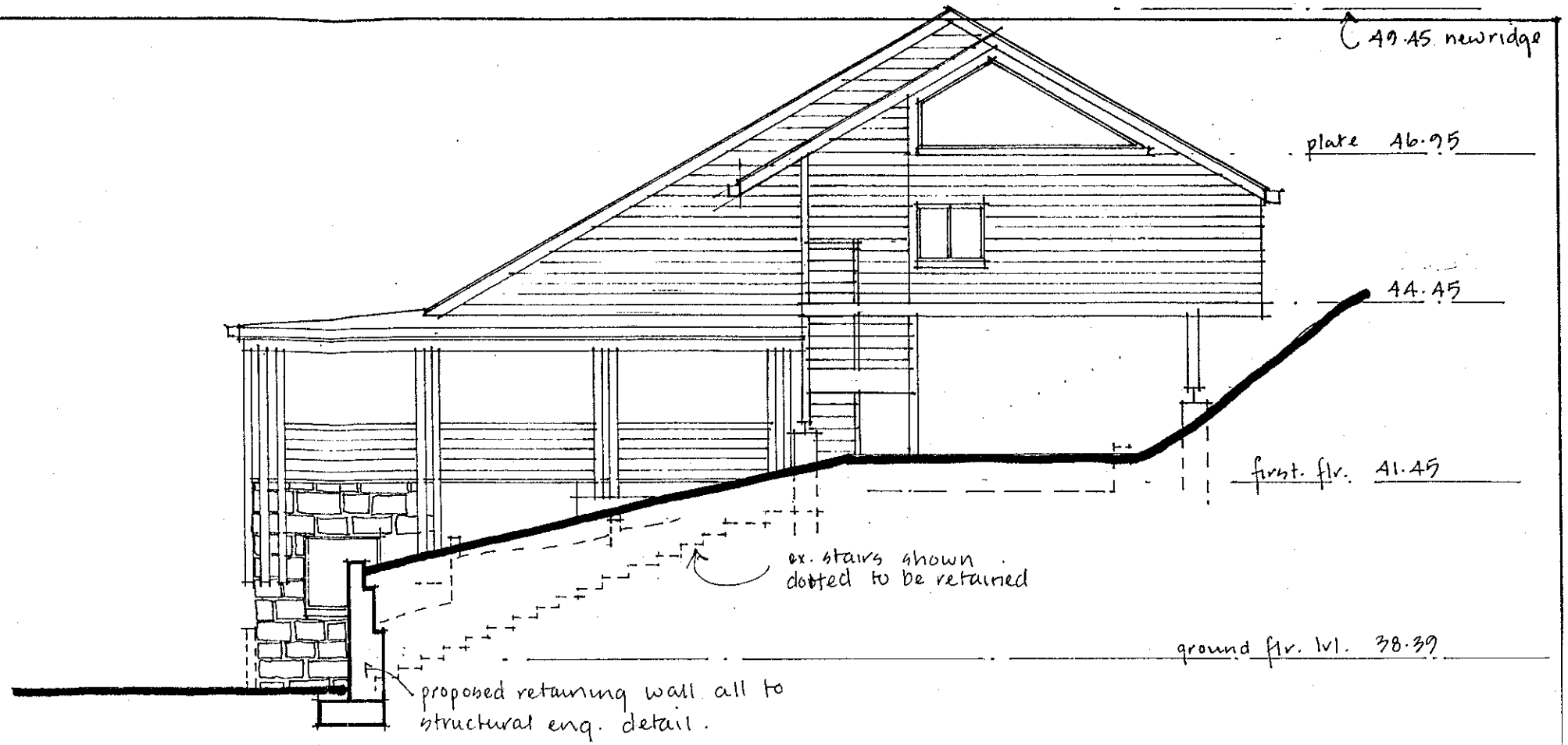
THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN

SECOND FLOOR PLAN

1:100

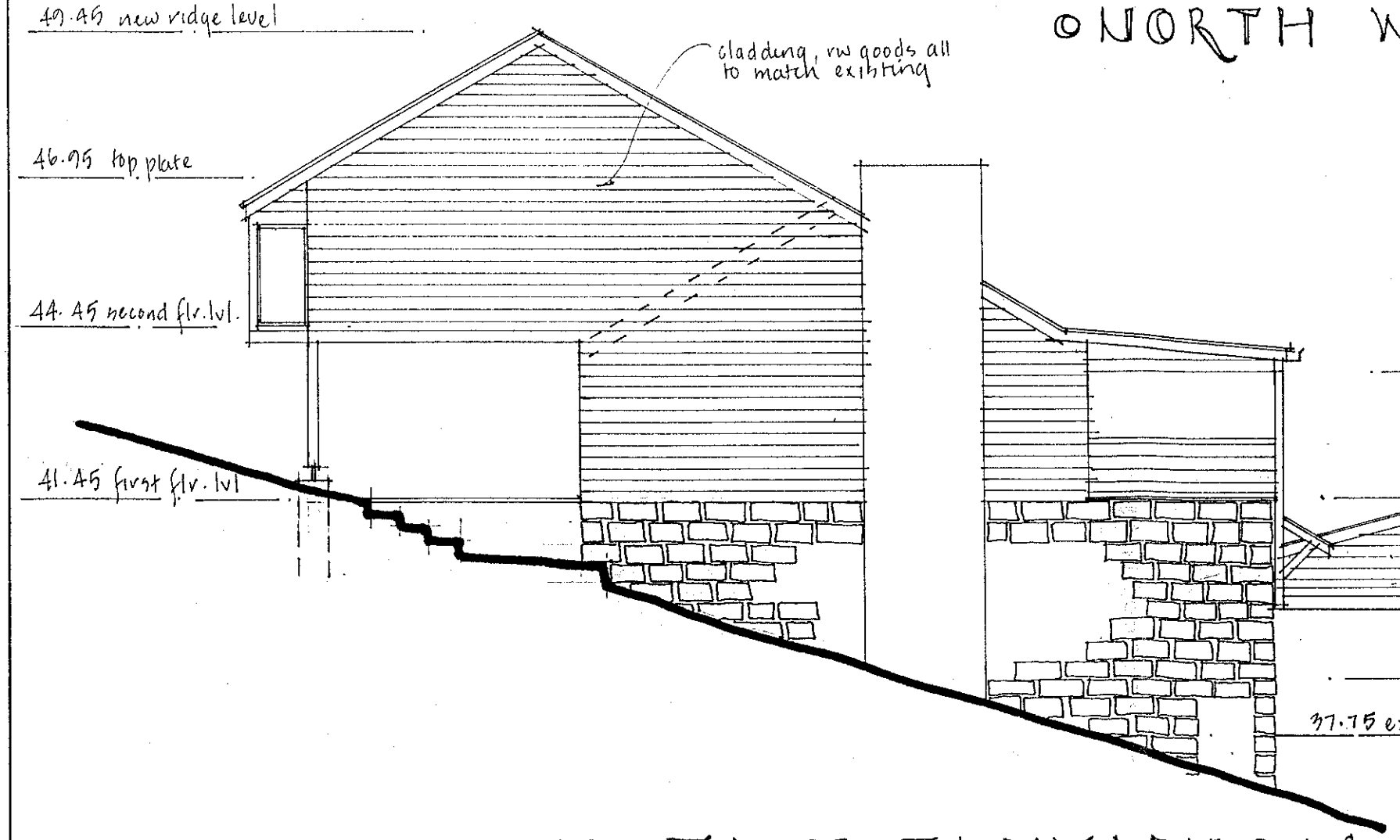
area - 113.16 sq. mts.

drawing number:
22.07. 7 of 10



© NORTH WEST ELEVATION

THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN

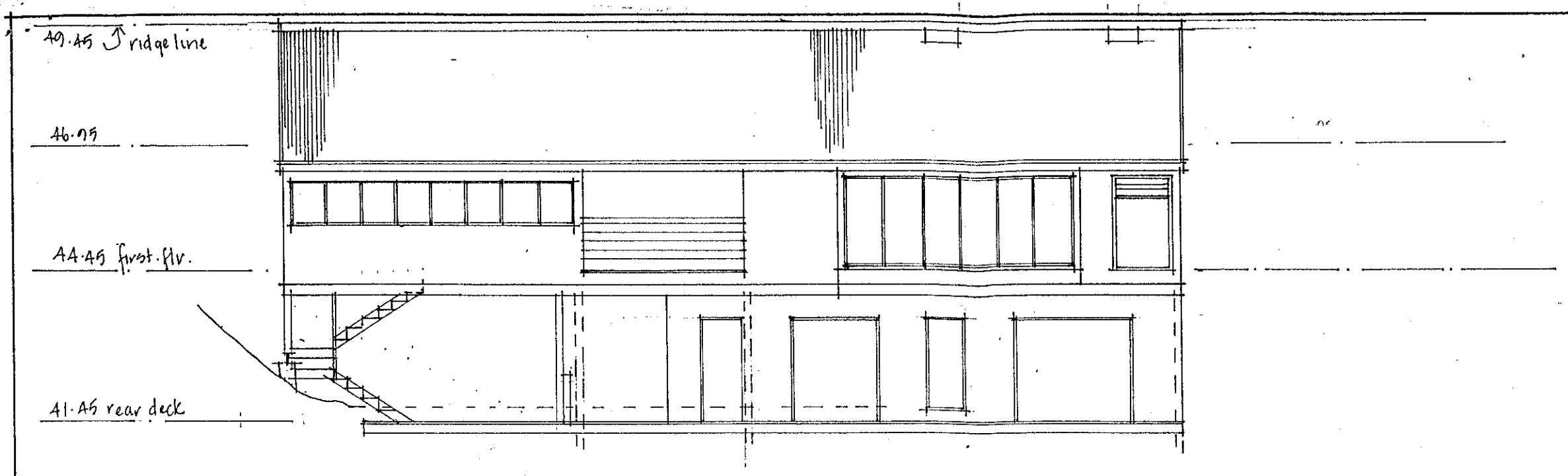


Note: cladding, roofing, rw goods all to match that used on the main building

proposed off-street parking area to be extended as indicated under the supervision of a registered structural engineer.

© SOUTH EAST ELEVATION

drawing number:
22.17.8 of 10

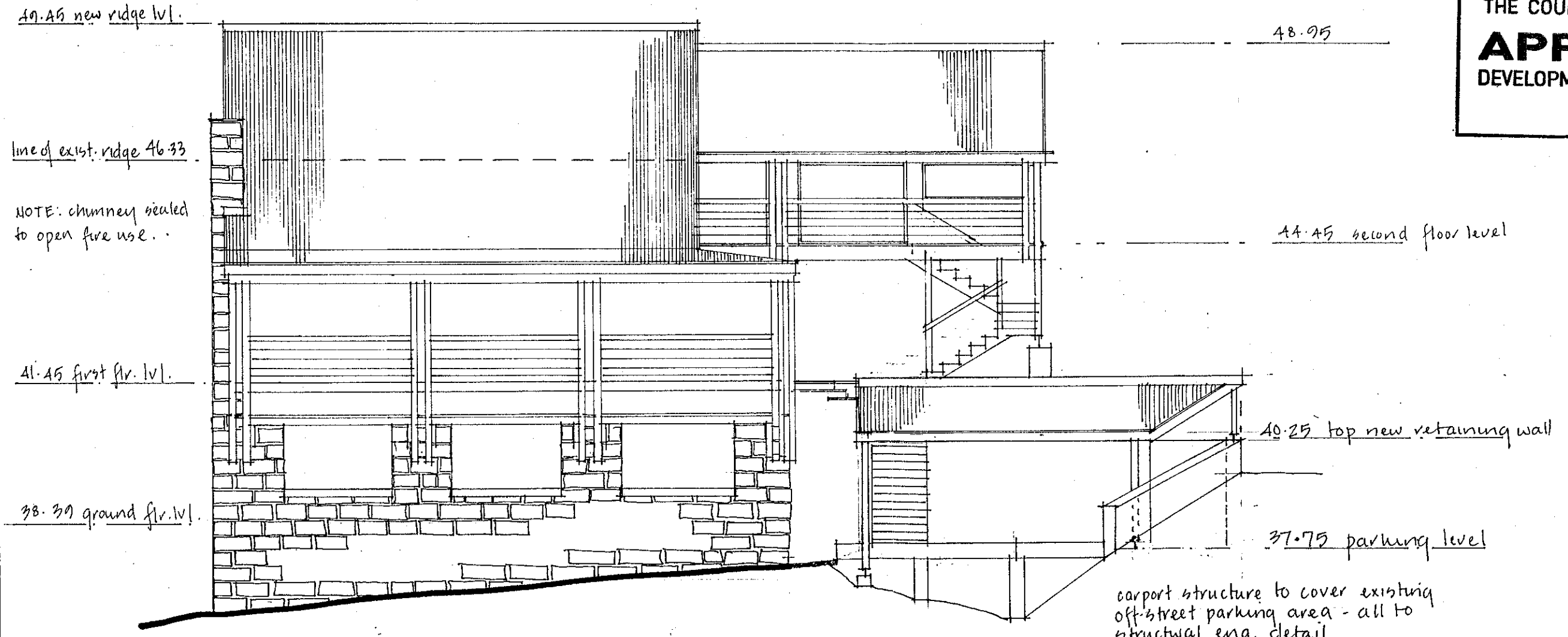


SOUTH WEST ELEVATION

SECTION A-A scale 1:100

THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN

drawing number:
22.17.9 of 10

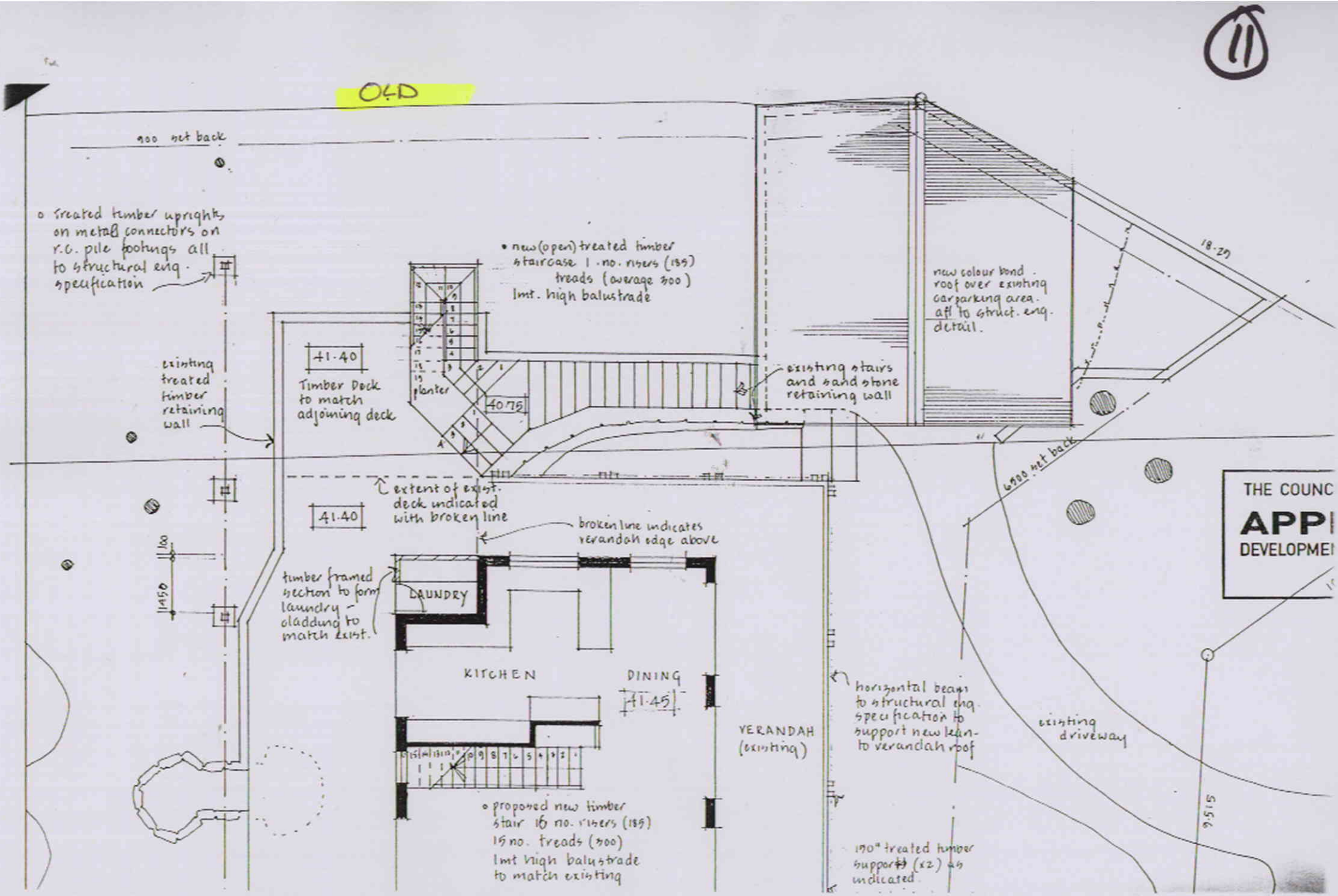


THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN

NORTH EAST ELEVATION

scale 1:100

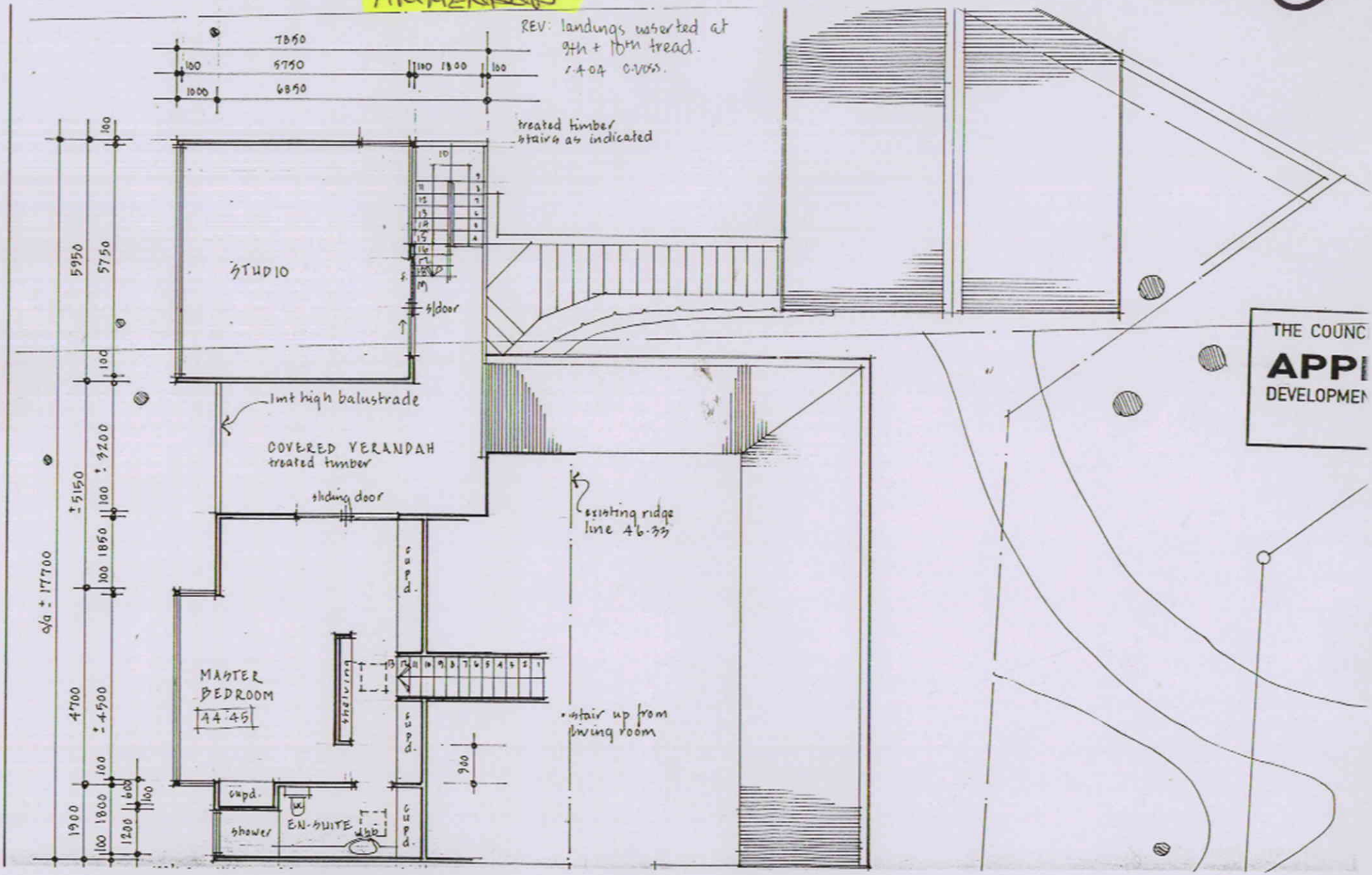
drawing number:
22.17. 10 of 10


OLD
900 set back
treated timber uprights on metal connectors on r.c. pile footings all to structural eng. specification
existing treated timber retaining wall
41.40
Timber Deck to match adjoining deck
new (open) treated timber staircase 1 no. risers (185) treads (average 300) 1mt. high balustrade
planter
40.75
existing stairs and sand stone retaining wall
new colour bond roof over existing carparking area. aff to struct. eng. detail.
18.29
6900 set back
extent of exist. deck indicated with broken line
41.40
broken line indicates verandah edge above
timber framed section to form laundry - cladding to match exist.
LAUNDRY
KITCHEN
DINING
41.45
VERANDAH (existing)
horizontal beam to structural eng. specification to support new lean-to verandah roof
existing driveway
9.515
proposed new timber stair 16 no. risers (185) 15 no. treads (300) 1mt high balustrade to match existing
190 x treated timber supports (x2) as indicated
THE COUNC
APP
DEVELOPME

AMENDED

11

REV: landings inserted at 9th + 10th tread.
1.4.04 C.Voss.



12

Vaughan and Fiona Felton

PO BOX 1046 MONA VALE NSW 1660
Telephone: (02) 9979-6526
Fax: (02) 9979-7366
Mobile: 0419 293 187
Email: vaughan@vf.com.au

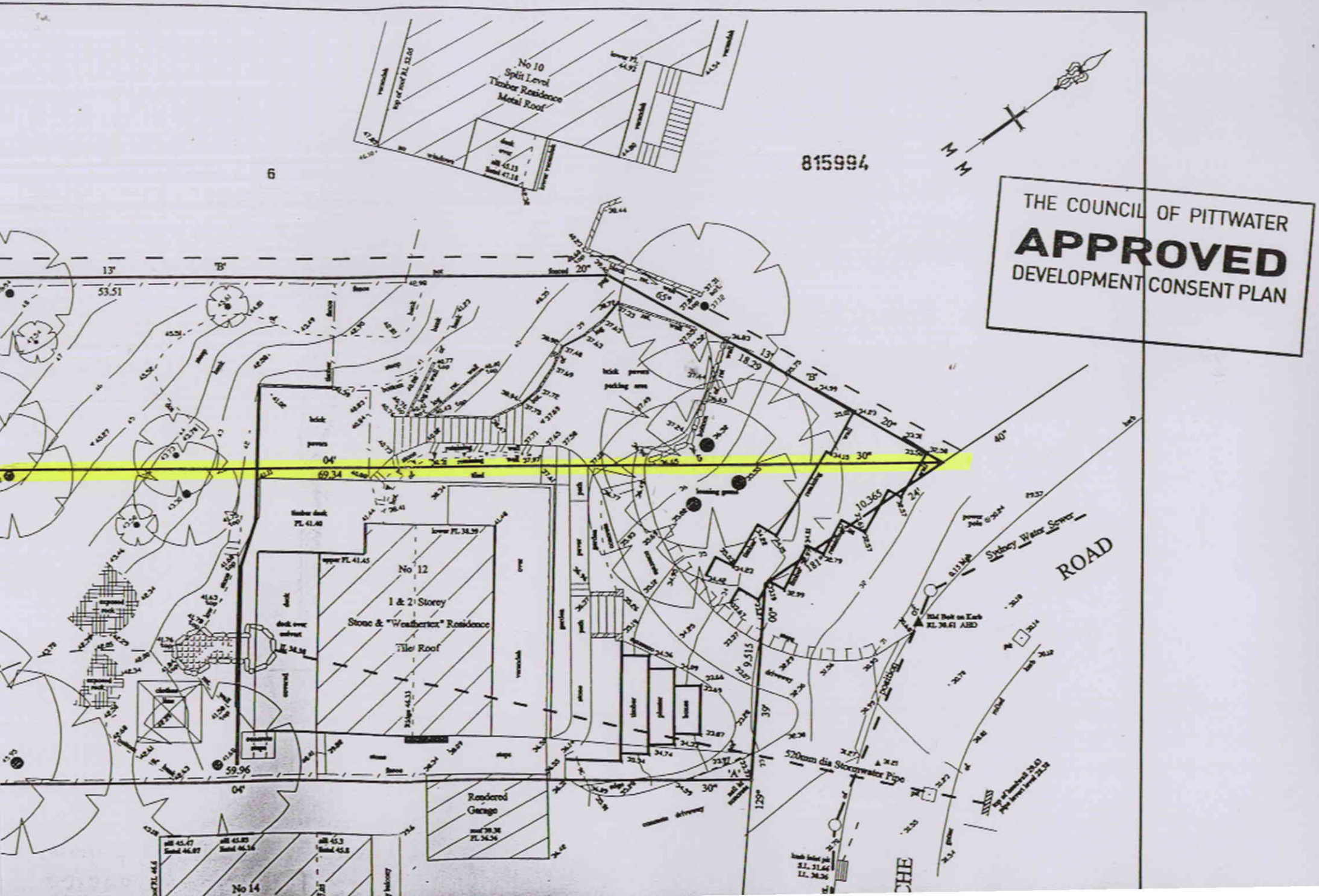
"Reference is made to the studio being built on the boundary on Lot 21, DP661001 & LotY, DP 28908. Submit to council's details on the construction material for the studio that is within 900mm from the boundaries in accordance with part 3.7.1 of the Building code of Australia.

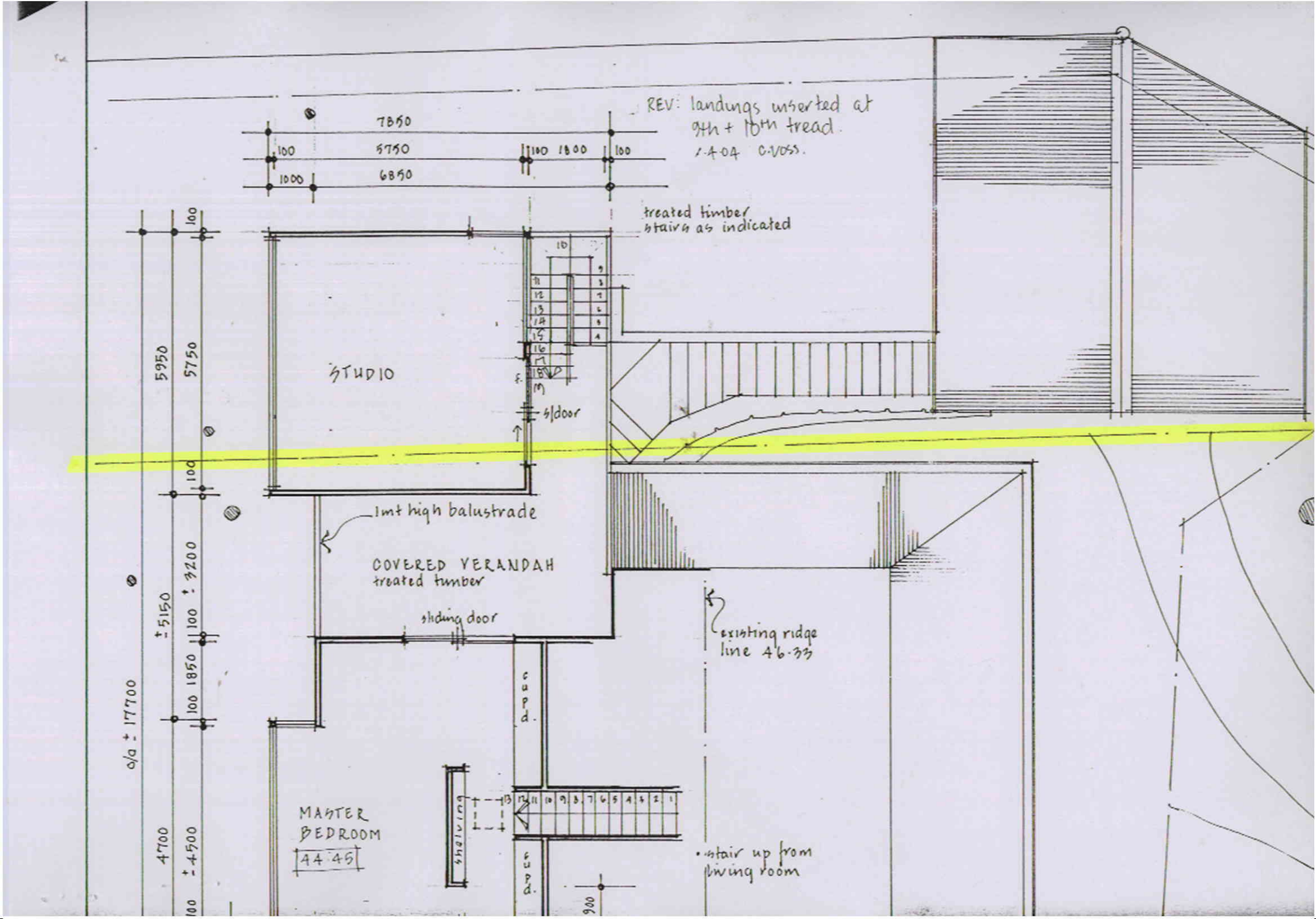
RESPONSE

As you can see, our property is actually one and a half lots – Lot 21 DP661001 and Lot Y DP28908. The boundary between the two of them runs right through the studio. As lot Y DP 28908 is, according to council, too small to sustain an independent building – it therefore has no possibility to be sold off as a separate property with separate buildings.

For this reason we consider that the above request by council is mute as the boundary between the two properties is inconsequential.

Vaughan Felton.


No 10
Split Level
Timber Residence
Metal Roof
6
815994
THE COUNCIL OF PITTWATER
APPROVED
DEVELOPMENT CONSENT PLAN
No 12
1 & 2 Storey
Stone & "Weatherex" Residence
Tile Roof
Rendered
Garage
No 14
Sydney Water Sewer
520mm dia Stormwater Pipe
ROAD
53.51
69.34
59.96
18.29
10.365
9.515


REV: landings inserted at 9th + 10th tread.
1.4.04 C.VOSS.
7850
100
5750
100
1800
100
1000
6850
treated timber stairs as indicated
STUDIO
s/door
1mt high balustrade
COVERED VERANDAH
treated timber
sliding door
existing ridge line 46.33
cupd.
MASTER BEDROOM
4445
shelving
cupd.
stair up from living room
900
5950
5750
100
100
±5150
±3200
100
100
1850
o/a ± 17700
4700
±4500
100

(3) BG1

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

VO 21014G.
30th May, 2004.

SCHEDULE OF WORKS
12 CORNICHE ROAD, CHURCH POINT

1. Erect sedimentation fence across the front of the property. Install diversion sausage on uphill side of road gully pit. Arrange for fence and catch areas to be cleaned regularly.

2. Surveyor to peg out works with the necessary offset pegs so that the progress of the work can be quickly checked.

3. Remove existing paving from the area of the excavation for the carport.

4. Excavate area for carport. Advise the Geotechnical Engineer when nearing completion so that he may determine if temporary support is required. Install any temporary support that may be required.

5. Remove all excavated material from the site. Keep road clear of soil.

6. Place reinforcement for the retaining wall footings and the floor slab in accordance with the Engineering Drawings submitted to Council. Place, vibrate and finish concrete.

7. Excavate all footings for the additions and place reinforcement and concrete.

8. Erect steelwork for carport and place roofing materials.

9. Proceed with the completion of the carpentry and steel work for the approved additions.

10. Clean up the site and remove sedimentation fence.

JACK HODGSON CONSULTANTS PTY. LIMITED.

J Hodgson

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

B61

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

VO 21014G.
30th May, 2004.

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(3) B61

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J. D. Hodgson M.Eng.Sc.,
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Nper3, Struct. Civil. No. 149788.
Director.

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

(9)

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

VO 21014F
15th April 2004.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 2103

Dear Sir,

12 CORNICHE ROAD, CHURCH POINT

This report on Structural Adequacy is based on a surface inspection of the subject property. No opening up of the existing developments or excavations have been carried out.

We have inspected the existing structure at the subject address and examined the plans of the proposed alterations and additions at the subject address.

We are satisfied that the existing structure is adequate to support the loads likely to be imposed on it by the proposed alterations and additions, provided any point loads are carried out directly down through the structure to new or old footings.

Our Mr Jack Hodgson is appropriately qualified and experienced to provide this certificate.

JACK HODGSON CONSULTANTS PTY. LIMITED.

J. D. Hodgson M.Eng.Sc.,
F.I.E.Aust., CP ENG.
Civil & Structural Engineer.
Nper3, Struct. Civil. No. 149788.
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ABN: 94 053 405 011

VO 21014F
15th April 2004.

The General Manager
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MONA VALE NSW 2103

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

VO 21014F
15th April 2004.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 2103

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We are satisfied that the existing structure is adequate to support the loads likely to be imposed on it by the proposed alterations and additions, provided any point loads are carried out directly down through the structure to new or old footings.

Our Mr Jack Hodgson is appropriately qualified and experienced to provide this certificate.

JACK HODGSON CONSULTANTS PTY. LIMITED.

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

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

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 12 CORNICHE RD, CHURCH POINT

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

I, JACK HODGSON (insert name) on behalf of JACK HODGSON CONSULTANTS PTY LTD (trading or company name)

on this the 15th of APRIL 2004 (date)

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

Geotechnical Report Details:

Report Title: RISK ANALYSIS AND RISK MANAGEMENT FOR PROPOSED ADDITIONS AT 12 CORNICHE RD, CHURCH POINT
Report Date: 24 OCT 2003
Author: J. HODGSON

Structural Documents list:

21014-1, 21014-2, 21014-3, 21014-4

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.

J. HODGSON (name)

J Hodgson (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 24 OCT 03 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 J Hodgson

Name JACK HODGSON

Chartered Professional Status MEngSc FIEAust

Membership No. 149788

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

VO 21014E.
27th January, 2004.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 1660

Dear Sir,

CONDITION OF PIPE UNDER HOUSE.
12 CORNICHE ROAD, CHURCH POINT.

1. AGE OF PIPE.

Our records indicate that the pipe is at least 14 years old. It may be deduced that the pipe was in place before the house on the site was constructed. The style of the house suggests that it was constructed in the early sixties. It is possible that the records of Council may provide the date of installation of the pipe as it is an extension of the culvert under the road.

2. CONDITION OF THE PIPE.

We have observed the condition of the pipe under the house at the subject address using a video tape provided by On Line Pipe & Cable Locating. The pipe is in excellent condition with only some minor encrustation of a few joints. These will not cause a failure of the pipe to transmit the calculated 100 ARI flow.

3. GEOTECHNICAL HAZARDS.

3.1. The possibility of the pipe leaking is a potential hazard. (**HAZARD ONE.**)

3.2. The possibility of the pipe failing is a potential hazard. (**HAZARD TWO.**)

3.3. The possibility of the pipe becoming blocked is a potential hazard. (**HAZARD THREE.**)

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

4. RISK ASSESSMENT.

4.1. HAZARD ONE. The pipe may leak with increasing life as some deterioration of the pipe can be expected. Any such leak will be minor and as the pipe is unlikely to run full and under pressure the volume of the leak will be small. Such a leak is more likely than not to follow the outside of the pipe down the slope than break out under the house. Therefore the likelihood of failure is assessed as 'Unlikely' ($>10^{-4}$). The consequences to property of such a failure are assessed as 'Minor' (>0.1%). The consequences to life of such a failure are assessed as 'Minor' ($>10^{-4}$). The risk to property is 'Low' (10^{-7}). The risk to life is 'Low' (10^{-7}).

4.2. HAZARD TWO. Failure of the pipe is possible when the pipes are reaching the end of their life. This could be within the 100 year period required by Council. It is not credible that a failure could occur simultaneously down the length of the pipe, It is more credible that a failure will occur at a weak spot in a particular pipe. Such a failure is more likely then not to impede the flow with possible surcharging of the entry pit. Some erosion of the soil material around the failure area may occur at the failure point but this would not adversely affect the house until at large number of flows had occurred down the pipe with the removal of a large volume of material. Therefore the likelihood of a failure affecting the house in the long term is assessed as 'Possible' ($>10^{-3}$). The consequences to property of such a failure are assessed as 'Medium' (>1%). The consequences to life of such a failure are assessed as 'Minor' ($>10^{-4}$) as the effect will be gradual and the house can be cleared of people in ample time. The risk to property is 'Moderate' (10^{-5}). The risk to life is 'Low' (10^{-6}).

4.3. HAZARD THREE. The likelihood of the storm water flows adversely affecting the house is assessed as 'Possible' ($>10^{-3}$). The consequences to property of such adverse effects occurring are assessed as 'Minor' (>0.1%) as the inlet pit is so constructed as to divert the water around the house if the pipe is blocked. The consequences to life of such adverse effects occurring are assessed as 'Insignificant' ($<10^{5}$) as the flows would not be more than 0.2 metres deep. The risk to property is 'Low' (10^{-6}). The risk to life is 'Very Low' (10^{-8}).

5. RISK MANAGEMENT.

5.1 For additional information under this heading see the Risk Analysis & Risk Management Report VO 21014C dated 26th October 2003.

5. RISK MANAGEMENT. Continued.

5.2 MAINTENANCE.

The pipe is to be inspected with a suitable camera at intervals not exceeding 5 years.

6. RISK ANALYSIS SUMMARY.

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	A leak in the pipe.	The failure of the pipe.	Blocking of the pipe
LIKELIHOOD	'Unlikely' ($>10^{-4}$).	'Possible' ($>10^{-3}$).	'Possible' ($>10^{-4}$).
CONSEQUENCES TO PROPERTY	'Minor' (>0.1%).	'Medium' (>1%).	'Minor' (>0.1%).
CONSEQUENCES TO LIFE	'Minor' ($>10^{-4}$).	'Minor' ($>10^{-4}$).	'Insignificant' ($<10^{-5}$).
RISK TO PROPERTY	'Low' ($>10^{-7}$).	'Moderate' (10^{-5}).	'Low' (10^{-6}).
RISK TO LIFE	'Low' ($>10^{-7}$).	'Low' (10^{-6}).	'Very Low' (10^{-8}).
COMMENTS	Acceptable.	Acceptable.	Acceptable.

JACK HODGSON CONSULTANTS PTY. LIMITED.

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

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

VO 21014D.
5th January, 2004.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 1660

Dear Sir,

12 CORNICHE ROAD, CHURCH POINT.

We have observed the condition of rhe pipe under the house at the subject address using a video tape provided by On Line Pipe & Cable Locating.

The pipe is in excellent condition with only some minor encrustation of a few joints. These will not cause a failure of the pipe to transmit the calculated 100 ARI flow.

This exploration of the pipe extended down to the road in front of the subject property.

It is our opinion that the pipe can be expected to remain in good condition for the next 100 years.

Our Mr Jack Hodgson is appropriately qualified and experienced to give this certificate.

JACK HODGSON CONSULTANTS PTY. LIMITED.

J Hodgson

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

DIRECTOR: J.D. HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788
11 Bungan Street, Mona Vale NSW 2103
PO Box 389 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

VN 19764.
12th June, 2002.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 1660

Dear Sir,

12 CORNICHE ROAD, CHURCH POINT.
BC No: BC0060/02.

We have plotted the catchment of the water course that runs under the house at the subject address and measured the area. The area is 1.71 Ha and the 100 ARI flow for the catchment is 0.684 m^3/s.

The pit at the entry to the conduit under the house is some 2.3x1.5 metres in area and averages 1.9 metres in depth. The conduit varies in shape and size and finally exits from under the road opposite the house in to a continuation of the water course.

Our calculations show that the pit and conduit combined are more than adequate to pass the 100 ARI flow without surcharging the pit and thus flooding the house.

Our Mr. Jack Hodgson is appropriately qualified and experienced to provide this certificate.

JACK HODGSON CONSULTANTS PTY. LIMITED.

J. D. Hodgson M.Eng.Sc.,
F.I.E.Aust., CP ENG.
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GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1 – To be submitted with Development Application

Development Application for Fiona Felton
Name of Applicant

Address of site 12 Corniche Road Church Point.

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

I, J HODGSON (Insert Name) on behalf of Jack Hodgson Consultants Pty Limited. (Trading or Company Name)

on this the 26-10-03 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least $2million.
I have:

Please mark appropriate box

☒ Prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Geotechnical Risk Management Guidelines and the Pittwater Council Policy

☐ Am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Geotechnical Risk Management Guidelines and the Pittwater Council Policy

☐ Have examined the site and the proposed development/alteration in detail and am of the opinion that the Development Application only involves Minor Development/Alterations that do not require a Detailed Geotechnical risk Assessment and hence my report is in accordance with the Policy requirements for Minor Development/Alterations.

☐ Provided the coastal process and coastal forces analysis for inclusion in the geotechnical report

Geotechnical Report Details:

Report Title: Risk Analysis & Risk Management for Proposed Additions at 12 Corniche Road Church Point.

Report Date: 26-10-03

Author: J HODGSON

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

Survey Plan Architectural Plans
Archives Jack Hodgson Consultants Pty Limited.

I am aware that the above geotechnical report, prepared for the abovementioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature .....

Name J HODGSON

Chartered Professional Status MEng Sc FIEAust

Membership No. 149788

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1(a) - Checklist Of Requirements For Geotechnical Risk Management Report for Development Application or Part V assessment

Development Application for Fiona Felton
Name of Applicant
Address of site 12 Corniche Road Church Point.

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

Geotechnical Report Details:

Report Title: Risk Analysis & Risk Management for Proposed Additions at
Report Date: 26-10-03 12 Corniche Road Church Point.
Author: J HODGSON

Please mark appropriate box

- ☑ Comprehensive site mapping conducted 10-9-03 (date)
- ☑ Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
- ☑ Subsurface investigation required
  - ☑ No Justification ..... See Report. .....
  - ☐ Yes Date conducted .....
- ☑ Geotechnical model developed and reported as an inferred subsurface type-section
- ☑ Geotechnical hazards identified
  - ☐ Above the site none
  - ☑ On the site
  - ☐ Below the site none
  - ☐ Beside the site none
- ☑ Geotechnical hazards described and reported
- ☑ Risk assessment conducted in accordance with Council's Policy
  - ☑ Consequence analysis
  - ☑ Frequency analysis
- ☑ Risk calculation
- ☑ Risk assessment for property conducted in accordance with Council's Policy
- ☑ Risk assessment for loss of life conducted in accordance with Council's Policy
- ☑ Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater
- ☑ Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved.
- ☑ Design Life Adopted:
  - ☑ 100 years
  - ☐ Other ..... specify
- ☑ Development Conditions to be applied to all four phases as described in Pittwater Geotechnical Risk Management Policy have been specified
- ☑ Additional action to remove risk where reasonable and practical have been identified and included in the report.

I am aware that Pittwater Council will rely on the Geotechnical Report, to which this checklist applies, as the basis for ensuring that the geotechnical risk management aspects of the proposal have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated, and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature .....
Name ..... J HODGSON .....
Chartered Professional Status M.Eng.Sc. F.I.E.Aust.
Membership No. 149 788

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

RISK ANALYSIS & RISK MANAGEMENT FOR PROPOSED ADDITIONS AT 12 CORNICHE ROAD, CHURCH POINT

1. INTRODUCTION.

1.1 This assessment has been prepared to accompany an application for development approval. The requirements of the Interim Geotechnical Risk Management Policy for Pittwater, June 2003 have been met.

1.2 The definitions used in this Report are those used in the Interim Geotechnical Risk Management Policy for Pittwater, June 2003.

1.3 The methods used in this Assessment are based on those described in Landslide Risk Management Concepts and Guidelines, March 2000, published by the Sub-Committee on Landslide Risk Management of the Australian Geomechanics Society and as modified by the Interim Geotechnical Risk Management Policy for Pittwater, June 2003.

1.4 The experience of the author of this Report spans some 46 years in many areas of Australia and in the Pittwater area, particularly in the last 30 years as Principal of Jack Hodgson Consultants Pty Limited.

2. PROPOSED DEVELOPMENT.

2.1 Construct an upper level on the rear of the existing house.

2.2 Make alterations to the internals of the existing house.

2.3 Construct a turning area alongside a covered car parking area and make adjustments to the existing driveway.

2.4 Details of the proposed development are shown on ten drawings numbered 22.17-1 to 10 prepared by Carol Voss and dated September 2002.

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

3. DESCRIPTION OF SITE & SURROUNDING AREA.

3.1 This property was inspected on 10th September 2003.

3.2 The block is located on the uphill side of the road with the house and land facing the west. The surface slopes up steeply from the road at approximately 30 degrees to the rear boundary that is in natural bushland. A creek is located in the rear of the property and runs in to a large open drain just before the rear deck. The drain runs under the property and is expelled on the far, east side of the main road. A concrete paved driveway, shared with No. 14, runs diagonally up the block to the side of the house and a levelled car space on the southern boundary. The paved car space shows settlement of ~10 cm. The downhill wall of the car space is mostly made of sandstone blocks but also shows that it may have been constructed on an old septic or other concrete structure and this may possibly be related to the settlement of the ca space. Below the car space the front yard is a terraced garden with a couple of large trees present. The front yard appears to have a low risk of instability. On the north side of the property, retaining the slope above the car space, are a couple of pine log walls that are a terraced garden in a low risk condition. The rear of the property appears to be a natural slope with only a couple of rough paths up to the back and a small grassed area directly in front of the deck and around the drain. The rear yard also appears to have a low risk.

3.3 The two-storey sandstone block and timber cottage house appears in good condition with no major cracking and no sign of movement associated with landslides.

3.4 The adjoining properties have been developed and are landscaped with trees and shrubs. The area at the rear is a well vegetated talus slope that ends at the toe of the sandstone escarpment forming Bayview Heights.

4. GEOLOGY OF THE SITE.

4.1 The site is underlain by interbedded sandstones, siltstones and shales of the Narrabeen Group that do not outcrop on the site but there are some rock exposures. The Narrabeen Group Rocks are Late Permian to Middle Triassic in age with the early rocks not outcropping in the area under discussion. The materials from which the rocks were formed consist of gravels, coarse to fine sands, silts and clays. They were deposited in a riverine type environment with larger floods causing fans of finer materials. The direction of deposition changed during the period of formation.

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4. GEOLOGY OF THE SITE. Continued.

4.2 The lower beds are very variable with the variations decreasing as the junction with the Hawkesbury Sandstones is approached. This junction is marked by the highest of persistent shale beds over thicker sandstone beds which are similar in composition to the Hawkesbury Sandstones.

4. The slope materials are colluvial in origin at the surface and become residual with depth. They consist of topsoil over sandy clays and clays that merge into the weathered rock at depths varying from 0.6 to 3 metres.

5. SUBSURFACE INVESTIGATION.

Previous work carried out on the site confirms the presence of the colluvium and the Narrabeen Group rocks. It is our opinion that no subsurface investigation is required to enable the structural elements of the proposed development to be designed.

6. DRAINAGE OF THE SITE.

6.1 ON THE SITE.

Attached is a letter reporting on a hydraulic investigation into the capacity of the pipe that runs under the house. This investigation found that the pit and pipe are adequate to pass the 100 ARI flow without surcharging the pit and flooding the house.

6.2 SURROUNDING AREA.

The adjoining properties are well drained with little or no overland flow entering the site. The natural water course that enters the pipe catches the runoff from uphill of the site.

7. GEOTECHNICAL HAZARDS.

7.1 ABOVE THE SITE.

7.1.1 The slope above the site is well vegetated with numerous trees, shrubs and ground cover. No geotechnical hazards likely to adversely affect the subject property were observed above the site.

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

7.2 ON THE SITE.

7.2.1 Soil creep of the clay materials overlying the rock may adversely affect the footings for the proposed upper level. **(HAZARD ONE.)**

7.2.2 The cut batters of the proposed car parking area are a potential hazard during the construction phase. **(HAZARD TWO.)**

7.2.3 Storm flows around the house from a blocking of the pipe under the house are a potential hazard. **(HAZARD THREE.)**

7.3 BELOW THE SITE.

7.3.1 No geotechnical hazards likely to adversely affect the subject property were observed below the site.

7.4 BESIDE THE SITE.

7.4.1 No geotechnical hazards likely to adversely affect the subject property were observed beside the site.

8. RISK ASSESSMENT.

8.1 ABOVE THE SITE.

8.1.1 As no geotechnical hazards likely to adversely affect the subject site were observed above the site, no risk analysis is required

8.2 ON THE SITE.

8.2.1 HAZARD ONE. The likelihood of an adverse effect due to this hazard occurring is assessed as 'Rare' ($>10^{-5}$). The consequences to property of the adverse effect occurring are assessed as 'Minor' (>0.1%) as soil creep is a very slow movement occurring mainly in very wet periods. The consequences to life of the adverse effect occurring are assessed as 'Insignificant' ($<10^{-4}$) as the slow movement of the creep phenomenon would give ample warning for the evacuation of the house. The risk to property is 'Very Low' (10^{-7}). The risk to life is 'Very Low' (10^{-7}).

8. RISK ASSESSMENT. Continued.

8.2 ON THE SITE.

8.2.2 HAZARD TWO. The likelihood of a slope failure occurring during the excavation of the car parking area and before the construction of the permanent support is assessed as 'Possible' ($>10^{-3}$). The consequences to property of such a failure are assessed as 'Minor' (>0.1%) as the effects of such a failure would be confined to the subject property and would not affect the existing house. The consequences to life of such a failure are assessed as 'Insignificant' ($<10^{-4}$) as the failure can be expected to occur during a period of heavy rain when the site would be vacant. The risk to property is 'Low' (10^{-6}). The risk to life is 'Very Low' (10^{-7}).

8.2.3 HAZARD THREE. The likelihood of the storm water flows adversely affecting the house is assessed as 'Possible' ($>10^{-3}$). The consequences to property of such adverse effects occurring are assessed as 'Minor' (>1%) as the inlet is so constructed as to divert the water around the house if the inlet is blocked. The consequences to life of such adverse effects occurring are assessed as 'Insignificant' ($<10^{5}$) as the flows would not be more than 0.2 metres deep. The risk to property is 'Low' (10^{-6}). The risk to life is 'Very Low' (10^{-8}).

8.3 BELOW THE SITE.

8.3.1 As no geotechnical hazards likely to adversely affect the subject site were observed below the site, no risk analysis is required

8.4 BESIDE THE SITE.

8.4.1 As no geotechnical hazards likely to adversely affect the subject site were observed beside the site, no risk analysis is required

9. SUITABILITY OF DEVELOPMENT FOR SITE.

9.1 GENERAL COMMENTS.

The proposed developments are acceptable for the site.

DIRECTOR: J.D. HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788
11 Bungan Street, Mona Vale NSW 2103
PO Box 389 Mona Vale NSW 1660
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9. SUITABILITY OF DEVELOPMENT FOR SITE. Continued.

9.2 GEOTECHNICAL COMMENTS.

No geotechnical hazards will be created by the completion of the proposed development.

9.3 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 **Section 10** are undertaken.

10. RISK MANAGEMENT.

10.1. TYPE OF STRUCTURE.

The proposed structures are suitable for the site.

10.2. EXCAVATIONS.

10.2.1 The cut batters for the proposed car parking area are to be supported by properly designed and constructed retaining walls. The Coefficient of Lateral Pressure to be used in the design is 0.7.

10.2.2 Construction of the retaining walls must be done as soon as possible after the excavation has been completed. 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 and the length of period before permanent support is installed.

10.3. FILLS.

10.3.1 No fills are shown on the plans of the proposed development.

DIRECTOR: J.D. HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788
11 Bungan Street, Mona Vale NSW 2103
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10. RISK MANAGEMENT. Continued.

10.4. FOUNDATION MATERIALS AND FOOTINGS.

10.4.1 It is recommended that all footings for the proposed development be supported on the underlying weathered rock using piers as necessary. The design ultimate bearing pressures are 1.2 MPa for spread footings or shallow piers and 2.4 MPa for piers in which the surface of the rock is deeper than 1.2 metres from the ground level at the top of the pier. Piers are to be potted not less than 0.4 metres into the rock.

10.5. STORM WATER DRAINAGE.

All storm water from the proposed development must be collected and piped to the street drainage system or to the drainage easement through any On Site Detention System that may be required by Council.

10.6. SUBSURFACE DRAINAGE.

All reta9ining walls are to be constructed with standpipes connected to the subsurface drains so that they may be flushed out.

10.7. INSPECTIONS.

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

10.7.2 It is recommended that all subsurface drains be inspected and approved before back filling is completed.

10.8 MAINTENANCE.

10.8.1 The property is to be maintained in good order and in accordance with the guidelines set out in CSIRO Sheet No. 10-91 1988 and the Australian Geomechanics Article "Landslide Risk Management Concepts and Guidelines" May 2002.

10.8.2 The pit on the uphill end of the pipe under the house is to be inspected at not more than one year intervals to avoid surcharging of the pit.

DIRECTOR: J.D. HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788
11 Bungan Street, Mona Vale NSW 2103
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11. GEOTECHNICAL CONDITIONS FOR ISSUE OF CONSTRUCTION CERTIFICATE.

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

The work is to be carried out in accordance with the Risk Management Report VO 21014C dated 26th October 2003.

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

The Geotechnical Engineer is to inspect and approve all subsurface drains before backfilling is completed.

The Geotechnical Engineer is to inspect all cut batters and determine if temporary support is required and, if necessary, in collaboration with the Structural Engineer determine the type of support that is to be used.

12. GEOTECHNICAL CONDITIONS FOR ISSUE OF OCCUPATION CERTIFICATE.

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

The work has been carried out in accordance with the Risk Management Report VO 21014C dated 26th October 2003.

The foundation materials of all footing excavations were inspected and approved before concrete was placed.

All subsurface drains were inspected and approved before backfilling was completed.

All cut batters were inspected and the need for temporary support determined and, if necessary, in collaboration with the Structural Engineer the type of support was determined.

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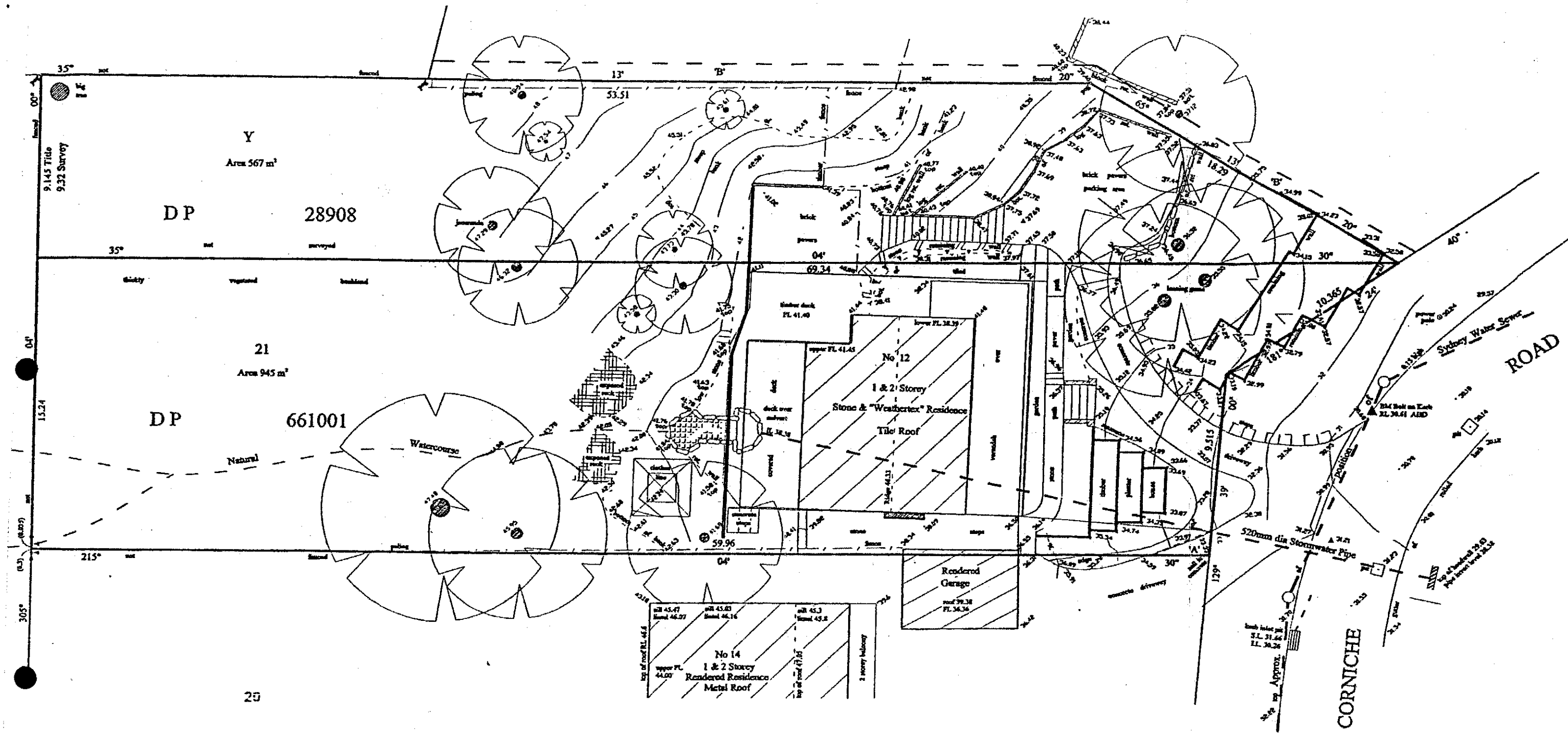
13. RISK ANALYSIS SUMMARY.

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	Soil creep effect on footings.	Failure of the cut batters of the car parking area during construction.	Storm water flows from the pipe under the house adversely affecting the house.
LIKELIHOOD	'Rare' ($>10^{-5}$).	'Possible' ($>10^{-3}$).	'Possible' ($>10^{-3}$).
CONSEQUENCES TO PROPERTY	'Minor' (>0.1%).	'Minor' (>0.1%).	'Minor' (>0.1%).
CONSEQUENCES TO LIFE	'Insignificant' ($<10^{-4}$).	'Insignificant' ($<10^{-4}$).	'Insignificant' ($<10^{-4}$).
RISK TO PROPERTY	'Very Low' (10^{-7}).	'Low' (10^{-6}).	'Low' (10^{-6}).
RISK TO LIFE	'Very Low' (10^{-7}).	'Very Low' (10^{-7}).	'Very Low' (10^{-7}).
COMMENTS	Acceptable.	Acceptable.	Acceptable.

JACK HODGSON CONSULTANTS PTY. LIMITED.

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



NOTES:
- Levels are on the Australian Height Datum (A.H.D.).
- Origin of levels BM Bolt on Kerb (9)
  R.L. 30.61 A.H.D.
- Boundaries not marked.
- Tree trunks and spreads are diagrammatic only.
- S.L. denotes Surface Level.
- I.L. denotes Invert Level.
- Covenant D301902 - Lot Y.
- Contours over part of the land only.
- Contour interval is 1.0 metre.
- Contours are indicative of ground form only.
- 'A' denotes Right of Carriageway variable width (DP 648494).
- 'B' denotes Easement for Water Supply 0.915 wide (K898726, K932946).
- Sewer pipe location taken from Water Board records is approximate only.

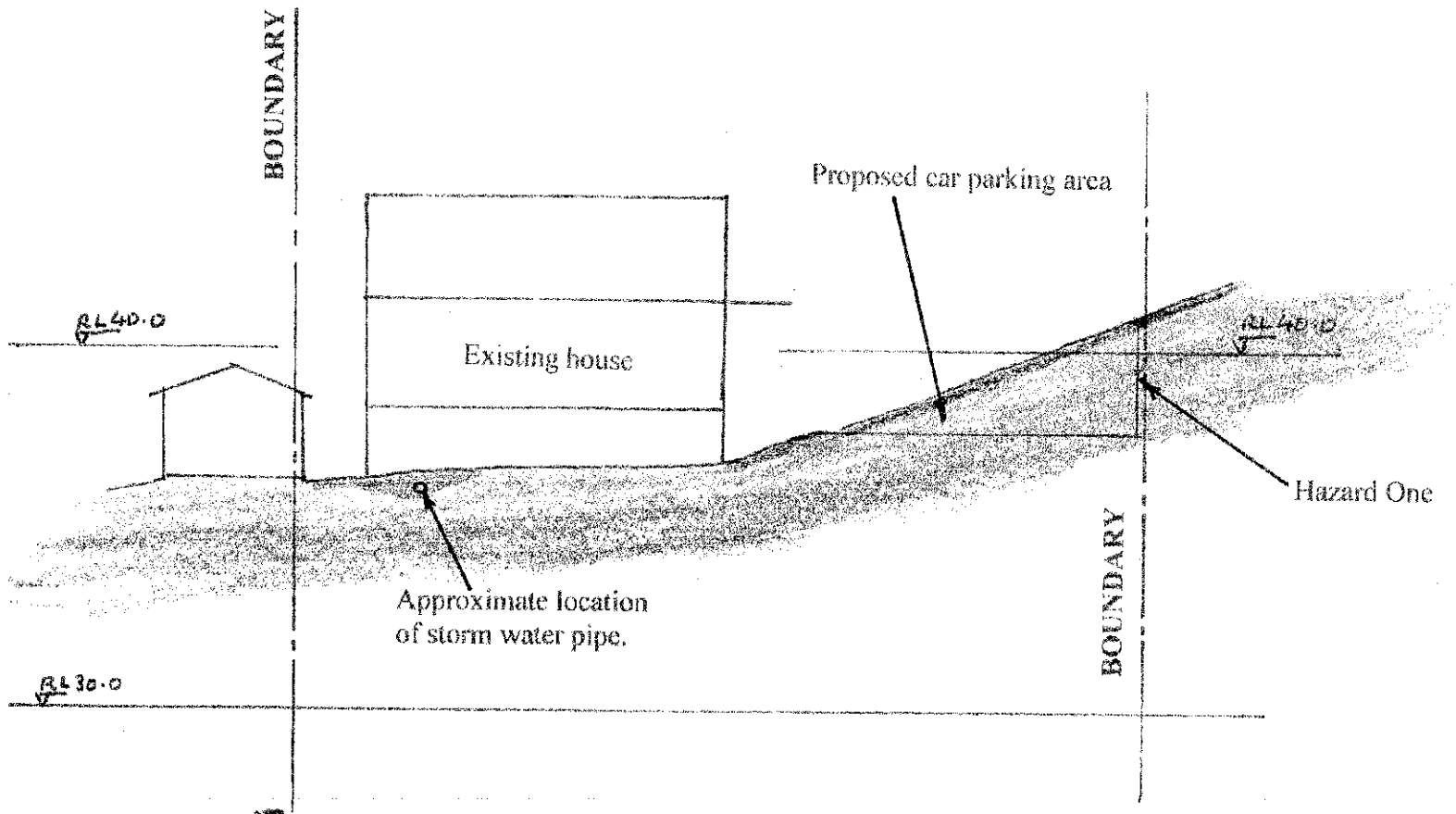
SOUTER & ASSOCIATES
CONSULTING SURVEYORS AND PLANNERS
SUITE 6, HERON COVE MARINA, QUEENS PDE (WEST), NEWPORT 2106
PHONE: 02 9979 5709 FAX: 02 9979 5489

L.J. SOUTER
REGISTERED SURVEYOR

CLIENT : MR & MRS FELTON
PLAN SHOWING DETAIL & LEVELS
OVER PART OF LOT 21 IN DP661001
AND PART OF LOT Y IN DP28908
12 CORNICHE ROAD, CHURCH POINT
L.G.A. PITTWATER

SCALE 1:100
DATE 24-10-2002
REF. No. 22-18

SITE PLAN
12 CORNICHE ROAD, CHURCH POINT
VO 21014-G1
Scale 1:200



TYPE SECTION
12 CORNICHE ROAD, CHURCH POINT
VO 21014-G2
Scale 1:200

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

VN 19764.
12th June, 2002.

The General Manager
Pittwater Council
P O Box 882
MONA VALE NSW 1660

Dear Sir,

12 CORNICHE ROAD, CHURCH POINT.
BC No: BC0060/02.

We have plotted the catchment of the water course that runs under the house at the subject address and measured the area. The area is 1.71 Ha and the 100 ARI flow for the catchment is 0.684 m^3/s.

The pit at the entry to the conduit under the house is some 2.3x1.5 metres in area and averages 1.9 metres in depth. The conduit varies in shape and size and finally exits from under the road opposite the house in to a continuation of the water course.

Our calculations show that the pit and conduit combined are more than adequate to pass the 100 ARI flow without surcharging the pit and thus flooding the house.

Our Mr. Jack Hodgson is appropriately qualified and experienced to provide this certificate.

JACK HODGSON CONSULTANTS PTY. LIMITED.

J Hodgson

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

Appendix A Qualitative Terminology and Risk Matrix

GEOTECHNICAL HAZARD RISK ASSESSMENT

QUALITATIVE TERMINOLOGY AND RISK MATRIX

The tables are based on the principles outlined in "Landslide Risk Management Concepts and Guidelines", as presented in Australian Geomechanics, Vol. 35, No. 1, 2000.

Qualitative Measures of Likelihood

Level	Descriptor	Description	Indicative Annual Probability
A	ALMOST CERTAIN	The event is expected to occur.	$\geq 10^{-1}$
B	LIKELY	The event will probably occur under adverse conditions.	$\geq 10^{-2}$
C	POSSIBLE	The event could occur under adverse conditions.	$\geq 10^{-3}$
D	UNLIKELY	The event might occur under very adverse circumstances.	$\geq 10^{-4}$
E	RARE	The event is conceivable, but only under exceptional circumstances.	$\geq 10^{-5}$
F	BARELY CREDIBLE	The event is almost fanciful.	$< 10^{-5}$

GHD LM

QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY

Level	Descriptor	Description	* Approximate Cost of Damage
1	CATASTROPHIC	Structure(s) completely destroyed or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.	> 100 %.
2	MAJOR	Extensive damage to most of structure, or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.	> 10 %.
3	MEDIUM	Moderate damage to some of structure, or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.	> 1 %.
4	MINOR	Limited damage to part of structure, or part of site requiring some reinstatement stabilisation works.	> 0.1 %.
5	INSIGNIFICANT	Little damage.	> 0.01 %.

* Note: The cost of damage is expressed as a percentage of the cost of the improved value of the unaffected structure(s).

Qualitative Measures of Consequences to Life

Level	Descriptor	Description	Indicative Vulnerability
1	CATASTROPHIC	Almost Certain Fatality	$\geq 10^{-1}$
2	MAJOR	Likely Fatality	$\geq 10^{-2}$
3	MEDIUM	Possible Fatality	$\geq 10^{-3}$
4	MINOR	Unlikely Fatality	$\geq 10^{-4}$
5	INSIGNIFICANT	Rare Fatality	$< 10^{-4}$

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY AND PERSONS

LIKELIHOOD	CONSEQUENCE TO PROPERTY OR TO LIFE					
	1 CATASTROPHIC	2 MAJOR	3 MEDIUM	4 MINOR	5 INSIGNIFICANT	
		10^{-3}	10^{-4}	10^{-5}	10^{-6}	
A- ALMOST CERTAIN	VH	VH	H	M	M	10^{-4}
B- LIKELY	VH	VH	H	M	L	10^{-5}
C- POSSIBLE	VH	H	M	L	VL	10^{-7}
D- UNLIKELY	H	M	L	L	VL	10^{-8}
E- RARE	M	L	L	VL	VL	10^{-9}
F- BARELY CREDIBLE	L	VL	VL	VL	VL	

Notes: 1. The risk matrix has been skewed in favour of consequence.
2. The diagonal lines give indicative (p.a.) risk levels for life.

Risk Level Implications

	Risk Level	Implications
VH	VERY HIGH RISK	Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to acceptable levels: may be too expensive and not practical.
H	HIGH RISK	Detailed investigation, planning and implementation of treatment options required to reduce risk to acceptable levels.
M	MODERATE RISK	May require investigation and planning of treatment options. Tolerable provided treatment options are implemented to maintain or reduce risks.
L	LOW RISK	Treatment requirements and responsibilities to be defined to maintain or reduce risk.
VL	VERY LOW RISK	Manage by normal slope maintenance procedures.

The following notes should be read in conjunction with the Qualitative Risk Analysis Matrix – Level of Risk to Property and Persons

Notes (1) The cost of damage is expressed as a percentage of the cost of the improved value of the unaffected property, which includes the land plus the unaffected structure(s).

(2) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the damaged portion of the property (land plus structures), which would include professional design fees, but does not include consequently costs such as legal fees, temporary accommodation, and stabilization works to "fix" the event.

(3) To assess an appropriate Descriptor, it is preferable to prepare a cost estimate and then select the appropriate Descriptor accordingly.

(4) If the Descriptor is being selected based on the Description alone, then the most severe Descriptor should be selected based on either the assessed extent of damage to the structure, or assessed extent of stabilization works, or assessed effect on adjacent structures.

APPENDIX J

SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

ADVICE	*GOOD ENGINEERING PRACTICE*	*POOR ENGINEERING PRACTICE*
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical consultant at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified. Driveways and parking areas may need to be fully supported on piers.	Excavate and fill for site access before geotechnical advice.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminant bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE		
SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and/or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction/	
INSPECTION AND MAINTENANCE BY OWNER		
OWNERS RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	

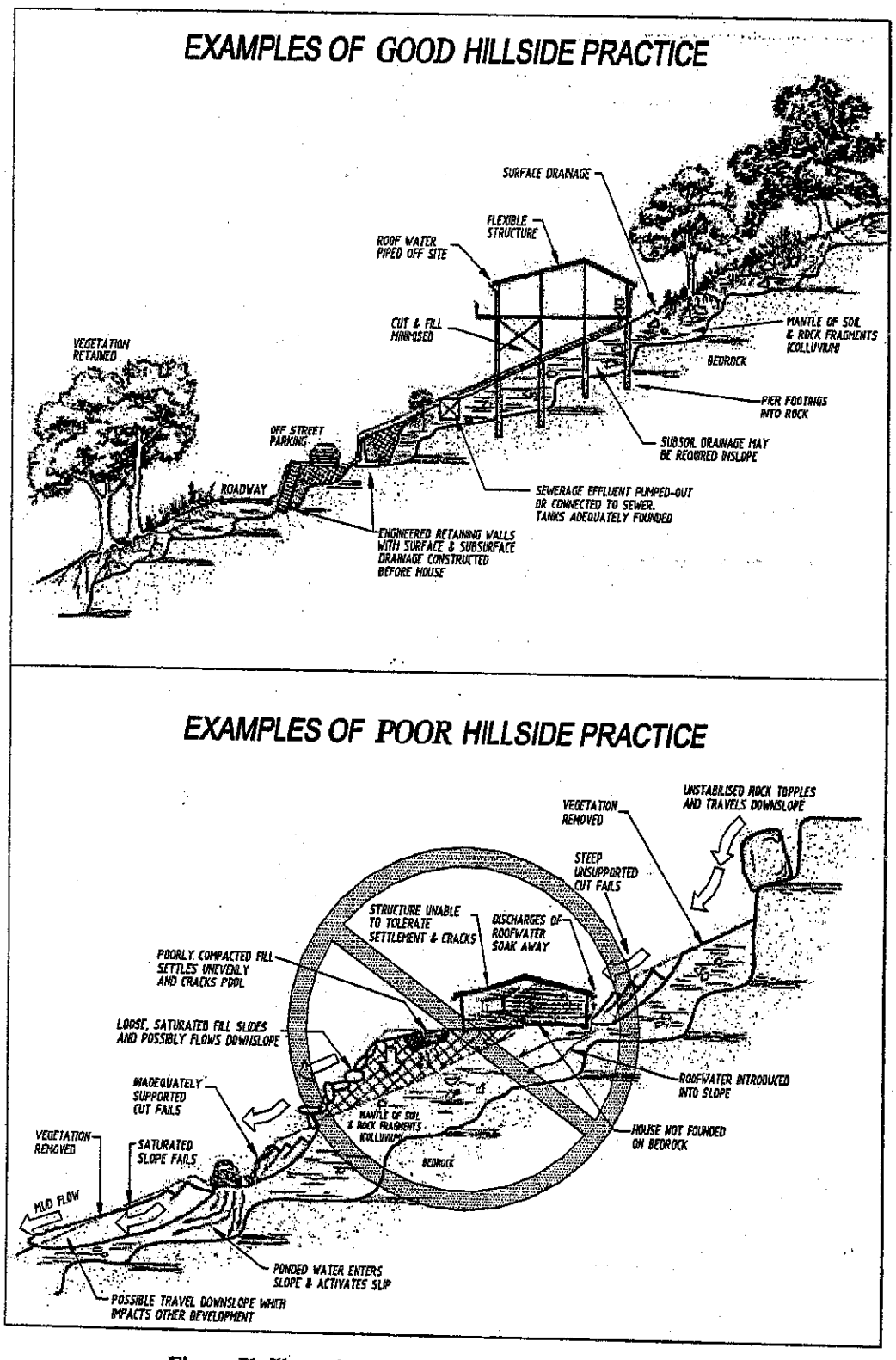


Figure J1 Illustrations of Good and Poor Hillside Practice

Pittwater Council ABN 61 340 837 871

All Correspondence to be addressed to General Manager

Units 9, 11 & 12/ 5 Vuko Place
WARRIEWOOD NSW 2102
Avalon Customer Service Centre
59A Old Barrenjoey Road, AVALON 2107

Postal Address
P.O. Box 882
MONA VALE NSW 1660
DX 9018MONA VALE

Telephone (02)9970 1111
Facsimile (02) 9970 7150
Internet www.pittwaterlga.com.au
Email: pittwater_council@pittwater.nsw.gov.au

Anna Williams, Development Officer
8am to 6pm Mon - Thurs, 8am to 5pm Fri
Phone 9970 1164

DA No N0051/03

In all correspondence please quote this number

13th February 2004

CAROL VOSS
PO Box 300
CHURCH POINT NSW 2015
Attention: Carol Voss/Vaughan Felton

Dear Sir/Madam,

Re: Deferred Commencement Conditions – Development Application N0051/03
12 Corniche Road, Church Point

I refer to the deferred commencement conditions 1(a) contained within the aforementioned consent, and your submission of geotechnical advice dated 5th January 2003.

Please be advised that pursuant to Regulation 95 (5) of the Environmental Planning and Assessment Regulation 2000, Council considered the details provided in accordance with deferred commencement Conditions 1a contained in Part 1 of the conditions of Development Consent are satisfactory. The following documentation therefore forms part of the consent documentation:

- Risk Analysis and Risk Management Report prepared by Jack Hodgson Consulting Pty Ltd, reference number VO21014C, dated October 2003, and
- Forms 1 and 1(a) signed by Jack Hodgson and referencing the Risk Analysis and Risk Management Report prepared by Jack Hodgson Consulting Pty Ltd, reference number VO21014C, dated October 2003, and
- Report on condition of pipe under house at 12 Corniche Road prepared by Jack Hodgson Consulting Pty Ltd dated 27th January 2004, reference No. VO 21014E

In this regard, the Consent becomes operative from the date of this letter subject to the conditions listed in Part 2 of the Consent.

Yours faithfully

Anna Williams

Anna Williams
DEVELOPMENT OFFICER