COUNCIL COPY

Bernie Cohen & Associates Pty Ltd Trading as
ESSENTIAL CERTIFIERS LIVERPOOL
ACN 100386650
ABN 84047117254

PO Box 5387 Prestons NSW 2170 ◆ Level 1, 405 Hume Hwy, Liverpool 2170
Telephone (02) 9612 5000 ◆ Facsimile (02) 9612-5050

CONSTRUCTION CERTIFICATE

C C No

CC2008-00439

This certificate is issued by a Private Certifying Authority and verifies that if the applicant carries out the proposed work in accordance with the plans and specifications that are approved the work will comply with the Environmental Planning and Assessment Regulation 2000

COUNCIL **PITTWATER**

APPLICANT

Name	Casey Brown Architecture
Address	Level 1 63 William Street, EAST SYDNEY 2010
Contact no (telephone/fax)	0418 283 323

OWNER

Name	Hill, Mr Michael & Mrs Leighsa
Address	213-215 Riverview Road, AVALON 2107

SUBJECT LAND

Address	213-215 Riverview Road, AVALON 2107
	Lot No Y
	DP - 110460

DESCRIPTION OF DEVELOPMENT

Type of Work ■ Building work ☐ Subdivision

Description Stage 2 - Construction of New Dwelling & Swimming Pool

SCANNED
20 FEB 2008
PITTWATER COUNCIL

Essential Certifiers Liverpool Certificate No CC2008-00439

R#233699
18/2/08

COUNCIL'S D/A CONSENT

Development Consent No	N0390/07
D A Approval Date	20/09/2007

BUILDING CODE OF AUSTRALIA BUILDING CLASSIFICATION

1a & 10b

BUILDER or OWNER/BUILDER

Name	Bellevarde Constructions
Contractor Licence No	31493

$ VALUE OF WORK

Building	$2,884,849 22

DATE C C APPLICATION RECEIVED

Date Received	5/10/2007

DETERMINATION

Decision	Approved	Stage 2
Date of Decision	25/10/2007	14/02/2008

ATTACHMENTS

- Council Receipt No 226513 for LSL fee dated 16/10/07
- Home Owners Warranty Certificate No 1019167 dated 23/10/07
- Sydney Water Quick Check dated 11/10/07
- BASIX Certificate No 149831S dated 23/7/07
- Tree Management Report by "Grown My Way" Tree Services dated June 2007
- Dilapidation Reports by Northern Beaches Consulting Engineers Job No 070954 dated October 2007 (for 2 Cabarita Rd, 213-215 Riverview Rd & 211 Riverview Rd)
- Structural Certificate by Murtagh Bond dated 7/2/08

Essential Certifiers Liverpool Certificate No CC2008 00439

ATTACHMENTS cont

- Geotechnical Risk Management Policy for Pittwater
- Structural Plans by Murtagh Bond Job No 07-026

  Drg No S010 Rev 1 dated 31/1/08

  Drg No S102 Rev A & S103 Rev A dated 31/1/08
- Hydraulic Detail Plan by Rafeletos Zanuttini Job No PC6994

  Sheet No 1 Issue B dated 8/11/07
- Landscape Certificate by Jane Coleman Landscape Architect dated 15/10/07
- Landscape Plan by Jane Coleman Landscape Architect Project No H3903

  Drg No DA L/01a Issue A dated July 2007
- Survey Plan by Casey Brown Architecture Project No H3903

  Drg No A001 Rev B dated 6/2/08
- $30 00 Council Submission Cheque

IMPORTANT NOTE It is the applicant's responsibility to ensure the mandatory PCA site sign supplied herewith, is displayed at this building site throughout construction

PLANS AND SPECIFICATIONS APPROVED

List plan no(s) and specifications reference

- Architectural Plans by Casey Brown Architecture Project No H3903

  Drg No A102 1 Rev C dated 6/2/08

  Drg No A102 2 Rev E dated 7/2/08

  Drg No A102 5 Rev C dated 7/2/08

  Drg No A202 Rev B dated 7/2/08

  Drg No A301 Rev B dated 7/2/08

  Drg No A302 Rev B dated 8/2/08

  Drg No A401 Rev B dated 8/2/08

  Drg No A5 1 Rev B dated 8/2/08
- Details by Casey Brown Architecture dated 13/2/08 Plan No S201
- Pool Fence Plan by Casey Brown Architecture Plan No S202
- Specifications by Casey Brown Architecture Issue A dated 26/11/07

RIGHT OF APPEAL

under S109K where the Certifying Authority is a Council an applicant may appeal to the Land and Environmental Court against the refusal to issue a Construction Certificate or imposition of conditions on the consent within 12 months from the date of the decision

Essential Certifiers Liverpool Certificate No CC2008-00439

ACCREDITATION BODY

BUILDING PROFESSIONALS BOARD
10 Valentine Street, Parramatta NSW 2150

CERTIFICATE

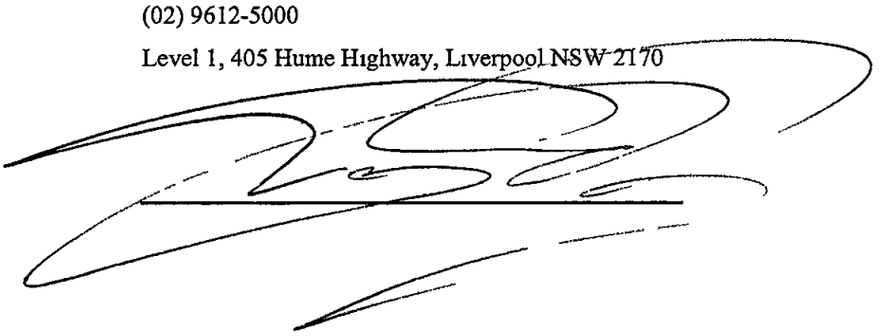
Certificate Final

I certify that the work if completed in accordance with these plans and specifications (with such modifications verified by the Certifying Authority as may be shown on that documentation) will comply with the requirements of the Environmental Planning and Assessment Regulation 2000 as referred to in Section 81A(5) of the Environmental Planning and Assessment Act 1979

CERTIFYING AUTHORITY

Name of Certifying Authority	Essential Certifiers Liverpool
Name of Accredited Certifier	Tony Raco
Accreditation No	BPB0336
Contact No	(02) 9612-5000
Address	Level 1, 405 Hume Highway, Liverpool NSW 2170

SIGNED



Essential Certifiers Liverpool Certificate No CC2008-00439

Pittwater Council

REPRINTED

OFFICIAL RECEIPT

16/10/2007 Receipt No 226513

To CHMAANJA PTY LTD

C/- CASEY BROWN ARCHITECTURE
L1 63 WILLIAM ST
E SYDNEY
2010

Applic	Reference	Amount
GL Recei	QLSL-Builders	$10 096 00
	1 X N0390/07 213-215 RIVERVIEW RD	

Total	**$10,096 00**
Amounts Tendered	
Cash	$0 00
Cheque	$10,096 00
Db/Cr Card	$0 00
Money Order	$0 00
Agency Rec	$0 00
Total	$10,096 00
Rounding	$0 00
Change	$0 00
Nett	**$10,096 00**

Printed 16/10/2007 12 07 22 PM
Cashier NCullis

96125050

HOME WARRANTY INSURANCE

Bellevarde Construction Pty Ltd
P O Box 67
Barker Centre
GRIFFITH ACT 2603

Home Building Regulation 2004
Clause 56(1)

Schedule 1 - Forms
FORM 1

HOME BUILDING ACT 1989
Section 92

CERTIFICATE IN RESPECT OF INSURANCE
RESIDENTIAL BUILDING WORK BY CONTRACTORS

A contract of insurance complying with Section 92 of the *Home Building Act 1989* has been issued by CGU Insurance Limited ABN 27 004 478 371

In Respect Of Single Dwelling

At Lot No Unit No House No 213
Riverview Road
AVALON NSW 2107

Carried Out By Bellevarde Construction Pty Ltd
Licence No' 31493
ABN 88 001 998 036

Subject to the Act and the *Home Building Regulation 2004* and the conditions of the insurance contract, cover will be provided to a beneficiary described in the contract and successors in title to the beneficiary

Signed for and on behalf of the Insurer

Homeowners please note that this Certificate and the Policy Wording are VERY IMPORTANT DOCUMENTS which should be read carefully and retained by you (and successive owners if applicable) for the duration of the statutory period of insurance

CGU Policy Certificate
Certificate No. 1Q19167
Local Authority Copy
Issue Date 23/10/2007

This Certificate must be read in conjunction with the CGU 'HOME WARRANTY INSURANCE POLICY WORDING'

Aon Risk Services Australia Ltd
ABN 17 000 434 720 act as Broker for the Builder A Tax Invoice has been issued by
HIA Insurance Services Pty Ltd
ABN 84 076 460 967,
an authorised representative of
Aon Risk Services

Insurer

CGU Insurance Limited
ABN 27 004 478 371
An IAG Company

TOTAL P 01

Application Lodgement Summary

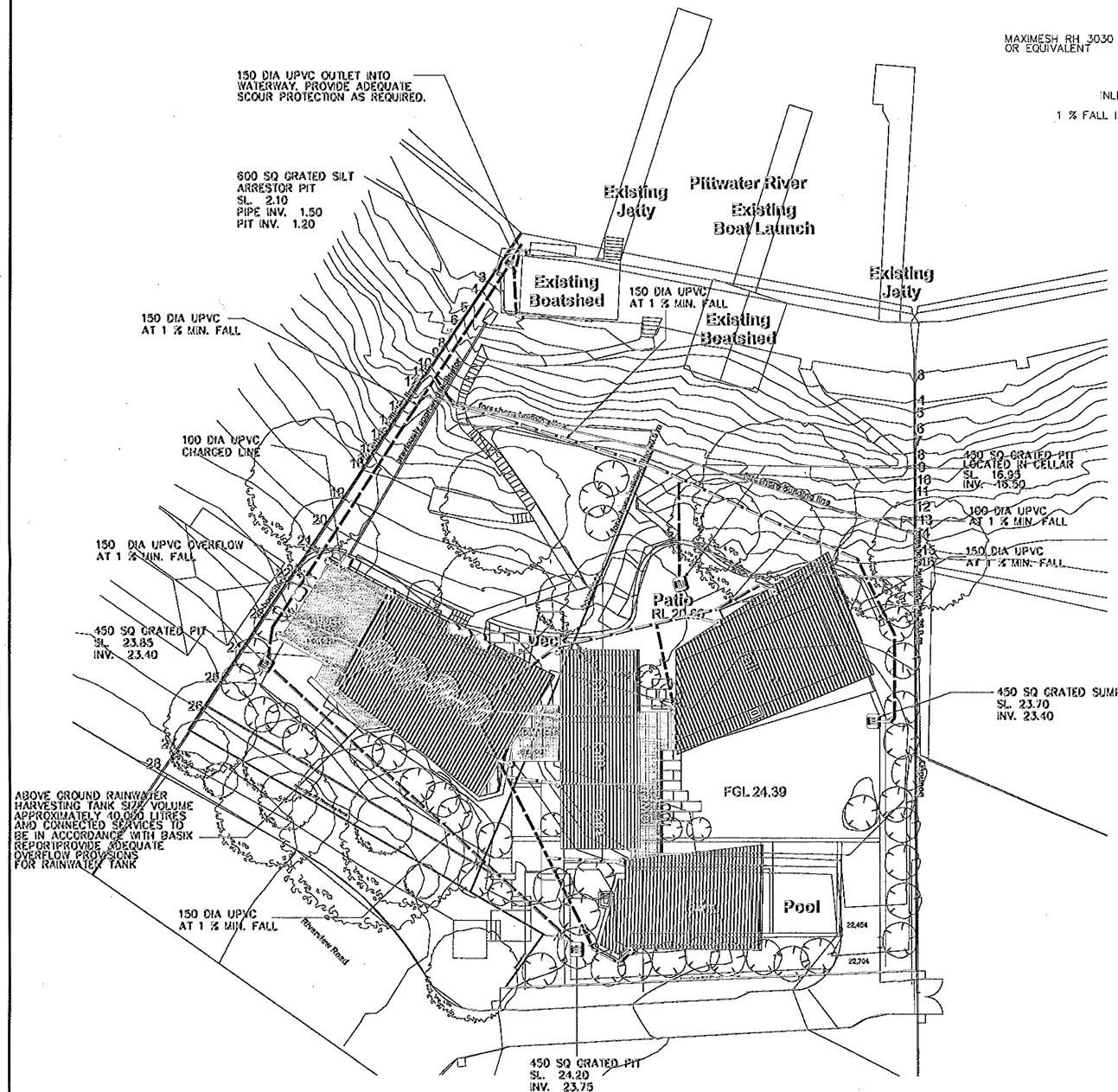
QUICK CHECK **Application Lodgement Summary** WATER

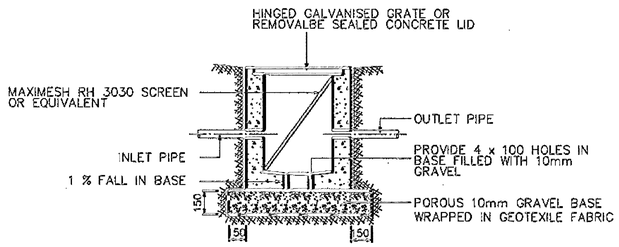
Reference Number 2120564 **Date Requested** Thu October 11 2007

Agent	Reece Waterloo, 20 Danks Street Waterloo
Applicant	bellevarde bld, 99 stuart manly 2095
Property/Asset	215 Riverview Rd, Avalon 2107 (Chmaanja Pty Ltd) PNum 3450522 Property Connection Point - (3700035) Property Connection Point - (3697307) 150 mm VC Sewer Main - (4064262) 100 mm DICL Watermain - (2468555)
Product	Building Plan Approval Application

Charge	**Product Cost**	**GST**	**Total**
Building Plan Approval Application Fee	$24 40	$0 00	$24 40

TO :
TONY RACO
9612 5050

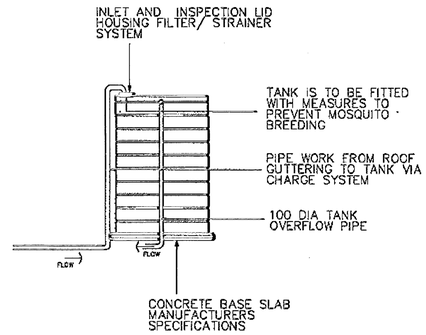




SILT ARRESTOR PIT DETAIL

GENERAL:

1. GEOTEXILE FABRIC BIDIM A14 OR SIMILAR



TYPICAL RAINWATER TANK SYSTEM

SCALE: 1:50

(BELOW BEDROOMS)

RAINWATER TANK NOTES:

- RAINWATER TANKS ARE TO BE SIZED AND CONNECTED TO SERVICES AS SPECIFIED IN THE BASIX REPORT
- ALL RAINWATER TANK SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH MANUFACTURES AND SPECIFICATIONS
- ALL PIPE WORK IS TO BE UNDERTAKEN BY LICENSED PLUMBER AND A FIRST FLUSH DEVICE MUST FITTED WHERE APPROPRIATE
- THE TANK SHOULD BE PRE--FABRICATED AND MUST BE STRUCTURALLY SOUND AND DESIGNED FOR HYDROSTATIC AND BUOYANCE FORCES WHERE APPROPRIATE
- ANY INLET MUST BE SCREENED TO PREVENT ENTRY OF FOREIGN MATTER AND MOSQUITO BREEDING, AND TANKS AND ASSOCIATED STRUCTURES ARE TO BE CHILDPROOFED
- TANK MUST BE INSTALLED OVER OR IMMEDIATELY ADJACENT TO A WATER OR SEWER MAIN OR OVER ANY EASEMENT, STRUCTURES, OR FITTINGS USED IN THEIR MAINTENANCE WITHOUT MEETING THE REQUIREMENTS AND APPROVAL OF RELEVANT PUBLIC AUTHORITY
- MAINTENANCE OF THE TANK, ASSOCIATED DEVICES (EG FIRST FLUSH DEVICES AND INLET SCREEN), AND THE WATER SUPPLY AREA (SUCH AS ROOF GUTTERS) SHOULD BE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS
- THE RAINWATER TANK AND SERVICES, PIPELINES, TANK OUTLETS, VALVE ETC SHALL BE CLEARLY, PERMANENTLY AND APPROPRIATELY MARKED AND LABELLED
- ANY APPROPRIATE BACK FLOW PREVENTION MEASURES ARE TO BE INSTALLED AND MAINTAINED TO PREVENT CONTAMINATION OF WATER SUPPLY TO SYDNEY WATER REQUIREMENTS
- ANY PUMP AND ELECTRICAL CONNECTION ARE INSTALLED BY LICENSED ELECT RICAN IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND SATISFY STATUTORY NOISE LEVELS
- ADEQUATE SEPARATION TO PARALLEL POTABLE WATER SUPPLY LINES IS TO ADHERED TOO
- RAINWATER IS ONLY TO BE COLLECTED FROM ROOFS AND ASSOCIATED SURFACES CONSTRUCTED FROM APPROPRIATE MATERIAL FROM "NON" ASBESTOS ROOFS
- WHERE STORM WATER LINES ARE CHARGE INTO THE RAINWATER TANK PROVIDE CLEANING EYE TO BASE OF DOWN PIPE AND ENSURE DOWNPIPES ARE WATERTIGHT SEALED TO GUTTER LEVEL
- RAINWATER TANK LOCATION IS INDICATIVE ONLY AND MAY BE SUBJECT TO RELOCATION DEPENDANT ON PREVAILING SITE CONDITIONS

SYMBOLS & NOTATIONS

UNLESS NOTED OTHERWISE

- THE DRAWINGS SHALL BE READ IN CONJUCTION WITH ALL OTHER WORKING DRAWINGS AND SPECIFICATIONS AND ANY OTHER WRITTEN INSTRUCTIONS ISSUED DURING THE COURSE OF CONSTRUCTION.ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER, BEFORE PROCEEDING WITH THE WORK
- DURING CONSTRUCTION THE STRUCTURE AND ANY ADJACENT STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED
- DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWING ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS
- THE CONTOUR HAS BEEN SUPPLIED BY OTHERS
- THE CONTRACTOR IS RESPONCIBLE TO ESTABLISH THE LOCATION SIZE AND LEVEL OF ALL EXISTING SERVICES NOTED ON THE DRAWINGS PRIOR TO THE COMMENCEMENT OF WORK
- ALL STORMWATER PIPES TO BE 100 DIA UPVC AT 1% MIN FALL
- ALL LOCALISED SURFACE RUN OFF TO BE DIRECTED TOWARDS SUMPS AND GRATED PITS BY SITE REGRADE
- ALL PITS OTHER THAN SILT ARRESTOR AND CONTROL PITS ARE TO BE ADEQUATE BENCHED TO ENSURE SELF CLEANING
- ALL SURFACE INLET PITS GRATED BOX DRAINS AND GRATES ARE TO BE CONSTRUCTED WITH MATERIALS IN ACCORDANCE WITH THE COUNCILS SPECIFICATIONS
- ALL PIPES SHALL CONFORM BE LAID AND BACKFILLED TO THE RELEVANT AUSTRALIAN STANDARDS
- ALL BALCONIES AND ROOFS ARE TO INCORPORATE A SAFETY OVERERFLOWS
- ALL EXTERNAL SLABS ARE TO BE ADEQUATELY WATERPROOFED
- SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS AND EMBANKMENTS, AND CONNECTED TO THE STORMWATER DRAINAGE SYSTEM
- THE NUMBERS AND LOCATION OF DOWNPIPES ARE INDICATIVE ONLY AND ARE TO BE DETERMINED BY THE BUILDER IN ACCORDANCE WITH THE RELVEANT AUSTRALIAN STANDARDS
- RELOCATING YARD PITS TO SUIT FINAL LANDSCAPING SCHEME IS PERMITTED, ADDING OR DELETING PITS SHALL BE SUBJECT TO DESIGN ENGINEERS APPROVAL
- PROVIDE APPROVED STEP IRONS TO TANKS AND DEEP PITS PERMANENTLY FIX BY ADEQUATELY DRILLING AND EPOXY GROUTING. PROVIDE EQUALLY SPACED VERTICALLY BETWEEN 250 AND 350mm WITH ALTERNATE RUNGS OFFSET 200mm
- GRATES AND FRAMES TO TANKS SHALL BE HINGED AND CHILDPROOFED, USING EITHER A SPRING LOADED BOLT OR A BOLT AND LUG LOCKING SYSTEM. THE FRAMES SHALL BE SECURELY ATTACHED TO THE TANK, RISER, OR SLAB.
- ANY ON SITE DETENTION SYSTEM SHALL IF REQUIRED BY COUNCIL HAVE A PERMANANT MARKER PLATE FIXED IN A PROMINENT POSITION TO COUNCIL REQUIREMENTS
- NOT WITHSTANDING THE EXTENT OF THE DRAINAGE SHOWN ON THIS DRAWING, ADDITIONAL WORKS OR MEASURES MAY REQUIRED SHOULD UNDISCLOSED FEATURES OR ALTERE SITE CONDITIONS WARRENT IT
- ON COMPLETION OF WORKS, ALL DISTURBED AREAS OUTSIDE THE SUBJECT PROPERTY MUST BE RESTORED TO ITS ORIGINAL CONDITION, TO COUNCILS SATISFACTION
- A CONTINUOUS SILT BARRIER FENCE IS TO BE PROVIDED ALONG BOUNDARIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND ADEQUATELY MAINTAINED FOR THE DURATION OF WORKS
- A CONTINUOUS SILT BARRIER FENCE IS TO BE PROVIDED ALONG BOUNDARIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND ADEQUATELY MAINTAINED FOR THE DURATION OF WORKS
- EROSION AND SEDIMENTATION CONTROL MEASURESTO BE INSTALLED ON INSIDE OF SITE FENCING PRIOR TO SITE DISTURBANCE TO PREVENT SEDIMENT WASHING INTO COUNCILS STORMWATER SYSTEM
- TOP SOIL FROM NOMINATED AREAS TO BE STRIPPED AND STOCKPILED ON SITE.
- ALL DISTURBED AREAS TO BE STABILISED UPON THE COMPLETION OF BUILDING WORKS.
- ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED FOR STRUCTURAL DAMAGE AFTER EACH RAINFALL EVENT, AND ALL TRAPPED SEDIMENT TO BE REMOVED TO TOPSOIL STOCKPILE.
- BARE SURFACES SHALL BE KEPT MOIST TO REDUCE DUST LEVELS
- GEOTEXTILE FABRIC LOCATED ON INSIDE OF FENCES SHALL ALSO BE UTILISED FOR DUST CONTROL WHERE NECESSARY.
- FOOTPATH RESERVE TO BE KEPT FREE OF CONSTRUCTION MATERIAL OR WASTE BINS AT ALL TIMES.
- ALL PROPOSED STRUCTURES INCLUSIVE OF RETAINING WALLS, DETENTION, ABSORPTION OR RAINWATER TANKS BUILT ADJACENT OR OVER EASEMENT AND SEWERS ARE TO BE CONSTRUCTED TO THE RELAVENT AUTHORITY REQUIREMENTS.

———	STORMWATER LINES
D	DOWNPIPE LOCATION
INV	INVERT LEVEL (PIPE /PIT)
SL	FINISED SURFACE LEVEL
T.K	TOP OF KERB
—S—	APPROX SEWER LOCATION
	200 W x 100 D HOT DIP GALV GRATED GOX DRAIN
—X—	SEDIMENT AND EROSION CONTROL BARRIER

B	AMMENDED HYDRAULICS	03/1/07
A	ORIGINAL ISSUE	18/12/07

HYDRAULIC DETAIL PLAN

CLIENT:

TOM MONAHAN /CASEY BROWN ARCHITECTURE

ADDRESS:

213 – 215 RIVERVIEW RD

AVALON

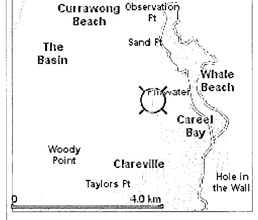
COUNCIL:	PITTWATER
SCALE :	A1: 1:200, A3: 1:400
SHEET NUMBER :	1
JOB NUMBER :	PC6994

B.E.MEAUK,CPEng

RAFELETOS ZANUTTINI PTY LTD
ACN 070047468
LEVEL 2, 108 VICTORIA STREET
KOGGEROWE NSW 2208
PO BOX 108 KOGGEROWE NSW 2208
TELEPHONE : (02) 9553 6628
FACSIMILE : (02) 9554 9164
DX 11302 HURSTVILLE NSW

20 FEB 2008





Location plan

Rev.	No.	Notes	Date	Reviewed
B		DA	19.07.07	
A		Consultant review	30.05.07	

BUILDERS/ CONTRACTORS ARE TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF SITE WORK OR OFF-SITE FABRICATION. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO THE PROJECT MANAGER, AND MANUFACTURE SHALL NOT COMMENCE UNTIL RETURN OF UNAMENDED SHOP DRAWINGS. FIGURED DIMENSIONS ARE TO BE READ IN PREFERENCE TO SCALED.

Structural Engineer

Murtagh Bond
Unit 4 Southern Cross House
9McKay Street
Turner ACT 2601
Tel: (02) 6247 0011
Fax: (02) 6248 7518
Ken Mobile 0407187301

Geotechnical Engineer

Jack Hodgson
P.O. box 389
Mona Vale, NSW 1660
9979 6733

Surveyor

Paul Keen and Company
138 Wallumatta Road
Newport, NSW
9997 3088

Certifier

Architects

casey brown architecture

Level 1
63 William Street
East Sydney NSW 2010
Tel: 61 2 9360 7977
Fax: 61 2 9360 2123
Email: cba@caseybrown.com.au

Project

HILL RESIDENCE

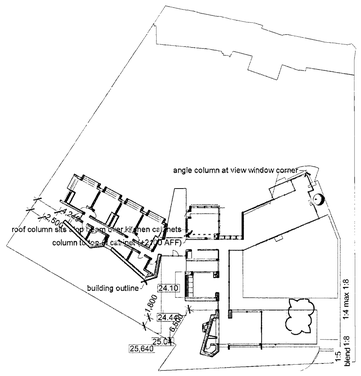
213-215 RIVERVIEWROAD RD
AVALON, NSW

Drawing Title

Survey

Drawing No.	Revision No.
A001	
Plot Date: **6/02/2008**	Project No.: H 3903
Scale: **1:200**	
Reviewed	Approved

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BASIX Specifications

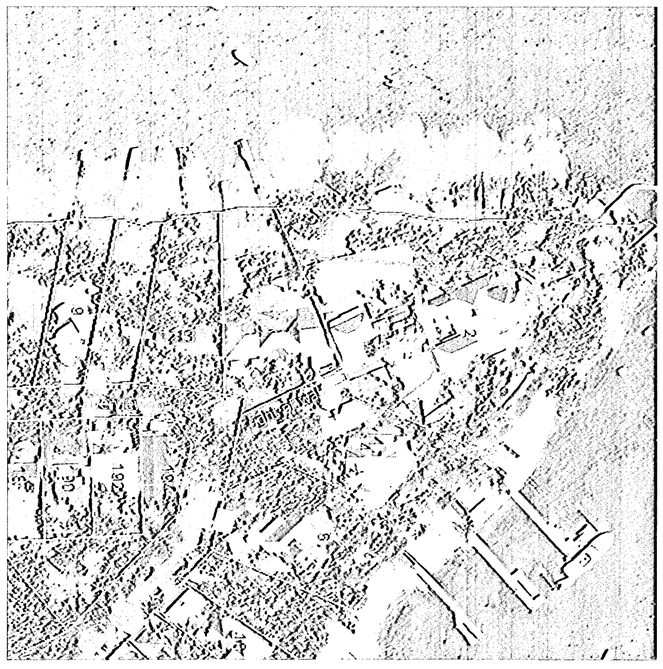
Thermal Comfort Commitments:

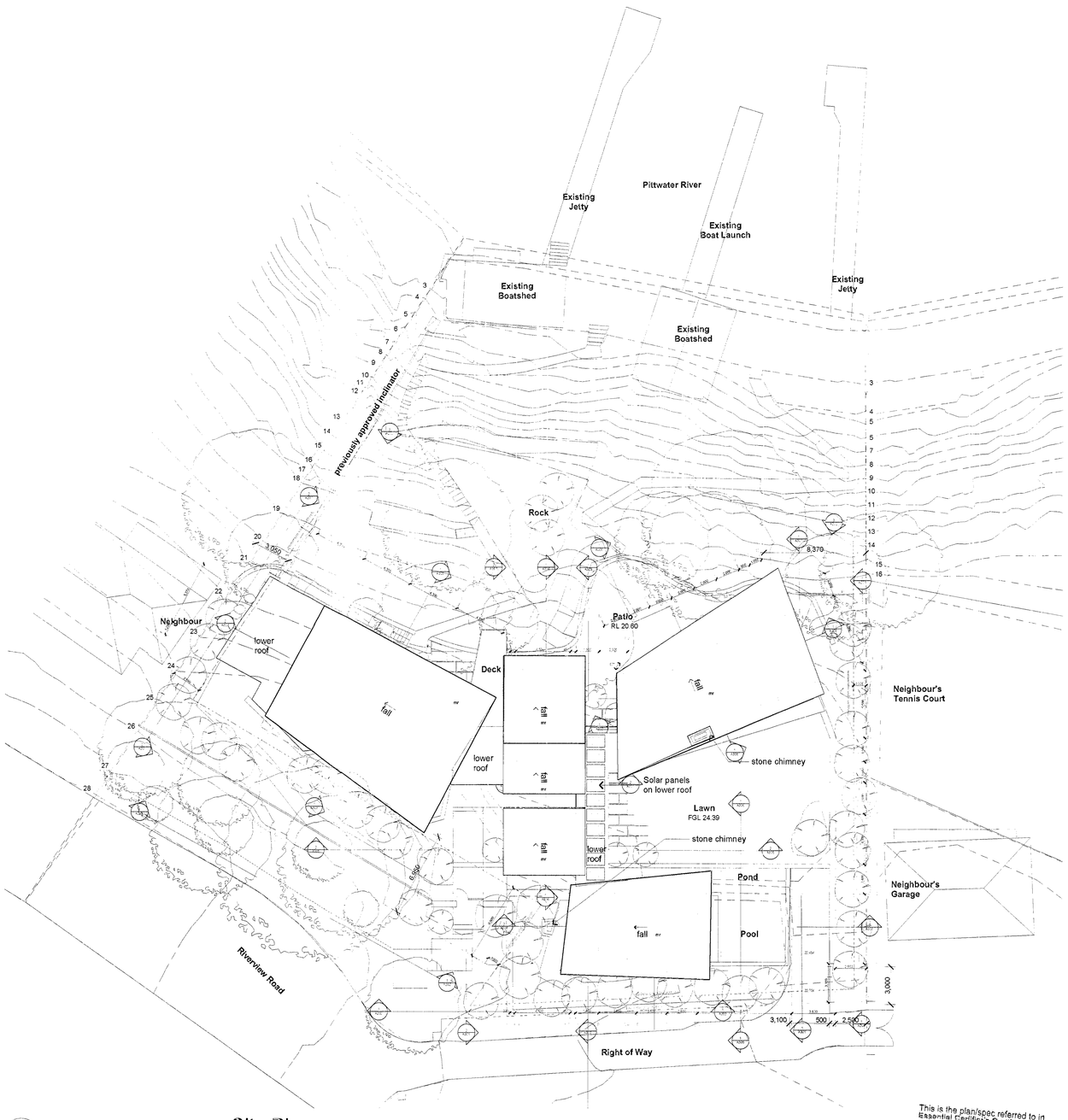
Roof insulation - R8.0
Floor insulation - R1.0
External walls insulation - R4.0
Roofs to be medium coloured.
External walls to be medium coloured.
Glazing - U = 2.51, SHGC = 0.55

Rainwater tank capacity - 40,000L; &
Pool volume - 70kL

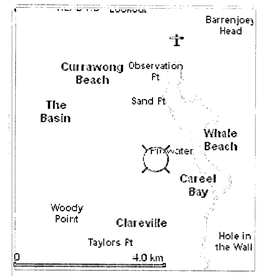
Site Area	2,766 msq		
Site Coverage	906 msq	Landscape Area	1823 msq
Percentage	33%	Percentage	66%

2 Site Coverage Diagram
1:500





1 Site Plan
1:200



Location plan

Rev.	No.	Notes	Date	Reviewed
C		BUILDING GRID	15.01.08	
B		DA	19.07.07	
A		Consultant review	30.05.07	

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Structural Engineer

Murrugi Bond
Unit 4 Southern Cross House
6McKay Street
Turner ACT 2601
Tel: (02) 6247 0011
Fax: (02) 6248 7518
Ken Mobile: 0427187301

Geotechnical Engineer

Jack Hodgson
P O box 358
Mona Vale, NSW 1660
9979 5733

Surveyor

Paul Keen and Company
138 Vuiumatta Road
Newport, NSW
9997 5058

Certifier

Architects

Casey Brown architecture

Level 1
63 William Street
East Sydney NSW 2010
Tel: 61 2 9360 7977
Fax: 61 2 9360 2123
Email: cba@caseybrown.com.au

Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

Drawing Title

Site Plan

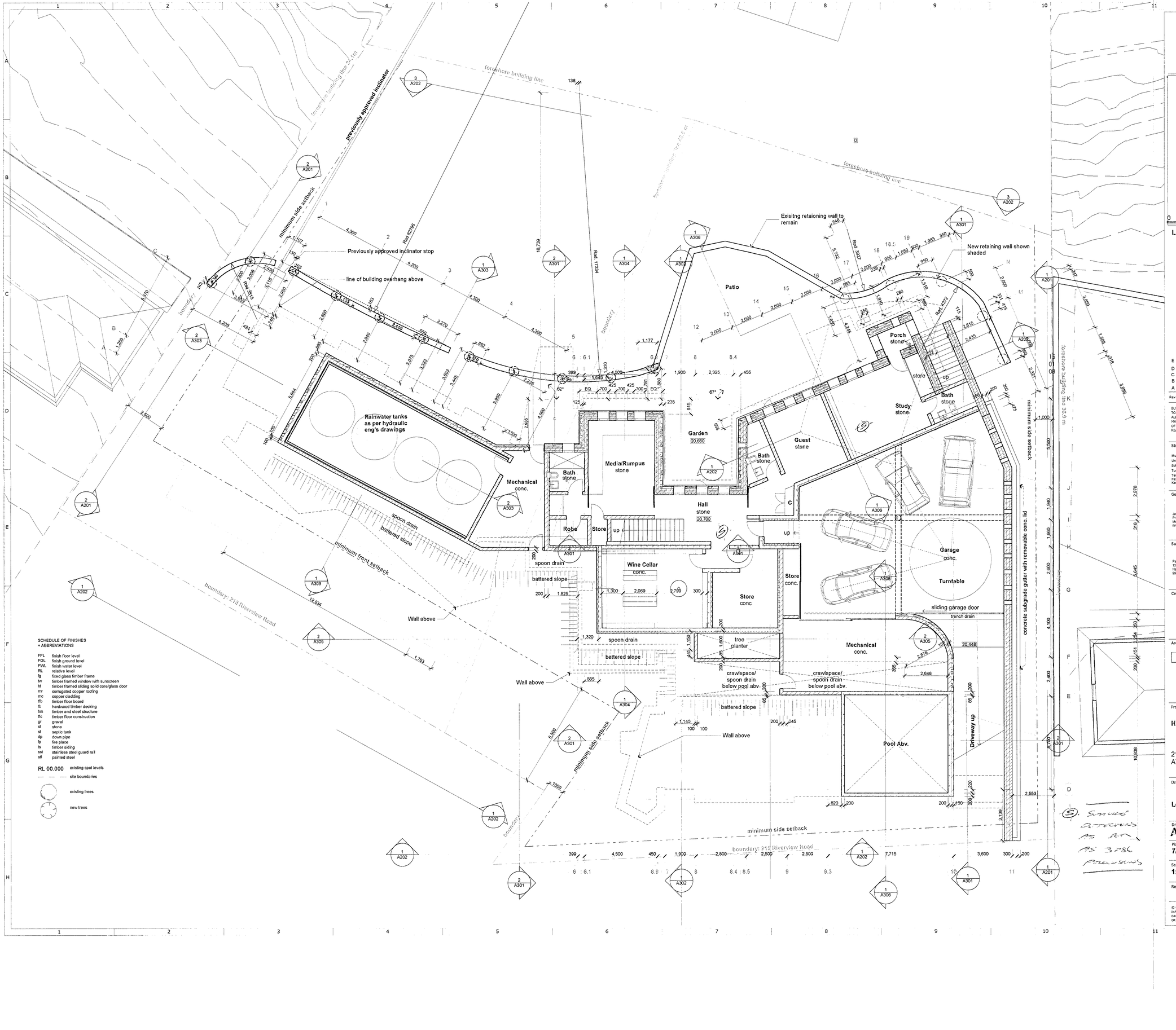
Drawing No. **A102.1**
Revision No.
Plot Date **6/02/2008**
Project No. H 3903
Scale **1:200**
Reviewed
Approved

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This is the plan/spec referred to in Essential Certifier's Certificate No.

08/00439

Officer : T. Reco
Accreditation No. : BPB0336



SCHEDULE OF FINISHES
+ ABBREVIATIONS

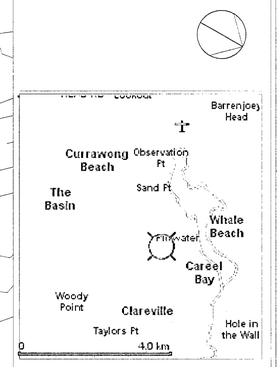
FFL	finish floor level
FGL	finish ground level
FWL	finish water level
RL	relative level
fg	fixed glass timber frame
tw	timber framed window with sunscreen
td	timber framed sliding solid core/glass door
mr	corrugated copper roofing
mc	copper cladding
tfb	timber floor board
tb	hardwood timber decking
tss	timber and steel structure
tfc	timber floor construction
gr	gravel
st	stone
st	septic tank
dp	down pipe
fp	fire place
ts	timber siding
sst	stainless steel guard rail
stl	painted steel

RL 00.000 existing spot levels

site boundaries

existing trees

new trees



Location plan

Rev.	No.	Notes	Date	Reviewed
E		PIERS DIMENSIONED	03.02.08	
D		DIMENSIONS ADDED	01.02.08	
C		BUILDING GRID	15.01.08	
B		DA	19.07.07	
A		Consultant review	30.05.07	

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Structural Engineer

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Unit 4 Southern Cross House
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Tel: (02) 6247 0211
Fax: (02) 6246 7518
Ken Mobile 0407187301

Geotechnical Engineer

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9979 4733

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138 Wallumatta Road
Newport, NSW
9997 3088

Certifier — This is the plan/spec referred to in Essential Certifier's Certificate No.

08/00439

Officer : T. Raco
Accreditation No. : BPB0336

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

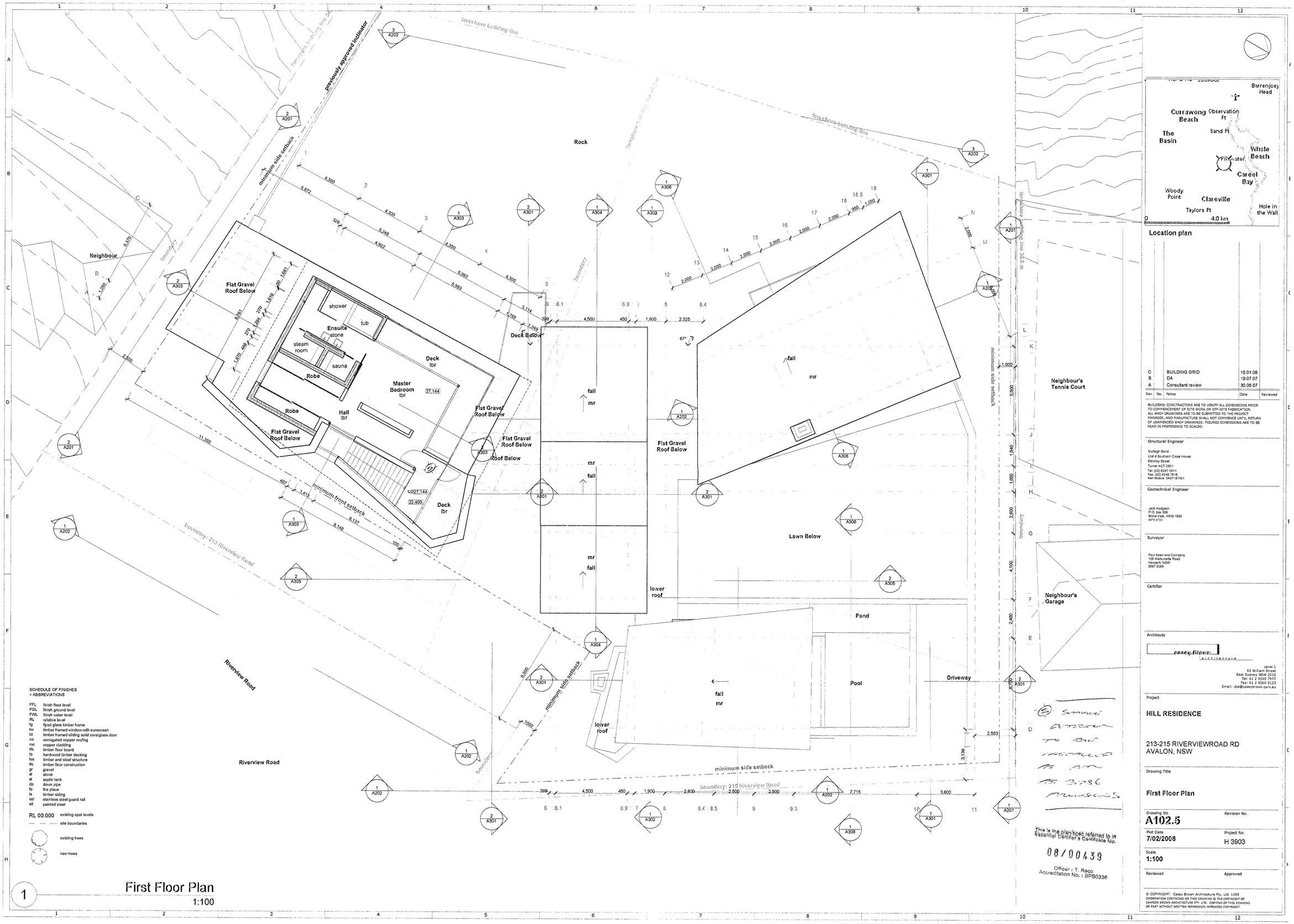
Drawing Title

Lower Level Plan

Drawing No.	Revision No.
A102.2	E
Plot Date: **7/02/2008**	Project No.: H 3903
Scale: **1:100**	
Reviewed	Approved

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SMOKE DETECTORS AS PER AS 3786 PROVISIONS



1 First Floor Plan
1:100

Location plan

Rev.	No.	Notes	Date	Reviewed
C		BUILDING GRID	15.01.08	
B		DA	19.07.07	
A		Consultant review	30.05.07	

BUILDERS/ CONTRACTORS ARE TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF SITE WORK OR OFF-SITE FABRICATION. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO THE PROJECT MANAGER, AND MANUFACTURE SHALL NOT COMMENCE UNTIL RETURN OF UNAMENDED SHOP DRAWINGS. FIGURED DIMENSIONS ARE TO BE READ IN PREFERENCE TO SCALED.

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

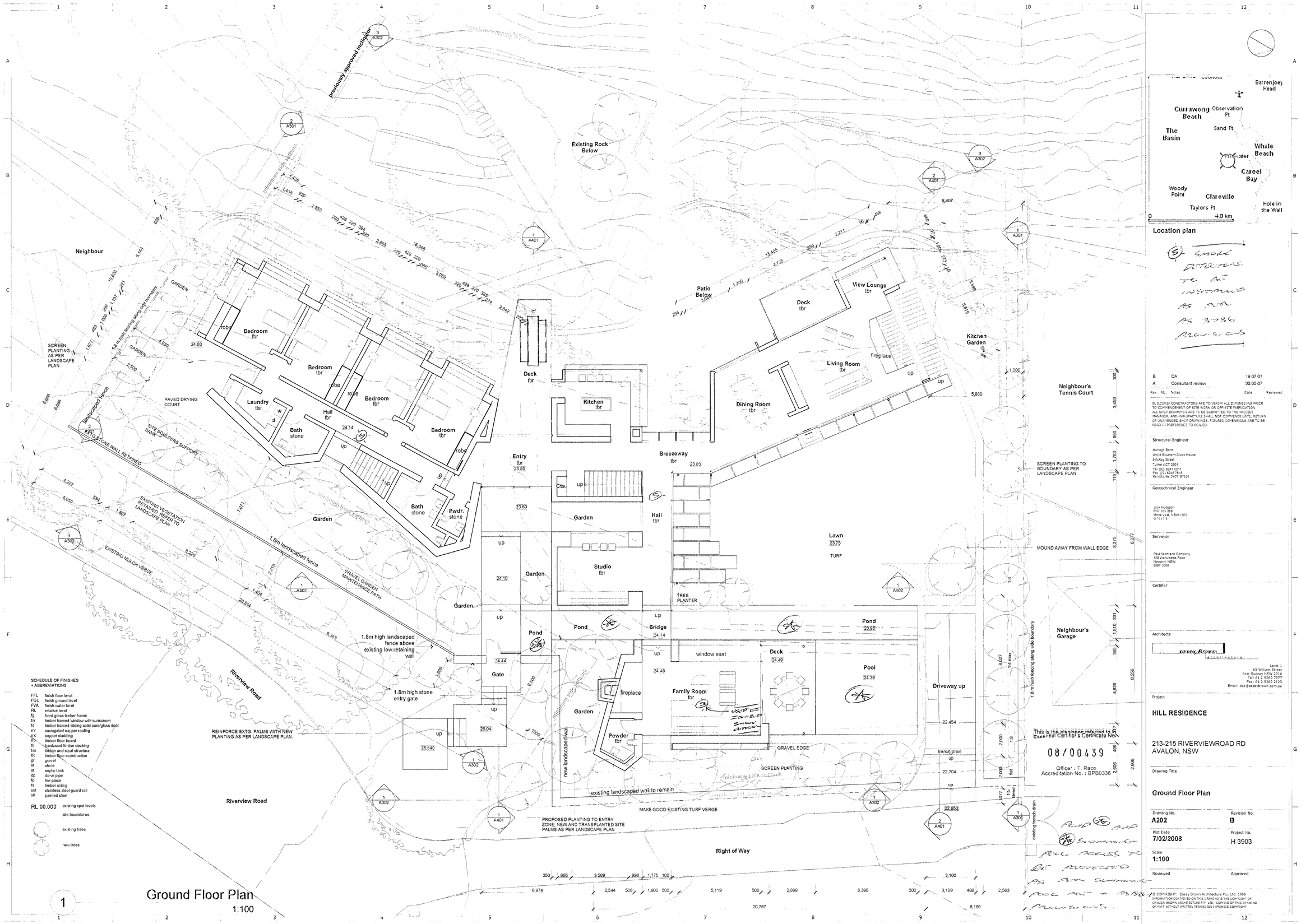
Drawing Title

First Floor Plan

Drawing No. **A102.5**
Revision No.
Plot Date **7/02/2008**
Project No. H 3903
Scale **1:100**
Reviewed
Approved

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08/00439
Officer : T. Raco
Accreditation No. : BPB0336



SCHEDULE OF FINISHES + ABBREVIATIONS

FFL	finish floor level
FGL	finish ground level
FWL	finish water level
RL	relative level
fg	fixed glass timber frame
tw	timber framed window with sunscreen
td	timber framed sliding solid core/glass door
mr	corrugated copper roofing
cw	copper cladding
tfb	timber floor board
tb	hardwood timber decking
tss	timber and steel structure
tfc	timber floor construction
gr	gravel
st	stone
st	septic tank
dp	down pipe
fp	fire place
ts	timber siding
ssf	stainless steel guard rail
stl	painted steel

RL 00.000 existing spot levels

site boundaries

existing trees

new trees

Location plan

SMOKE DETECTORS TO BE INSTALLED AS PER AS 3786 REQUIRED

Rev.	Nr.	Notes	Date	Reviewed
B	DA		19.07.07	
A	Consultant review		30.05.07	

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

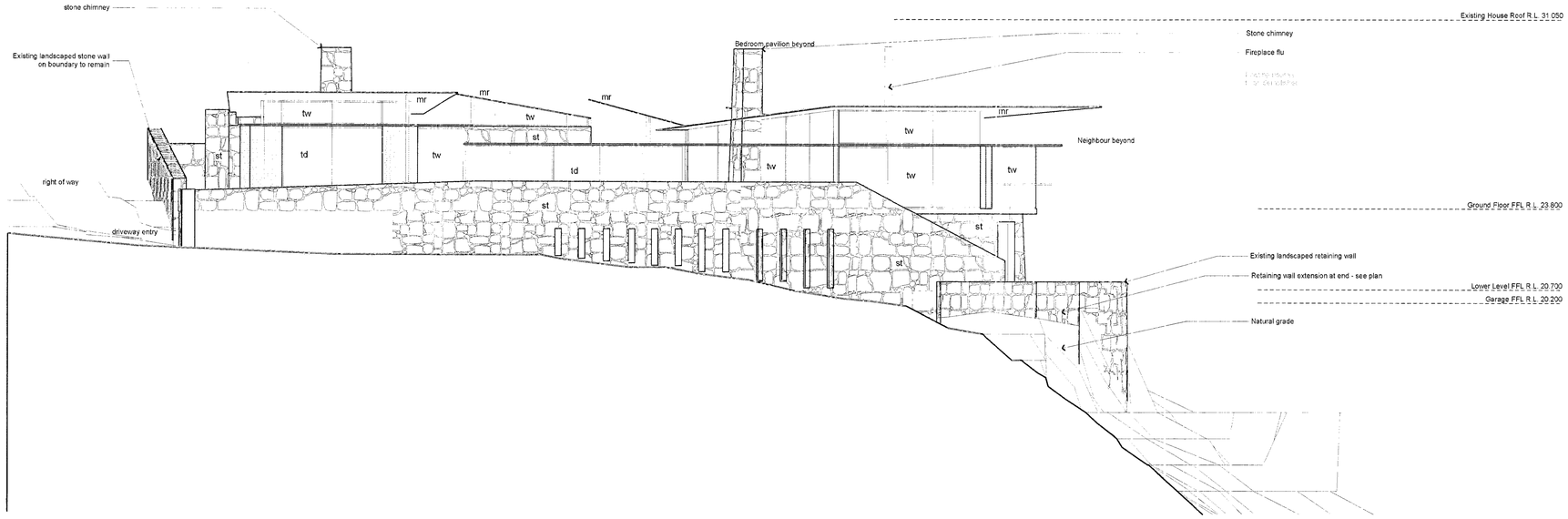
Drawing Title

Ground Floor Plan

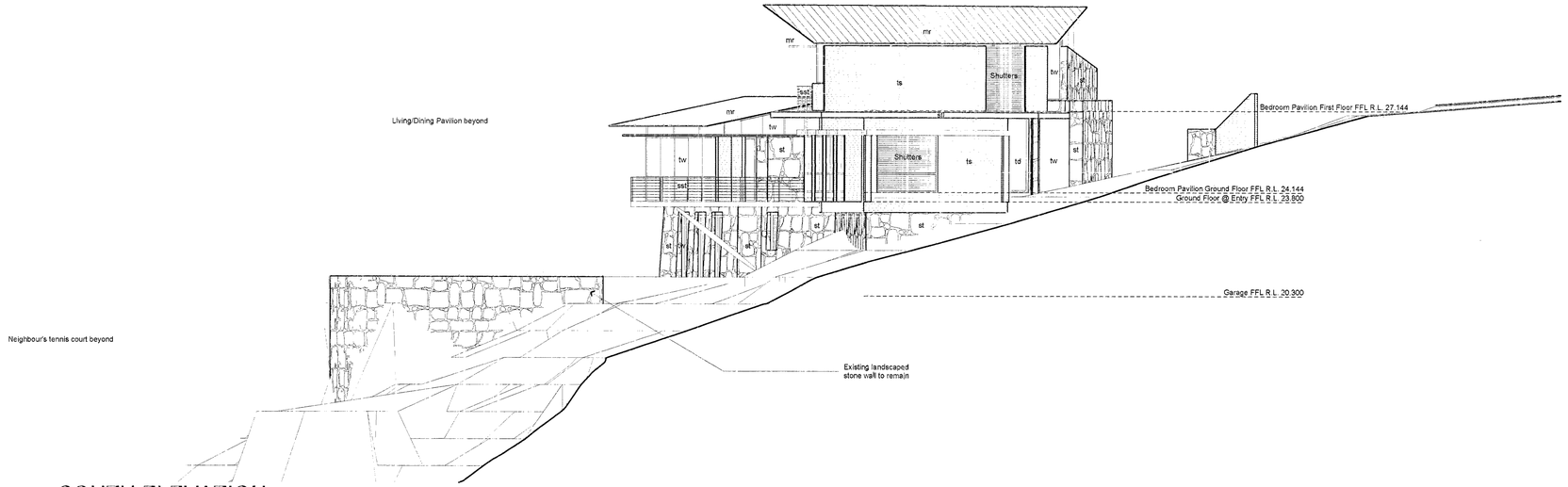
This is the plan/s referred to in Essential Certifier's Certificate No.
08/00439
Officer : T. Raco
Accreditation No. : BPB0336

Drawing No.	Revision No.
A202	B
Plot Date	Project No.
7/02/2008	H 3903
Scale	
1:100	
Reviewed	Approved

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1 NORTH ELEVATION
1:100



2 SOUTH ELEVATION
1:100

SCHEDULE OF FINISHES
+ ABBREVIATIONS

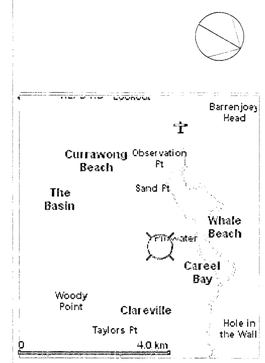
FFL	finish floor level
FGL	finish ground level
FWL	finish water level
RL	relative level
fg	fixed glass timber frame
tw	timber framed window with sunscreen
td	timber framed sliding solid core/glass door
mr	corrugated copper roofing
mc	copper cladding
tfb	timber floor board
tb	hardwood timber decking
tss	timber and steel structure
tfc	timber floor construction
gr	gravel
st	stone
st	septic tank
dp	down pipe
fp	fire place
ts	timber siding
sst	stainless steel guard rail
stl	painted steel

RL 00.000 existing spot levels

site boundaries

existing trees

new trees



Location plan

Rev.	No.	Notes	Date	Reviewed
B		DA	19.07.07	
A		Consultant review	30.05.07	

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

Drawing Title

ELEVATIONS

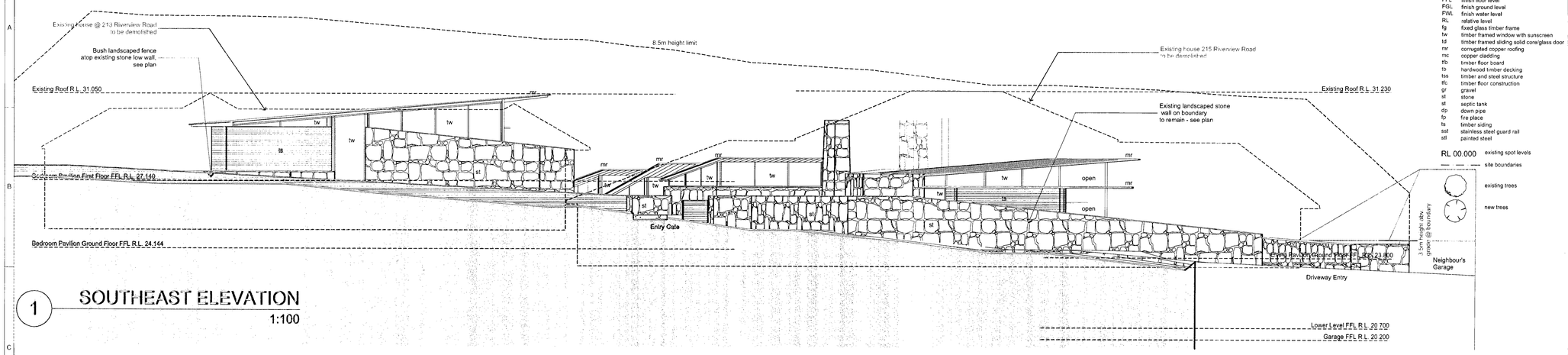
This is the plan/spec referred to in Essential Certifier's Certificate No.

08/00439

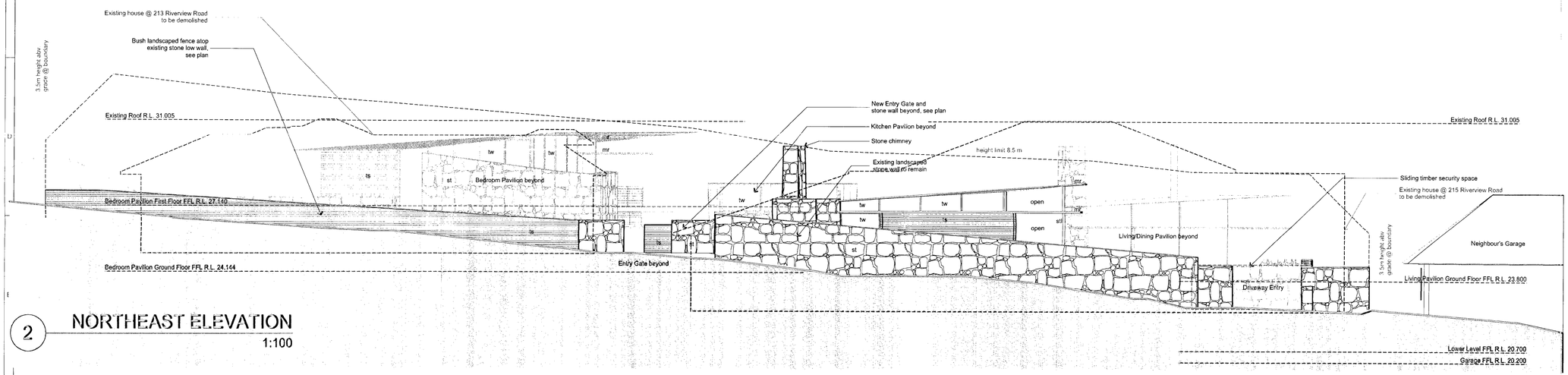
Officer : T. Raco
Accreditation No. : BPB0336

Drawing No.	Revision No.
A301	**B**
Plot Date: **7/02/2008**	Project No.: H 3903
Scale: **1:100**	
Reviewed	Approved

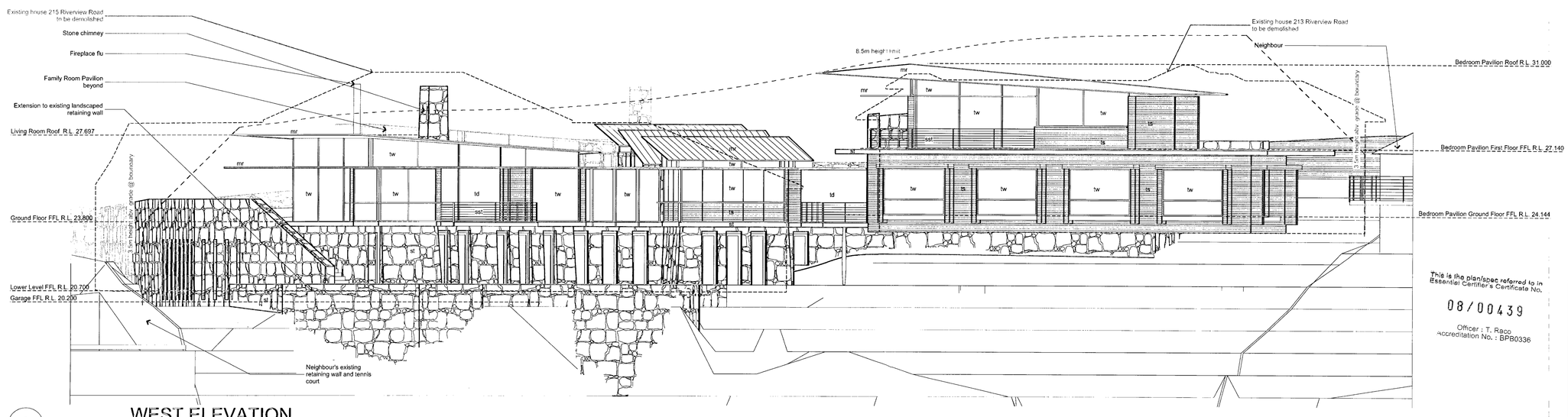
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1 SOUTHEAST ELEVATION
1:100



2 NORTHEAST ELEVATION
1:100

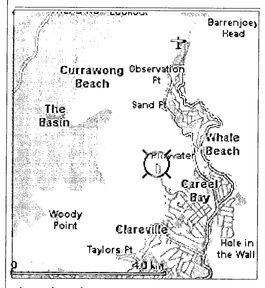


3 WEST ELEVATION
1:100

SCHEDULE OF FINISHES + ABBREVIATIONS

FFL	finish floor level
FGL	finish ground level
FWL	finish water level
RL	relative level
fg	fixed glass timber frame
tw	timber framed window with sunscreen
td	timber framed sliding solid core/glass door
mr	corrugated cooper roofing
mc	copper cladding
tfb	timber floor board
tb	hardwood timber decking
tss	timber and steel structure
tfc	timber floor construction
gr	gravel
st	stone
st	septic tank
dp	down pipe
fp	fire place
ts	timber siding
sst	stainless steel guard rail
stl	painted steel

RL 00.000 existing spot levels
site boundaries
existing trees
new trees



Location plan

Rev.	No.	Notes	Date	Reviewed
B		DA	19.07.07	
A		Consultant review	30.05.07	

BUILDERS/ CONTRACTORS ARE TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF SITE WORK OR OFF-SITE FABRICATION. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO THE PROJECT MANAGER, AND MANUFACTURE SHALL NOT COMMENCE UNTIL RETURN OF UNMARKED SHOP DRAWINGS. FIGURED DIMENSIONS ARE TO BE READ IN PREFERENCE TO SCALED

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Ken Mobile: 0407187301

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Surveyor

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Architects

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

Drawing Title

ELEVATIONS

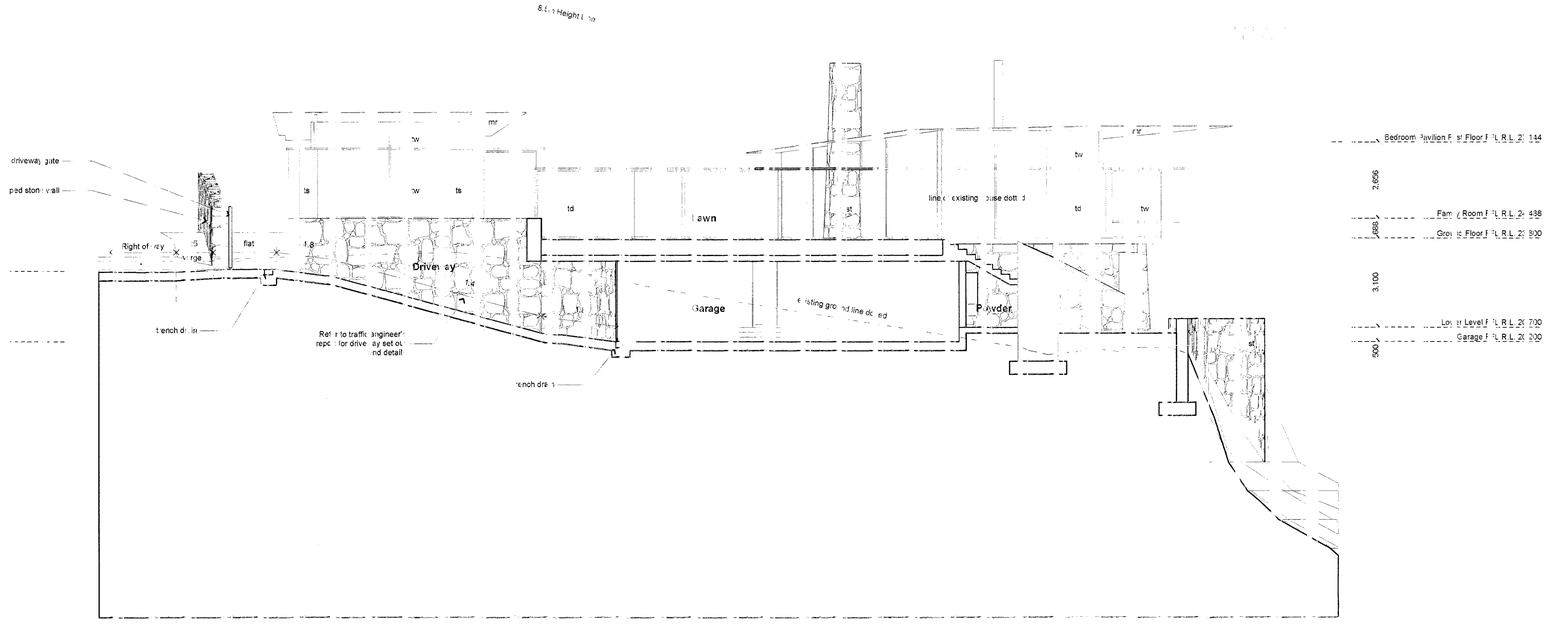
Drawing No.	Revision No.
A302	**B**
Plot Date	Project No.
8/02/2008	H 3903
Scale	
1:100	
Reviewed	Approved

This is the plan/spec referred to in Essential Certifier's Certificate No.

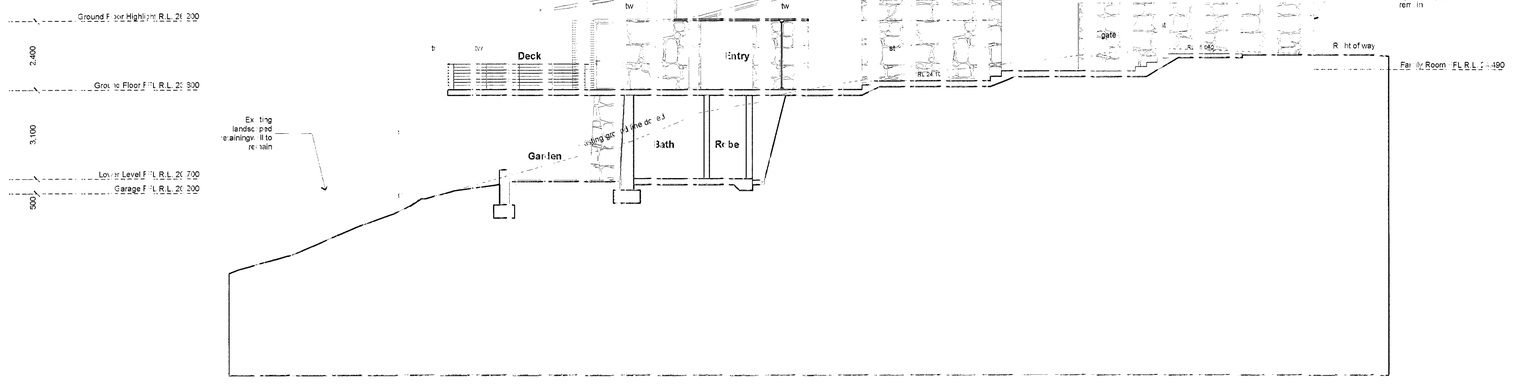
08/00439

Officer : T. Raco
Accreditation No. : BPB0336

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2 SECTION A
1:100



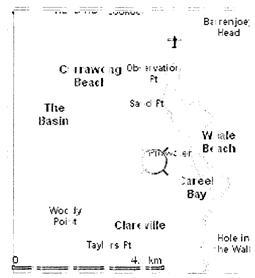
1 SECTION B
1:100

SCHEDULE OF FINISHES ABBREVIATIONS

FL finish floor level
GL finish ground level
WL finish water level
L relative level
fixed glass timber frame
timber framed window with unscreen
timber framed sliding solid/glass door
corrugated copper roofing
copper cladding
timber floor boards
hardwood timber decking
timber and steel structure
timber floor construction
grate
storm
septic tank
downpipe
fire hose
timber siding
stainless steel handrail
painted steel

RL 00.00 existing spot levels
site boundaries
existing trees
new trees

This is the plan/spec referred to in Essential Certifier's Certificate No.
08/00439
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Location plan

Rev.	No.	Notes	Date	Reviewed
B		DA	19.07.07	
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Ref.

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Certifier

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Project

HILL RESIDENCE

211-215 FIVERVIEW ROAD RD
AVALON NSW

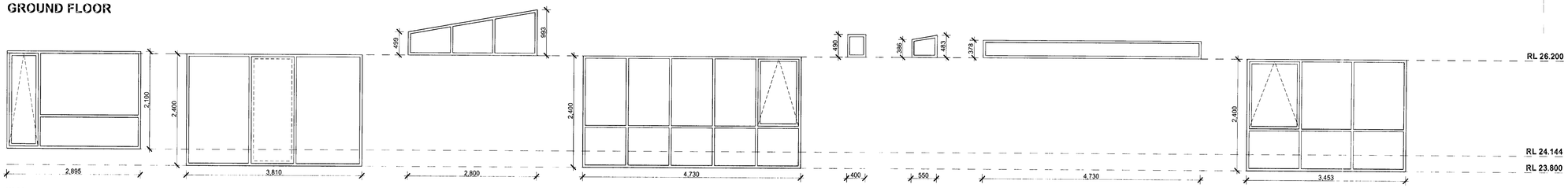
Drawing Title

Sections

Drawing No.	Revision No.
A401	B
Plot Date	Project No.
8/02/2008	H 3403
Scale	
1:100	
Reviewed	Approved

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GROUND FLOOR



W 01
01-04

TIMBER FRAMED GLASS WINDOW. FRAME 50MM WIDE x 100MM THICK. DOUBLE GLAZING CLEAR LOW E WITH ARGON AIR GAP. GLAZING U= 2.51; SHGC= 0.55

W 02

TIMBER FRAMED GLASS WINDOW. FRAME 50MM WIDE x 100MM THICK. DOUBLE GLAZING CLEAR LOW E WITH ARGON AIR GAP. GLAZING U= 2.51; SHGC= 0.55. FOR DOOR REFER TO D 04.

W 03

TIMBER FRAMED CLARESTORY GLASS WINDOW. FRAME 50MM WIDE x 100MM THICK. DOUBLE GLAZING CLEAR LOW E WITH ARGON AIR GAP. GLAZING U= 2.51; SHGC= 0.55

W 04

AS PER W 01

W 05

AS PER W 03

W 06

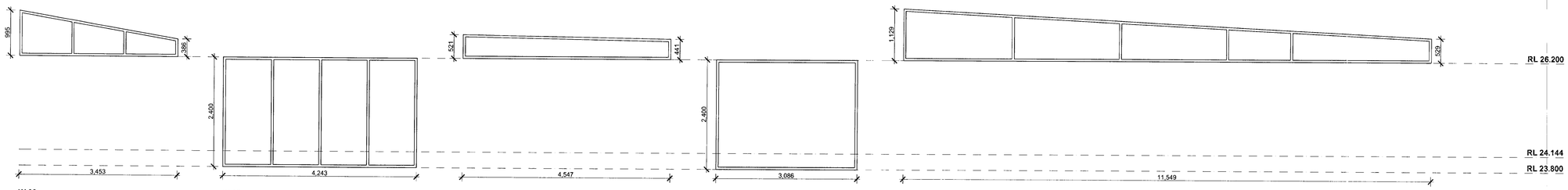
AS PER W 03

W 07

AS PER W 03

W 08

AS PER W 01



W 09

AS PER W 03

W 10

AS PER W 01

W 11

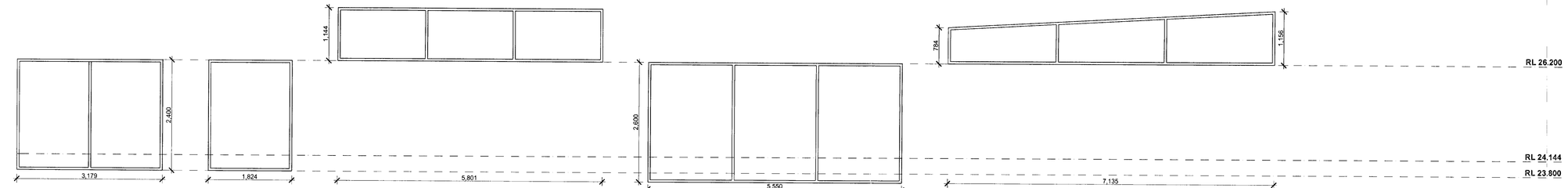
AS PER W 03

W 12

AS PER W 01

W 13

AS PER W 03



W 14

AS PER W 01

W 15

AS PER W 01

W 16

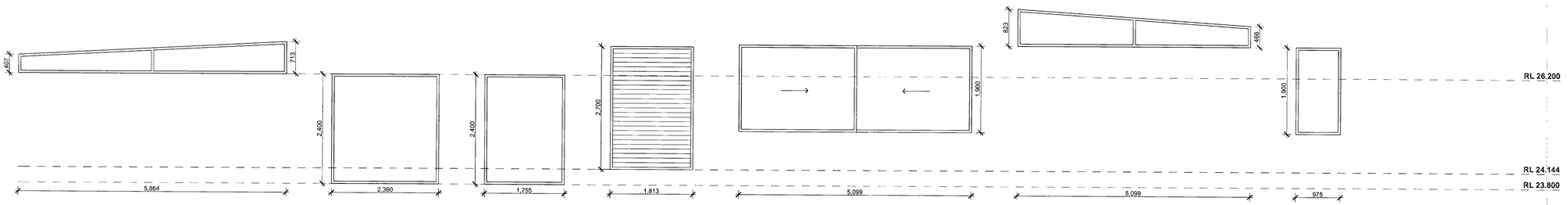
AS PER W 03

W 17

AS PER W 01

W 18

AS PER W 03



W 19

AS PER W 03

W 20

AS PER W 01

W 21
01-02

AS PER W 01

W 22
01-02

TIMBER FRAMED BREEZEWAY LOUVRE WINDOW. LOUVRE FRAME BLACK POWDER COATED WITH WEATHER STRIPS, LOCKS AND HANDLE. CLEAR TOUGHENED GLASS. FLYSCREEN REBATED INTO FRAME.

W 23

TIMBER FRAMED SLIDING GLASS WINDOW FRAME 50MM WIDE x 100MM THICK. DOUBLE GLAZING CLEAR LOW E WITH ARGON AIR GAP. GLAZING U= 2.51; SHGC= 0.55.

W 24

AS PER W 03

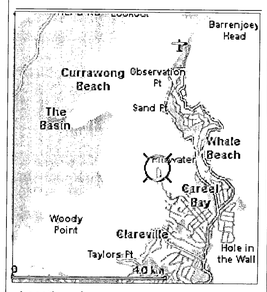
W 25

AS PER W 01

This is the plan/spec referred to in Essential Certifier's Certificate No.

08/00439

Officer : T. Raco
Accreditation No. : BPB0336



Location plan

Rev.	No.	Notes	Date	Reviewed
	B	DA	18.07.07	
	A	Consultant review	30.05.07	

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Project

HILL RESIDENCE

213-215 RIVERVIEWROAD RD
AVALON, NSW

Drawing Title

Preliminary Door and Window Schedule

Drawing No.	Revision No.
A5.1	B
Plot Date	Project No.
8/02/2008	H 3903
Scale	
Reviewed	Approved

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JANE COLEMAN LANDSCAPE ARCHITECT

15 October 2007

Essential Certifiers Liverpool
PO Box 5387
PRESTONS NSW 2170
c/- CASEY BROWN ARCHITECTURE

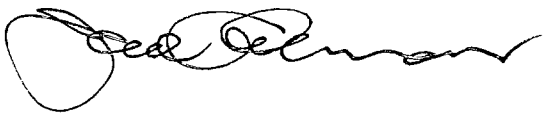
ATTENTION : TOM MONAHAN

Dear Sir,

RE: 213-215 RIVERVIEW ROAD CLAREVILLE : LANDSCAPE SOFTWORKS

The Landscape Design for the above site indicated on drawing number H 3903 DA L/01a, July 2007, 'Landscape Planting Framework' is in accordance with normal Landscape practice and meets the requirements of the relevant Australian Standards and relevant conditions of Development Consent.

Yours faithfully,

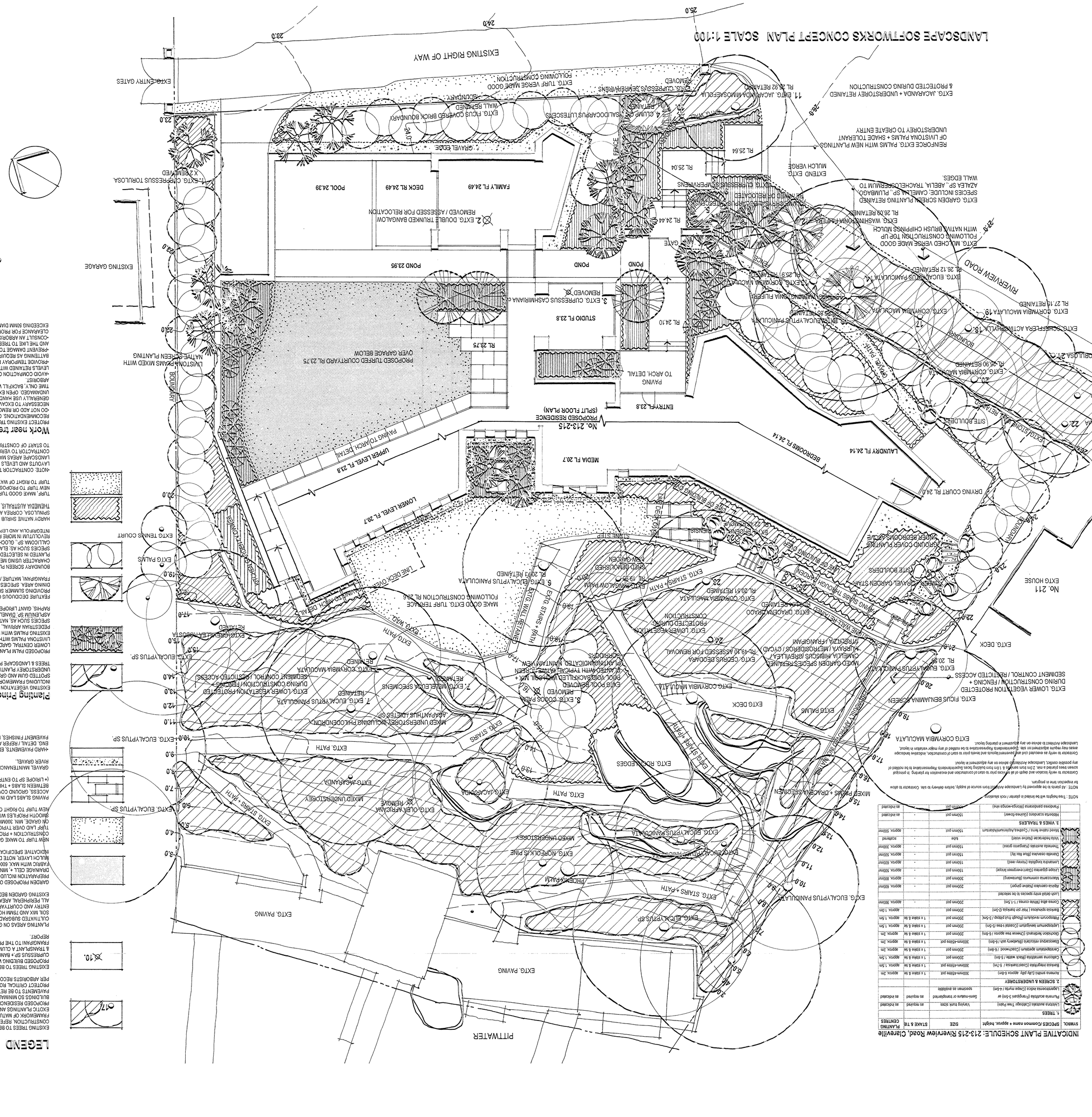


Jane Coleman

B. L. Arch. UNSW, AAILA, Registered Landscape Architect.
64 Rose Street, Chippendale, NSW 2008.
Ph. 02 9698 3520, Fax. 02 9698 1116
Jane Coleman Landscape Architect P. L.

JANE COLEMAN
LANDSCAPE ARCHITECT
PTY LTD ACN 003 101 746
64 ROSE STREET
CHIPPENDALE NSW 2008
TELEPHONE 02 9698 3520
FAX 02 9698 1116

LANDSCAPE SOFTWORKS CONCEPT PLAN SCALE 1:100


EXISTING RIGHT OF WAY
EXTG. ENTRY GATES
EXTG. CUPRESSUS SEMPERVIRENS REMOVED
EXTG. TURF VERGE MADE GOOD FOLLOWING CONSTRUCTION
EXTG. FICUS CONCRETE BRICK BOUNDARY WALL RETAINED
4. PLUMS + ASSORTED SUCCULENTS RETAINED
11. EXTG. JACARANDA + UNDERSTOREY RETAINED & PROTECTED DURING CONSTRUCTION
EXTG. JACARANDA MIMOSAEFOLIA
RL 25.82 RETAINED
REINFORCE EXTG. PALMS WITH NEW PLANTINGS OF LIVISTONA PALMS + SHADE TOLERANT UNDERSTOREY TO CREATE ENTRY
EXTG. GARDEN SCREEN PLANTING RETAINED & PROTECTED DURING CONSTRUCTION
EXTG. CUPRESSUS SEMPERVIRENS REMOVED
EXTG. WASHINGTONIA FILIFERA
RL 26.84 RETAINED
EXTG. GARDEN SCREEN PLANTING RETAINED SPECIES INCLUDE: CAMELLIA SP., PLUMBAGO, AZALEA SP, ABELIA, TRACHELOSPERMUM TO WALL EDGES.
EXTEND EXTG. MULCH VERGE
RL 25.04
EXTG. CUPRESSUS SEMPERVIRENS REMOVED
EXTG. CORDYLINE AUSTRALIS RETAINED & PROTECTED DURING CONSTRUCTION
RL 25.64
EXTG. LOWER BENCH RETAINED
EXTG. LOWER VEGETATION PROTECTED DURING CONSTRUCTION / RESTRICTED ACCESS SEGMENT CONTROL
EXTG. FICUS BENJAMINA SCREEN
EXTG. EUCALYPTUS PANICULATA
EXTG. CORDYLINE AUSTRALIS
EXTG. MACROCARPA MONTEREY CYPRESS REMOVED
EXTG. WASHINGTONIA FILIFERA
RL 26.98 RETAINED
FOLLOWING CONSTRUCTION TOP UP WITH NATIVE BRUSH CHIPPINGS MULCH
EXTG. JACARANDA MIMOSAEFOLIA
EXTG. EUCALYPTUS PANICULATA
EXTG. CORDYLINE AUSTRALIS
EXTG. COPROSMA MACULATA
EXTG. CUPRESSUS SEMPERVIRENS REMOVED
EXTG. CUPRESSUS CASHMIRIANA
EXTG. EUCALYPTUS PANICULATA
EXTG. COPROSMA MACULATA
EXTG. CUPRESSUS SEMPERVIRENS REMOVED

7th February 2008

Casey Brown Architecture
Level 1
63 William Street
EAST SYDNEY NSW 2010

MURTAGH BOND

CERTIFICATE OF STRUCTURAL SUFFICIENCY DESIGN

AVALON
213-215 Riverview Road

I certify that:

1. I have designed the following elements for the above building work.
   - Footings
   - Retaining Walls
   - Slab on Ground

To comply with current Australian Standards and Building Code of Australia requirements.

DECLARATION

2. I am a practising Professional Structural Engineer, a Fellow of the Institute of Engineers Australia, and a Chartered Professional Engineer. I am actively engaged in the Structural Design and supervision of building construction.

Yours Faithfully

Ken Murtagh
Director
Bond James x Murtagh P/L

Bond James x Murtagh
Pty Ltd Inc in ACT
Consulting Engineers

Unit 4 Southern Cross House
9 McKay Street Turner ACT 2601
Australia
Telephone (02) 6247 0011
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Web: www.murtaghbond.com.au
ABN 35 008 521 042

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 213-215 Riverside Rd Avalon

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

I, K. Mantagh (insert name) on behalf of Mantagh Bond Structures Buro (trading or company name)

on this the 7th February (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 & Report
Report Date: 5/6/07
Author: J. Hodgson Consultants

Structural Documents list:

S1 Notes
S2 S3 Footings & Details

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.

K Mantagh (name) (signature)

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

I prepared and/or technically verified the abovementioned Geotechnical Report as per Form 1 dated and now certify that I have viewed the above listed structural documents prepared for the same development. I am satisfied that the recommendations given in the Geotechnical Report have been appropriate taken into account by the structural engineer in the preparation of these structural documents.
I am aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified.in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature .....

Name .....

Chartered Professional Status.....

Membership No. .....

Company.....

HILL RESIDENCE

RIVERVIEWROAD DR AVALON,NSW

S T R U C T U R A L D R A W I N G S

GENERAL

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. CONSTRUCTION FROM THESE DRAWINGS, AND THEIR ASSOCIATED CONSULTANTS' DRAWINGS IS NOT TO COMMENCE UNTIL APPROVED BY THE LOCAL AUTHORITIES.

G2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION

G3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.

G4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.

G5 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

G6 THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT STANDARDS AUSTRALIA CODES AND LOCAL GOVERNMENT ORDINANCES FOR THE FOLLOWING LOADINGS. REFER TO ARCHITECTURAL DRAWINGS FOR PROPOSED FLOOR USAGE.

SEE LOADING PLANS FOR LIVE & SUPERIMPOSED DEAD LOADS

G7 WIND LOADS ARE IN ACCORDANCE WITH AS 1170.2 AS FOLLOWS:

REGIONAL WIND VELOCITY:	VR= 45 m/s
REGION:	A2
TERRAIN CATEGORY:	3

G8 THE RELEVANT PROVISIONS OF AS 1170.4 HAVE BEEN APPLIED FOR EARTHQUAKE DESIGN CATEGORY= WITH SITE FACTOR, S= 0.66 AND GROUND ACCELERATION, a=0.08

FOUNDATIONS

F1 SPREAD FOOTINGS OR SHALLOW PIERS ON WEATHERED ROCK= 1.2MPa END BEARING
WHICH TO BE APPROVED BY STRUCTURAL OR GEOTECTNICAL ENGINEER

F2 REFER TO GEOTECHNICAL REPORT PREPARED BY JACK HODGSON CONSULTANTS PTY LTD REF: VS 24397

F3 FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.

F4 DO NOT EXCEED A RISE OF 1 IN A RUN OF 1.75 FOR THE LINE OF SLOPE BETWEEN ADJACENT FOOTINGS OR EXCAVATIONS.

F5 DO NOT BACKFILL RETAINING WALLS (OTHER THAN CANTILEVER WALLS) UNTIL FLOOR CONSTRUCTION AT TOP AND BOTTOM IS COMPLETED. ENSURE FREE DRAINING BACKFILL AND DRAINAGE IS IN PLACE.

F6 FOOTINGS TO BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OUT BY EXPOSURE.

CONCRETE

C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

C2 READYMIX CONCRETE SUPPLY SHALL COMPLY WITH AS 1379.

C3 CONCRETE QUALITY
ALL THE REQUIREMENTS OF THE ACSE CONCRETE SPECIFICATION DOCUMENT 1 (EDITION 6) SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	CONCRETE GRADE MPa	SLUMP	MAX. AGG. SIZE	CEMENT TYPE	MAX. W/C RATIO	MIN. CEMENT CONTENT
GENERALLY UNO	40	80	20	A	..	..
FOOTING BEAMS & PADS	32	80	20	A	..	..
PIERS	32 U.N.O	80	20	A	..	..

C4 PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379, CLAUSE B7.

C5 NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.

C6 CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE.

EXPOSURE CLASSIFICATION TO AS3600	CONCRETE GRADE MPa	CAST AGAINST GROUND	CAST IN FORMS AND EXPOSED	CAST IN FORMS NOT EXPOSED
A1 & A2	32/40	50mm	30mm	20mm (A1)

NOTE: (1) CONCRETE DRYING SHRINKAGE μ =650 AT 56 DAYS

CONCRETE (continued)

C7 ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS. IN EXPOSURE CONDITIONS GREATER THAN B1 USE ONLY PLASTIC CHAIRS.

C8 CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES.

C9 DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.

C10 FOR CHAMFERS, DRIP GROOVES, REGLETS, ETC., REFER TO ARCHITECT'S DETAILS, MAINTAIN COVER TO REINFORCEMENT AT THESE DETAILS.

C11 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

C12 CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.

C13 THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.

C14 CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT. APPROVED SPRAYED ON CURING COMPOUNDS THAT COMPLY WITH AS 3799 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED (REFER MANUFACTURER SPECIFICATION). POLYTHENE SHEETING OR WET HESSIAN MAY BE USED TO RETAIN CONCRETE MOISTURE WHERE PROTECTED FROM WIND AND TRAFFIC.

C15 CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REMOVED AND THE SLAB HAS ABSORBED ITS DEAD LOAD DEFLECTION.

C16 THE ENGINEER SHALL BE GIVEN 24 HOURS NOTICE FOR REINFORCEMENT INSPECTION AND CONCRETE SHALL NOT BE DELIVERED UNTIL FINAL APPROVAL OBTAINED.

C17 CONDUITS, PIPES ETC. SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF SLAB DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT

C18 REINFORCEMENTS SYMBOLS:
S DENOTES GRADE 250 S HOT ROLLED DEFORMED BARS TO AS 1302
N DENOTES GRADE 500 N DEFORMED BARS TO AS 1302 GRADE N
R DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO AS 1302
SL/RL DENOTES DEFORMED REINFORCING FABRIC TO AS/NZ 4671
W DENOTES HARD-DRAWN PLAIN WIRE TO AS 1303

NUMBER OF BARS IN GROUP — 17 N20-250 — BAR GRADE AND TYPE
NOMINAL BAR SIZE IN MM — SPACING IN MM

THE FIGURES FOLLOWING THE FABRIC SYMBOL SL or RL IS THE REFERENCE NUMBER FOR FABRIC TO AS/NZ 4671

C19 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

C20 SLAB REINFORCEMENT SHALL EXTEND AT LEAST 65mm ONTO MASONRY SUPPORT WALLS AND 50 PERCENT OF BOTTOM REINFORCEMENT SHALL BE CODGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS.

C21 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER. LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.

C22 SITE BENDING OF DEFORMED REINFORCING BARS SHALL BE DONE WITHOUT HEATING USING MECHANICAL BENDING TOOLS.

C23 WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.

C24 JOGGLES TO BARS SHALL BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS.

C25 FABRIC SHALL BE LAPPED 2 TRANSVERSE WIRES PLUS 50mm. BUNDLED BARS SHALL BE TIED TOGETHER AT 30 BAR DIAMETER CENTRES WITH 3 WRAPS OF THE WIRE.

C26 WHERE TRANSVERSE TIE BARS ARE NOT SHOWN PROVIDE N12-400 SPLICED WHERE NECESSARY AND LAP WITH MAIN BARS 400mm U.N.O.

C27 PROVIDE UPWARD CAMBER TO FORMWORK OF REINFORCED CONCRETE CANTILEVERS OF L/120, WHERE L IS THE PROJECTION BEYOND COLUMN OR WALL FACE, AND TO FORMWORK OF SLABS WHERE NOTED ON PLAN. MAINTAIN THE SLAB AND BEAM DEPTHS SHOWN.

C28 SLABS AND BEAMS SHALL BE CONSTRUCTED TO BEAR ONLY ON THE BEAMS, WALLS, COLUMNS, ETC. SHOWN ON THE DRAWINGS. ALL OTHER BUILDING ELEMENTS SHALL BE KEPT 15mm MINIMUM CLEAR FROM SOFFITS OF STRUCTURE.

C29 4-N12 TRIMMERS (1000 LONG) TO BE PLACED AT ANY PENETRATION GREATER THAN 150mm & LESS THAN 500mm WHETHER SQUARE OR CIRCULAR OR WHERE FABRIC HAS BEEN CUT. BARS TO BE PLACED DIAGONALLY & CENTRALLY ABOUT RENTRANT CORNERS. ANY PENETRATION GREATER THAN 500mm REFER TO DRAWINGS FOR DETAILS.

STRUCTURAL STEEL

S1 ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS 4100 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

S2 UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE IN ACCORDANCE WITH AS 3678 GRADE 250, OR AS 3679 GRADE 300, OR AS 1163 GRADE C350 AS APPROPRIATE.

S3 THREE (3) COPIES OR 1 TRANSPARENCY OF WORKSHOP FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AT LEAST 7 DAYS PRIOR TO COMMENCEMENT OF FABRICATION. FABRICATION NOT TO COMMENCE WITHOUT ENGINEER'S APPROVAL OF WORKSHOP DRAWINGS. ALL DIMENSIONS AND SETOUTS TO BE OBTAINED FROM ARCHITECTURAL DRAWINGS WHERE NOT INDICATED ON STRUCTURAL DRAWINGS.

S4

BOLT CATEGORY:	COMMENTS:
4.6/S	COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1111 SNUG TIGHTENED
8.8/S	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 SNUG TIGHTENED
8.8/TB	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A BEARING TYPE JOINT
8.8/TF	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION TYPE JOINT WITH FACING SURFACES LEFT UNCOATED

S5 UNLESS NOTED OTHERWISE ALL BOLTS SHALL BE M16 CATEGORY 8.8/S. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS AND WASHERS SHALL BE GALVANISED U.N.O.

S6 /TB AND /TF BOLTS TO BE INSTALLED IN ACCORDANCE WITH SECTION 15 OF AS 4100, USING EITHER THE PART-TURN METHOD R THE DIRECT-TENSION INDICATOR METHOD.

S7 FABRICATION SHALL COMPLY WITH AS 4100, SECTION 14

S8 ERECTION SHALL COMPLY WITH AS 4100, SECTION 15

S9 UNLESS NOTED OTHERWISE, ALL FILLET WELDS SHALL BE 6mm CONTINUOUS CATEGORY SP USING E41XX ELECTRODES. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS TO AS 1554.1.

S10 STEELWORK INTENDED TO BE CONCRETE ENCASED SHALL BE UNPAINTED. ENCASING CONCRETE TO BE AS SPECIFIED. PROVIDING A COVER ADEQUATE TO SUIT FIRE RATING OR EXPOSURE CONDITIONS. CONCRETE ENCASEMENT SHALL BE CENTRALLY REINFORCED WITH 5mm WIRE TO AS 1303 OR 6mm STRUCTURAL GRADE BARS TO AS 1302 AT 150mm PITCH.

S11 PROVIDE SEAL PLATES TO THE ENDS OF ALL HOLLOW SECTIONS, WITH 'BREATHER' HOLES IF MEMBERS TO BE HOT DIP GALVANISED.

S12 ALL STEELWORK SHALL BE SECURELY TEMPORARILY BRACED BY THE ERECTOR AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.

S13 STRUCTURAL STEELWORK NOT ENCASED IN CONCRETE SHALL HAVE THE FOLLOWING SURFACE TREATMENT IN ACCORDANCE WITH THE SPECIFICATION.

ELEMENT	SURFACE PREPARATION	PRIME COAT	SECOND COAT	THIRD COAT
TYPICAL MEMBERS	CLASS 2 1/2 BLAST	TBA	TBA	

S14 ALL GALVANISING OF STRUCTURAL STEELWORK TO AS 1650. THE CONTINUOUS AVERAGE ZINC COATING MASS TO BE 600 g/m2 (550 g/m2 MINIMUM).

S15 THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER AND OTHER ELEMENTS TO STEEL WHETHER OR NOT DETAILED IN THE DRAWINGS.

S16 THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK SHALL BE SUPERVISED BY A QUALIFIED ENGINEER EXPERIENCED IN SUCH SUPERVISION, TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET.

MASONRY

M1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700.

M2 STRENGTHS OF BRICKS, CLASS OF BLOCKS AND TYPE OF MORTAR SHALL BE AS FOLLOWS:-

ELEMENT	MATERIAL	CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH, f'uc	MORTAR CLASSIFICATION
ALL BLOCK UNO	CONC	15	M3

M3 MORTAR ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF THE SUPERINTENDENT.

M4 ALL MASONRY WALLS AND PIERS SUPPORTING SLABS AND BEAMS SHALL HAVE A PRE-GREASED GALVANISED STEEL SLIP JOINT BETWEEN CONCRETE SOFFIT AND THE TOP OF THE MASONRY ELEMENT U.N.O.

M5 ALL MASONRY SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.

M6 NON LOAD BEARING WALLS SHALL BE SEPARATED FROM CONCRETE ABOVE BY 12MM THICK CLOSED CELL POLYETHYLENE STRIP.

M7 NO CHASES OR RECESSES ARE PERMITTED IN LOAD BEARING MASONRY WITHOUT THE APPROVAL OF THE ENGINEER.

M8 REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING U.N.O.:-

BLOCKS SHALL BE STRENGTH GRADE 15 CONFORMING TO AS 2733

MORTAR SHALL COMPRISE 1 CEMENT : 0.25 LIME : 3 SAND

PROVIDE CLEANOUT HOLES AT BASE OF ALL WALLS AND ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS.

CORE FILLING GROUT TO HAVE A CHARACTERISTIC STRENGTH OF 20MPa, 10mm AGGREGATE 230mm SLUMP €30mm

PROVIDE 65mm COVER TO REINFORCING BARS FROM THE OUTSIDE FACE OF THE BLOCKWORK TO ALLOW ADEQUATE GROUT COVER.

M9 PROVIDE VERTICAL CONTROL JOINTS AT 6m MAX CENTRES, AND 3m MAXIMUM FROM CORNERS IN ALL MASONRY WALLS.

M10 BACKFILL TO RETAINING WALLS TO BE FREE DRAINING GRANULAR MATERIAL U.N.O. PROVIDE SUBSOIL DRAIN TO WEEP HOLES.

M11 DO NOT CONSTRUCT MASONRY WALLS ON SUSPENDED CONCRETE SLABS UNTIL SLAB HAS BEEN STRIPPED AND DEPROPPED.

M12 ALL CAVITY CONSTRUCTION TO HAVE GALVANISED/STAINLESS STEEL WALL TIES INSTALLED AS PER CLAUSE 3.8, AS 3700.

TIMBER

T1 ALL TIMBER DESIGN, CONSTRUCTION AND MATERIAL TO BE AS 1720.1 AND AS 1720.2 U.N.O.

T2 AS 1684 SHALL BE APPLIED TO DOMESTIC CONSTRUCTION IN SHELTERED LOCATIONS.

T3 SOFTWOOD TO BE MINIMUM GRADE F7 U.N.O. HARDWOOD TO BE MINIMUM GRADE F14.

T4 EXTERNAL TIMBER TO BE EITHER HARDWOOD DURABILITY CLASS I OR CLASS II AS PER AS 1720.2 OR IMPREGNATED PINE GRADE F7. PRESSURE TREATED TO AS 1604 AND RE-DRIED PRIOR TO USE. SUPPLEMENTARY TREATMENT SHALL BE APPLIED TO ALL CUT SURFACES. SUPPLY SUPPORTING DOCUMENTATION FOR PRESERVATIVE TREATMENT.

T5 TIMBER TRUSSES TO BE PRE-CAMBERED AN AMOUNT EQUAL TO DEAD LOAD DEFLECTION. THREE (3) COPIES OF SHOP DRAWINGS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL CLEARLY SHOWING THE DESIGN LOADS ON THE ROOF AND CEILING AND TRUSS NODE POINT LOADS AND PRECAMBER.

T6 ALL BOLTS IN TIMBER CONSTRUCTION TO BE MINIMUM M16 U.N.O. BOLT HOLES TO BE DRILLED EXACT SIZE. WASHERS UNDER HEADS AND NUTS TO BE AT LEAST 2.5 TIMES BOLT DIAMETER.

T7 TIMBER DIMENSIONS ON THE FINISHED WIDTH AND THICKNESS TO BE:

SEASONED SOFTWOOD	+5,-0mm
UNSEASONED SOFTWOOD	>F7 +3,-3mm
	<F7 +8,-3mm
SEASONED HARDWOOD	+2,-0mm
UNSEASONED HARDWOOD	+3,-3mm

(SEE ALSO CLAUSE 1.6.2 IN AS 2082)

T8 ALL TIMBER JOINTS AND NOTCHES ARE TO BE 100mm MINIMUM AWAY FROM LOOSE KNOTS, SEVERE SLOPING GRAIN, GUM VEINS OR OTHER MINOR DEFECTS.

RECEIVED
20 FEB 2008

Issue	Amendment	Date
1	FOR INFORMATION	310108

0 1 2 3 4 5 10m
BAR SCALE 1:100

PROJECT
HILL RESIDENCE
213-215 RIVERVIEW ROAD
AVALON NSW

ARCHITECTS:
CASEY BROWN ARCHITECTS

CLIENT
HILL

MURTAGH BOND STRUCTURESBURO

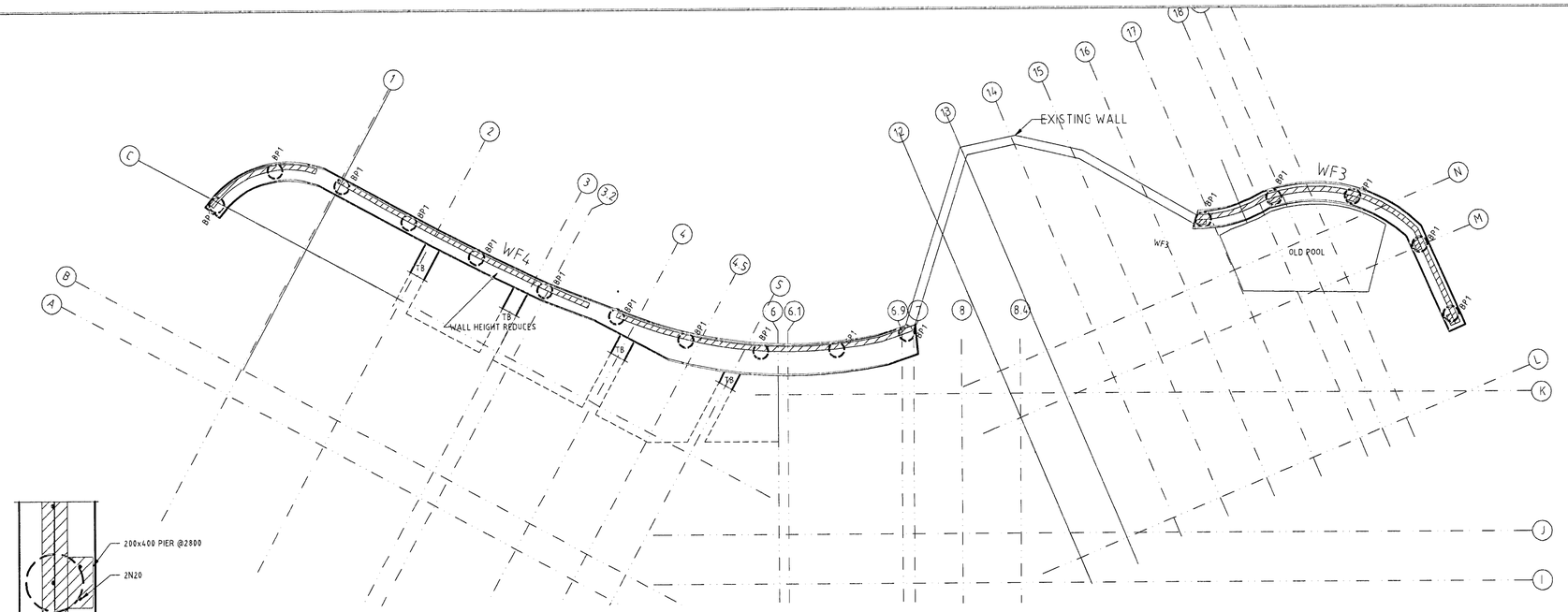
CONSULTING ENGINEERS
Unit 4
Southern Cross House
9 McKay St. Turner
A.C.T. 2601
tel. (02) 6247 0011
fax. (02) 6248 7518

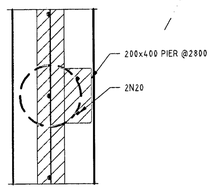
Director	K.J.M.
Design	K.J.M.
Scale	1:100 (A1)
Drawn	ORE
Checked	
Date	JAN 08

DRAWING TITLE:
GENERAL NOTES

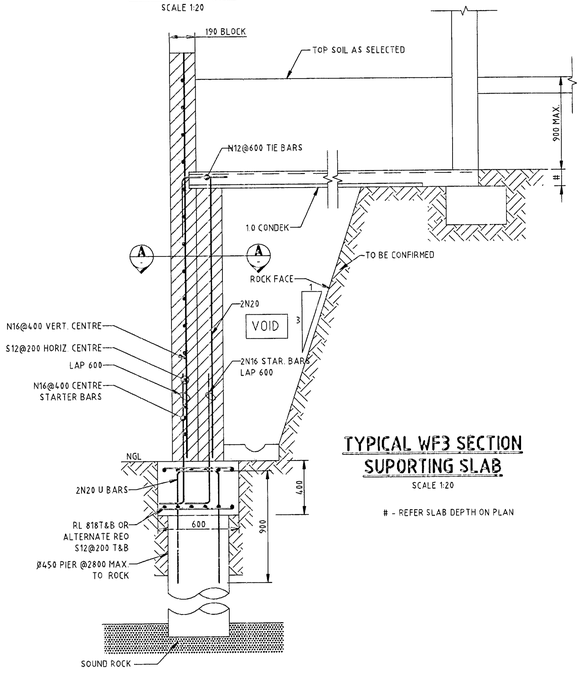
Job no. 07-026 Drg.no. S010 Rev. 1

cs/434



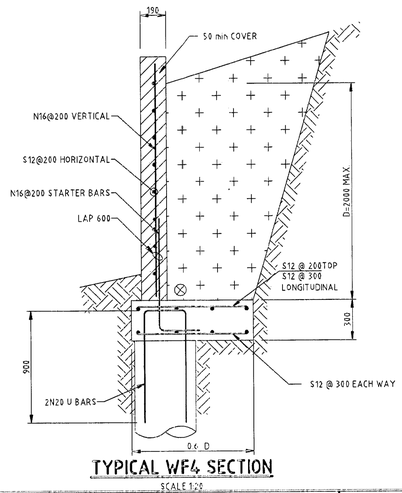


SECTION A-A
SCALE 1:20



TYPICAL WF3 SECTION SUPORTING SLAB
SCALE 1:20

- REFER SLAB DEPTH ON PLAN



TYPICAL WF4 SECTION
SCALE 1:20

FOOTING SCHEDULE		
MARK	SIZE	REMARKS
WF3	600W x400D (min)	SEE FW-3 TYPICAL SECTION S-102
WF4	VARIES W x300D (min)	SEE FW-4 TYPICAL SECTION S-102
T8	400W x 300D (min)	4-L8TM TOP & BTM

PIER SCHEDULE		
MARK	SIZE	REMARKS
BP1	Ø 450	2N20 U BARS

LEGEND

	DENOTES COLUMN OVER
-50	DENOTES SLAB LEVEL 50mm BELOW SLAB DATUM
50	DENOTES 50mm STEP TO TOP OF SLAB
150	DENOTES 150 OVERALL SLAB THICKNESS
CJ	DENOTES CONSTRUCTION JOINT
SJ	DENOTES SAW JOINT
ST J	DENOTES STRAIGHT JOINT
	DENOTES LOAD BEARING WALL UNDER
	DENOTES SPAN DIRECTION OF FLOOR SYSTEM
FS	DENOTES FOOTING STEP
	DENOTES CONCRETE BLOCK WALL
	DENOTES CONCRETE WALL

Issue	Amendment	Date
1	FOR INFORMATION	22010E
A	FOR CONSTRUCTION	31010E

0 1 2 3 4 5 10m
BAR SCALE 1:100

PROJECT
HILL RESIDENCE
213-215 RIVERVIEW ROAD
AVALON NSW

ARCHITECTS.
CASEY BROWN ARCHITECTS

CLIENT
HILL

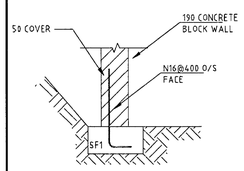
MURTAGH BOND STRUCTURESBURO
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Design	K.J.M.
Scale	1:100 (A1)
Drawn	G.Z.
Checked	
Date	JAN 08

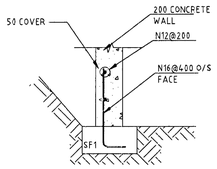
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Job no. 07-026 Drg.no. S102 Rev. A

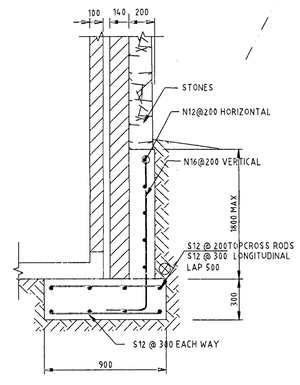
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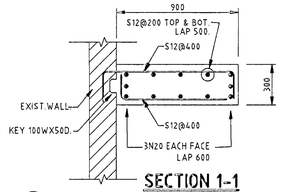


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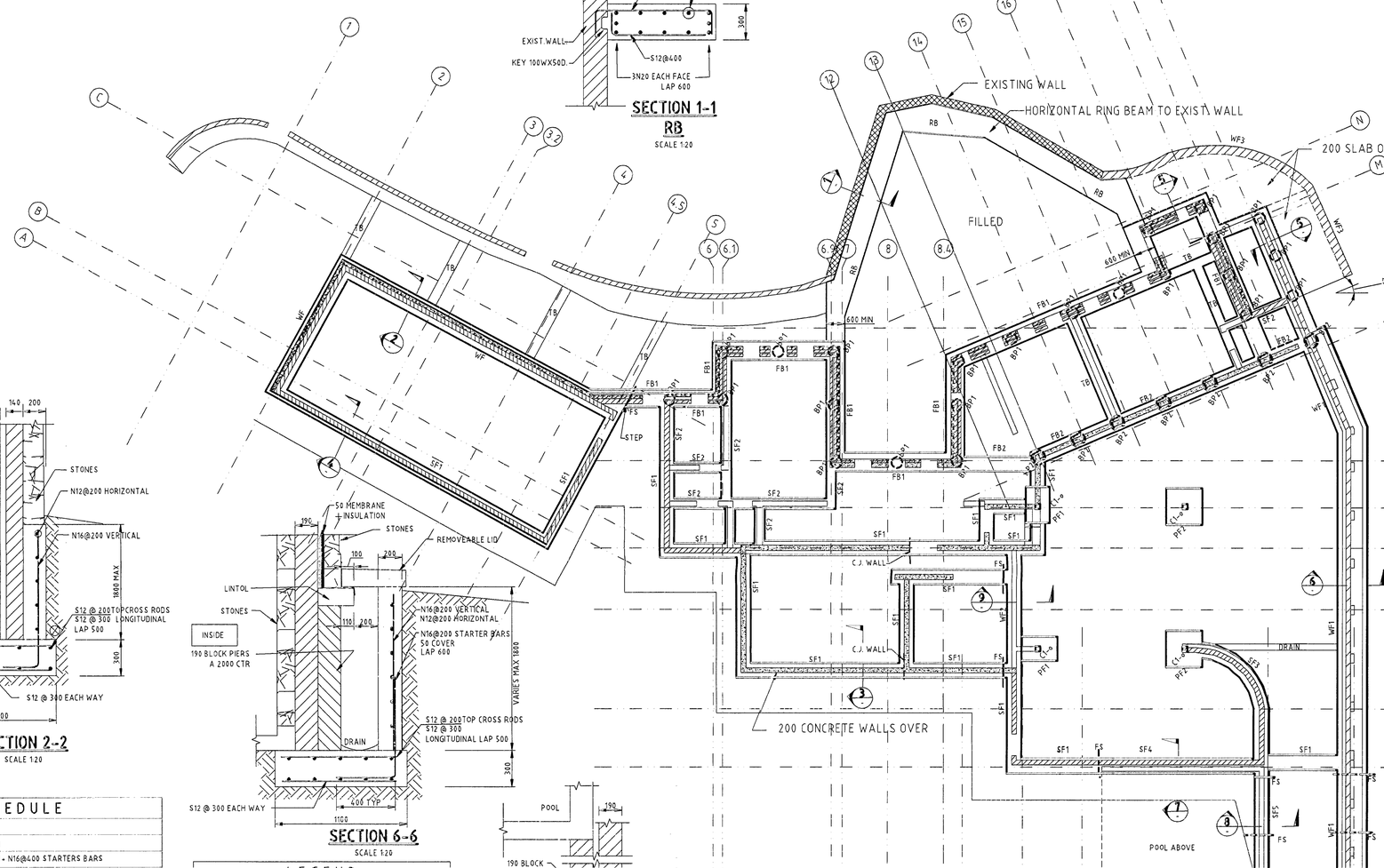


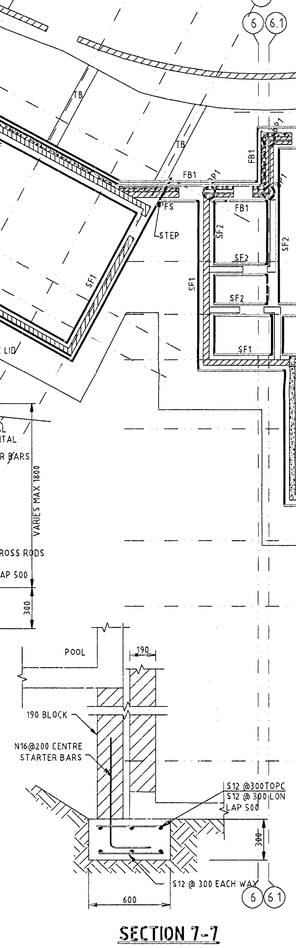
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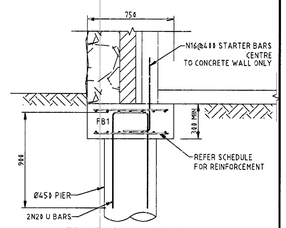


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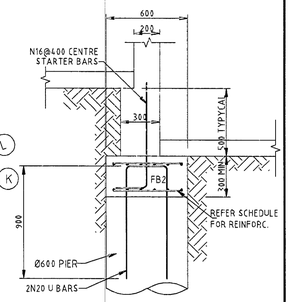




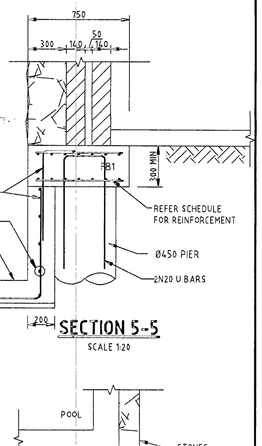
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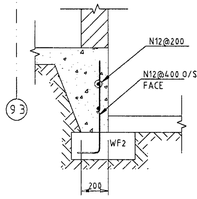
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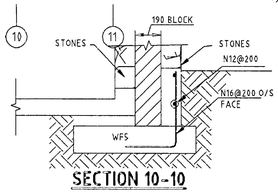
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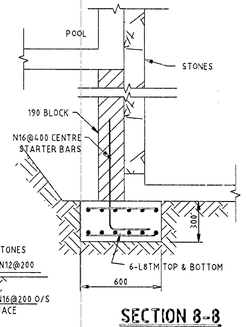
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SECTION 9-9
SCALE 1:20



SECTION 10-10
SCALE 1:20



SECTION 8-8
SCALE 1:20

FOOTING SCHEDULE		
MARK	SIZE	REMARKS
SF1	600W x 200D (min)	6-L8TM TOP & BTM
SF1-A	600W x 200D (min)	6-L8TM TOP & BTM + N16@400 STARTERS BARS
SF2	400W x 200D (min)	4-L8TM TOP & BTM
SF3	600W x 200D (min)	4S12 TOP & BOTTOM
SF4	600W x 300D (min)	SEE SECTION 7-7 /S103
SF5	600W x 300D (min)	SEE SECTION 8-8/S103
WF	900W x 300D (min)	SEE SECTION 2-2 /S103
WF1	1100W x 300D (min)	SEE SECTION 6-6 / S103
WF2	600W x 200D (min)	6-L8TM TOP & BTM + N12@400 STARTERS
WF3	600W x400D (min)	SEE FW-3 TYPICAL SECTION S-102
WF4	VARIES W x300D (min)	SEE FW-4 TYPICAL SECTION S-102
WF5	900 W x300D (min)	S200@300TOP S12@200 CROSS BARS/S12@300 BOTT. EACH WAY
TB	400W x 300D (min)	4-L8TM TOP & BTM
FB1	750W x 300D (min)	7-L8TM TOP & BTM + N16@400 CONCRETE WALL STARTERS
FB2	600W x 300D (min)	6-L8TM TOP & BTM + N16@400 CONCRETE WALL STARTERS

PAD SCHEDULE		
MARK	SIZE	REMARKS
PF1	1000x1500 x 400D MIN	SL92 BOTTOM
PF2	1500SQ x 400D MIN	SL92 BOTTOM

LEGEND	
	DENOTES COLUMN OVER
-50	DENOTES SLAB LEVEL 50mm BELOW SLAB DATUM
50	DENOTES 50mm STEP TO TOP OF SLAB
150	DENOTES 150 OVERALL SLAB THICKNESS
C/J	DENOTES CONSTRUCTION JOINT
S/J	DENOTES SAW JOINT
ST/J	DENOTES STRAIGHT JOINT
	DENOTES LOAD BEARING WALL UNDER
	DENOTES SPAN DIRECTION OF FLOOR SYSTEM
FS	DENOTES FOOTING STEP
	DENOTES CONCRETE BLOCK WALL
	DENOTES CONCRETE WALL

PIER SCHEDULE		
MARK	SIZE	REMARKS
BP1	Ø 450	2N20 U BARS
BP2	Ø 600	2N20 U BARS

Issue	Amendment	Date
1	FOR INFORMATION	220108
A	FOR CONSTRUCTION	310108

PROJECT
HILL RESIDENCE
213-215 RIVERVIEW ROAD
AVALON NSW

ARCHITECTS.
CASEY BROWN ARCHITECTS

CLIENT
HILL

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Drawn	G.Z.
Checked	
Date	JAN 08

DRAWING TITLE.
LOWER LEVEL FOOTING PLAN

Job no. 07-026 Drg.no. S103 Rev. A

BASIX Certificate

Building Sustainability Index www basix nsw gov au

Certificate number 149831S

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below Terms used in this certificate or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 29/06/2006, published by the Department of Planning This document is available at www basix nsw gov au

Director-General
Date of issue Monday, 23 July 2007

NSW GOVERNMENT
Department of Planning

Score

- ✓ Water 40 (Target 40)
- ✓ Thermal comfort pass (Target pass)
- ✓ Energy 41 (Target 40)

Description of project

Project address	
Project name	Riverview (DA)
Street address	213 Riverview Road Clareville 2107
Local Government Area	Pittwater Council
Plan type and plan number	Deposited Plan 110460
Lot no	X & Y
Section no	0 0
Project type	
Project type	separate dwelling house
No of bedrooms	6
Site details	
Site area (m²)	2766
Roof area (m²)	600
Conditioned floor area (m2)	603
Unconditioned floor area (m2)	8
Total area of garden and lawn (m2)	1823
Assessor details and thermal loads	
Assessor number	20647
Certificate number	33464518
Cooling load (MJ/m² year)	32
Heating load (MJ/m² year)	74
Other	
none	n/a

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Fixtures			
The applicant must install showerheads with a minimum rating of 3 star in all showers in the development		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 3 star in each toilet in the development		✓	✓
The applicant must install taps with a minimum rating of 3 star in the kitchen in the development		✓	
The applicant must install basin taps with a minimum rating of 3 star in each bathroom in the development		✓	
Alternative water			
Rainwater tank			
The applicant must install a rainwater tank of at least 40000 litres on the site This rainwater tank must meet, and be installed in accordance with the requirements of all applicable regulatory authorities	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 375 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam)		✓	✓
The applicant must connect the rainwater tank to			
• the cold water tap that supplies each clothes washer in the development		✓	✓
• at least one outdoor tap in the development (Note NSWHealth does not recommend that rainwater be used for human consumption in areas with potable water supply)		✓	✓
Swimming pool			
The swimming pool must not have a volume greater than 70 kilolitres	✓	✓	
The swimming pool must have a pool cover		✓	
The swimming pool must be outdoors	✓	✓	

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Simulation Method			
The applicant must attach the certificate referred to under "Assessor Details' on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or if the applicant is applying for a complying development certificate for the proposed development, to that application) The applicant must also attach the Assessor Certificate to the application for an occupation certificate for the proposed development			
The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol			
The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX certificate, including the Cooling and Heating loads shown on the front page of this certificate			
The applicant must show on the plans accompanying the development application for the proposed development all matters which the Assessor Certificate requires to be shown on those plans Those plans must bear a stamp of endorsement from the Accredited Assessor to certify that this is the case The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate if applicable), all thermal performance specifications set out in the Assessor Certificate and all aspects of the proposed development which were used to calculate those specifications			
The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Hot water			
The applicant must install the following hot water system in the development or a system with a higher energy rating solar (gas boosted) with a performance of more than 45 RECs	✓	✓	✓
Cooling system			
The living areas must not incorporate any cooling system or any ducting which is designed to accommodate a cooling system		✓	✓
The bedrooms must not incorporate any cooling system or any ducting which is designed to accommodate a cooling system		✓	✓
Heating system			
The applicant must install the following heating system, or a system with a higher energy rating in at least 1 living area gas hydronic system, Energy rating n/a		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom gas hydronic system Energy rating n/a		✓	✓
Ventilation			
The applicant must install the following exhaust systems in the development			
At least 1 Bathroom individual fan ducted to façade or roof Operation control interlocked to light		✓	✓
Kitchen individual fan ducted to façade or roof Operation control manual switch on/off		✓	✓
Laundry individual fan, ducted to façade or roof Operation control interlocked to light		✓	✓
Artificial lighting			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps			
• the kitchen		✓	✓
• all bathrooms/toilets,		✓	✓
• the laundry		✓	✓
• all hallways,		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Natural lighting			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting	✓	✓	✓
The applicant must install a window and/or skylight in 1 bathroom(s)/toilet(s) in the development for natural lighting	✓	✓	✓
Swimming pool			
The development must not incorporate any heating system for the swimming pool		✓	
The applicant must install a timer for the swimming pool pump in the development		✓	
Alternative energy			
The applicant must install a photovoltaic system with the capacity to generate at least 2 peak kilowatts of electricity as part of the development The applicant must connect this system to the development's electrical system	✓	✓	✓
Other			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling		✓	
The applicant must construct each refrigerator space in the development so that it is 'well ventilated", as defined in the BASIX definitions		✓	
The applicant must install a fixed outdoor clothes drying line as part of the development		✓	

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

EXTERIOR FINISHES SCHEDULE

213-215 RIVERVIEW ROAD, AVALON

Revised 15/1/08

PAVILION 1 – LIVING AND DINING PAVILLION

NORTH	SOUTH	EAST	WEST
- 200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers -Stained horizontal timber siding (spotted gum)	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear glass with roll-dn shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers

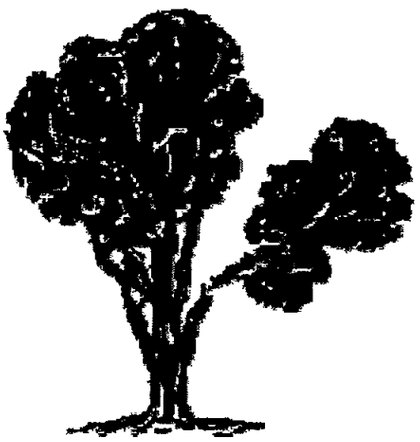
PAVILION 2 – FAMILY ROOM PAVILION

NORTH	SOUTH	EAST	WEST
- 200 thick dry set black stone base to match new pool house - stained timber window frames - clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames - clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames - clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers -horizontal stained timber siding (spotted gum)	-200 thick dry set black stone base to match new pool house - stained timber window frames - clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers

PAVILION 3 – KITCHEN/STUDY PAVILLION

NORTH	SOUTH	EAST	WEST
- 200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear glass with roll-dn shutters -copper hood and roofing - painted black steel outriggers -horizontal stained timber siding	-200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers

PAVILION 4 – BEDROOM PAVILION			
NORTH	**SOUTH**	**EAST**	**WEST**
- 200 thick dry set black stone base/high walls to match new pool house - stained timber window frames -clear low e double glazed glass with roll dn aluminium shutters -horizontal stained timber siding (spotted gum) -copper hood and roofing - painted black steel outriggers	- 200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -horizontal stained timber siding (spotted gum) -copper hood and roofing - painted black steel outriggers	- 200 thick dry set black high walls to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -copper hood and roofing - painted black steel outriggers	- 200 thick dry set black stone base to match new pool house - stained timber window frames -clear low e double glazed glass with roll-dn aluminium shutters -horizontal stained timber siding (spotted gum) -copper hood and roofing - painted black steel outriggers



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ABN 97 965 355 200

TREE MANAGEMENT REPORT

June 2007

Site: **213-215 Riverview Road**
Clareville

Client: **Mr & Mrs Hill**
213-215 Riverview Road
Clareville

Commissioned By: **Robert Brown**
Casey Brown Architecture
Level 1
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Phone (02) 9360-7977

Authors: **Kyle A Hill**
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Consulting Arborist
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Diploma of Horticulture (Landscape Design)

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1 Summary

Robert Brown of Casey Brown Architecture requested a Tree Management Report relating to existing trees on site at , 213-215 Riverview Road Clareville Twenty Five (25) individual & group tree specimens have been identified as requiring examination in relation to the proposed development, all have been described & discussed

Kyle Hill & Venesser Oakes, Consulting Arborists & authors, have prepared this Tree Management Report based on visual assessment of the subject tree specimens on 14 June 2007

This report discusses the current & likely future condition of the subject tree specimens identified by

- Survey, dated 08/05/2007, prepared by Paul Keen & Company, provided by Robert Brown of Casey Brown Architecture (25),
- Site Plan, dated 22/05/2007, prepared by Casey Brown Architecture, provided by Robert Brown of Casey Brown Architecture, &
- Observations on site by Kyle Hill & Venesser Oakes

The subject tree specimens have been identified, described & discussed The aim of this report is to confirm the viability of the subject trees relating to current health, vigour, condition & any impact foreseen by the proposed re-development

The proposed re-development includes the demolition of the existing two residential dwellings & the construction of one residential dwelling & associated landscape works

For all tree specimens being retained, Tree Protection Zones, as described/specified, are essential to assist in the protection, long term health & viability of the subject tree specimens

Photographic documentation of the condition of all retained tree specimens is strongly recommended Documentation should commence prior to any work commencing, & be updated at monthly intervals during construction & post construction for a minimum period of six months Annual updates should form part of the trees' long term management strategy

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2 Introduction

This report contains observations & recommendations intended to assist in the management of Twenty Five (25) individual & group tree specimens within the property , 213-215 Riverview Road Clareville

This report discusses the current & likely future condition of the subject tree specimens identified by

- Survey, dated 08/05/2007, prepared by Paul Keen & Company, provided by Robert Brown of Casey Brown Architecture (25),
- Site Plan, dated 22/05/2007, prepared by Casey Brown Architecture, provided by Robert Brown of Casey Brown Architecture, &
- Observations on site by Kyle Hill & Venesser Oakes

Kyle Hill & Venesser Oakes, the authors, visited the site 16 June 2007

The aim of this report is to confirm the viability of individual tree specimens & groups of tree specimens relating to current & future health, vigour & condition No trees other than those identified by the above methods have been discussed

3 Methodology

Assessment of the tree has been from ground level by eye, using visual tree assessment (VTA) techniques developed by Claus Mattheck, in The Body Language of Trees (1994)

Assessment includes

- Tree's current condition & likely future health
- Species tolerance to root disturbance and/or development
- Likely future hazard potential to persons & property
- Tree's amenity value, such as significance, screening & habitat

No root analysis, soil testing, 'Resistograph'® drilling or aerial canopy inspection was undertaken See the following Appendix for further information

- Appendix A Glossary of common Arboreal terms
- Appendix B Tree Protection & Management
- Appendix C Post construction Planting & Management
- Appendix D Survey (not to scale)

4 Observations

4.1 The Site

The subject tree specimens are all located within the subject properties Adjacent to the subject property are residential dwellings The subject & neighbouring properties have well-established tree & shrub specimens

4.2 The Proposal

The proposed re-development includes the demolition of the existing two residential dwellings & the construction of one residential dwelling & associated landscape works

4.2 The Trees – Summary of Description & Condition

Table to be read in conjunction with Appendix A– Common Arboreal Terms

#	Identification	Height (m)	Crown (m)	DBH (m)	CRZ	Hth/ Vig	Observations/Comments
1	2x *Cupressus torulosa* Bhutan cypress	4 0-4 5	<1	<0 10	1 0	E	Not protected by TPO, trees are within proposed driveway footprint
2	2x *Archontophoenix cunninghamiana* Bangalow Palm	4 0-5 0	4 0-4 5	0 16 & 0 18	1 5	E	Grouped Planting, within proposed residence footprint
3	*Cupressus cashmiriana* cv Kashmir cypress	4 5-5 0	30 3 5	0 12	1 0	E	Within proposed residence footprint
4	Clump of *Chrysalidocarpus lutescens* Golden Cane Palm	3 5-4 0	3 5-4 0	0 10	1 0	E	+ shrub specimens less than 3-0m Transplant clump of palms
5	Clump of *Chrysalidocarpus lutescens* Golden Cane Palm	4 0-5 0	4 0-4 5	0 10	1 0	E	Transplant clump of palms (if required)
6	*Eucalyptus paniculata* Gray ironbark	16 0 16-5	8 5-9 0	0 49	3 0	VG	Retain & protect Some small diameter dead wood, medium diameter pruning at stem junction, bark discolouration at branch junctions, possible longicorn activity, existing stairs immediately adjacent to tree Below existing retaining wall
7	Various *Grevillea robusta, Corymbia maculata, Eucalyptus paniculata* and *Melaleuca* specimens						Specimens located outside construction zone To be retained & protected as a group

#	Identification	Height (m)	Crown (m)	DBH (m)	CRZ	Hth/ Vig	Observations/Comments
8	*Syagrus romanzoffiana* Cocos Palm	8 0-8 5	5 5 6 0	0 25	1 5	E	Not protected by TPO
9	*Cupressus sempervirens* cv Mediterranean Cypress	5 0-5 5	1-0	0 13	1 0	G	Not protected by TPO
10	*Cupressus sempervirens* cv Mediterranean Cypress	2 5-3 0	1 0	0 10 approx	1 0	F	Not protected by TPO, Suppressed
11	*Jacaranda mimosifolia* Jacaranda	4 0-4 5	4 0-4 5	Multi <0 23	1 5	F	Retain & protect Co-dominant stems, included stem/branch junctions, topped, large diameter pruning, outside property boundary
12	*Washingtonia filifera* California fan palm	4 0-4 5	2 0-2-5	0 29	1 5	VG	Retain & protect Split frond bases, outside property boundary
13	*Corymbia maculata* Spotted gum	14 0-14 5	7 0-7 5	0 46	2 5	F	Retain & protect Raised soil level, significant tip dieback, medium diameter deadwood, middle stem has large wound with fungal bracket present
14	*Eucalyptus paniculata* Gray ironbark	19-19-5	11 0-11 5	0 71	4 0	G	Retain & protect Longicorn activity at branch junctions, previous large diameter pruning, medium to large diameter deadwood
15	*Washingtonia filifera* California fan palm	4 5-5 0	2 5-3 0	0 34	2 0	E	Retain & protect Growing against Tree 16

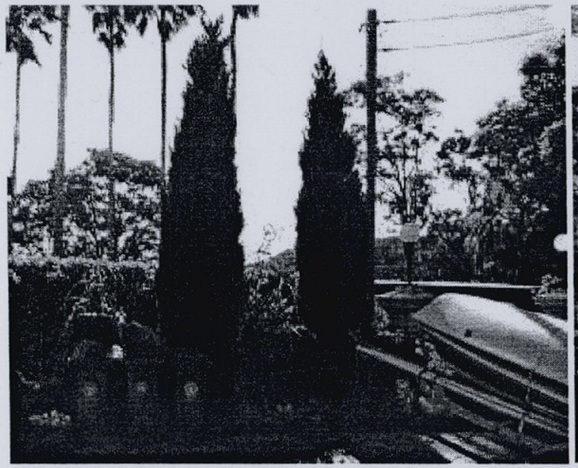
#	Identification	Height (m)	Crown (m)	DBH (m)	CRZ	Hth/ Vig	Observations/Comments
16	*Eucalyptus paniculata* Gray ironbark	17 0-17 5	8 0 8 5	0 60	3 0	Unknown	½ canopy leaning completely (suppressed by competition) over existing and proposed structures, longicorn activity, medium diameter deadwood, significant tip dieback, significant epicormic growth, previous large diameter dead wood removed, requires aerial inspection **May require removal**
17	*Corymbia maculata* Spotted gum	7 5-8 0	2 5-3 0	0 19	1 0	P-F	Retain & protect Suppressed, small diameter dead wood and tip dieback
18	*Schefflera actinophylla* Umbrella Tree	7 0-7 5	3 5-4 0	Multi <0 23	1 5	E	Weed species
19	*Corymbia maculata* Spotted gum	16 5-17 0	8 5-9 0	0 39	2 0	G	Retain & protect Significant soil level changes, Significant diameter dead wood
20	*Corymbia maculata* Spotted gum	15 0-15 5	3 0-3 5	0 39	2 0	G	Retain & protect Suppressed, small diameter deadwood, twisted trunk likely site of internal fracture, reaction wood developing, requires monitoring
21	*Allocasuarina torulosa* Forest Oak	5 5-6 0	4 0-4 5	0 20	1 0	VP	Main stem dead, topped, storm damage, soil level change (road) **Likely to fail in short term**
22	*Jacaranda mimosifolia* Jacaranda	10 0-10 5	7 0-7 5	0 30	1 5	VG	Retain & protect Planted after garden bed built, some small diameter dieback, small to medium diameter pruning, minor epicormic growth, canopy leans towards existing building looking for light (competition)

#	Identification	Height (m)	Crown (m)	DBH (m)	CRZ	Hth/ Vig	Observations/Comments
23	*Corymbia maculata* Spotted gum	15 5-16 0	11 5-12 0	0 48	2 5	G	Retain & protect Adjacent to existing shed, proposed deck within this area, tight branch junctions, longicorns damage, some fibre buckling, possible mistletoe, storm damage, requires monitoring
24	*Cedrus deodara* Deodar Cedar					Poor	Seek removal independent of proposal
25	*Dracaena draco*, *Phoenix canariensis* specimens						Line of existing wall to remain *Dracaena draco* not impacted upon by proposal, *Phoenix canariensis* not TPO protected (too small)

Additional Notes:

- **All trees noted to have deadwood should be pruned prior to commencement of residence construction.**
- 13-16 have caused damage to adjacent wall, all have soil level changes both within property and roadway

Tree Images



Tree 1

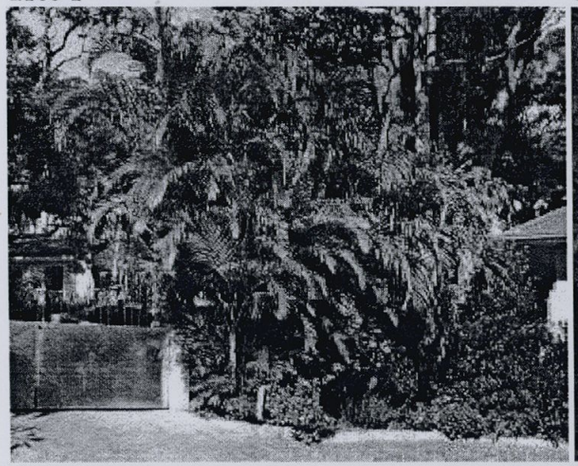


Tree 2

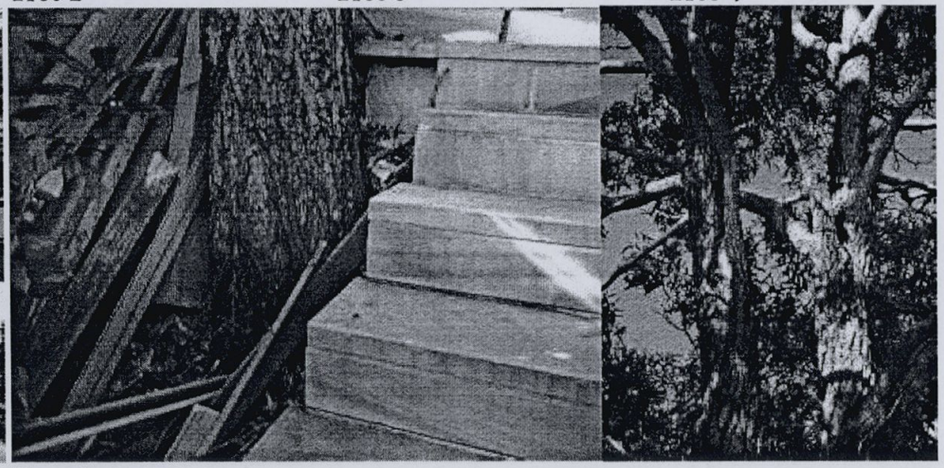
Tree 3



Tree 4



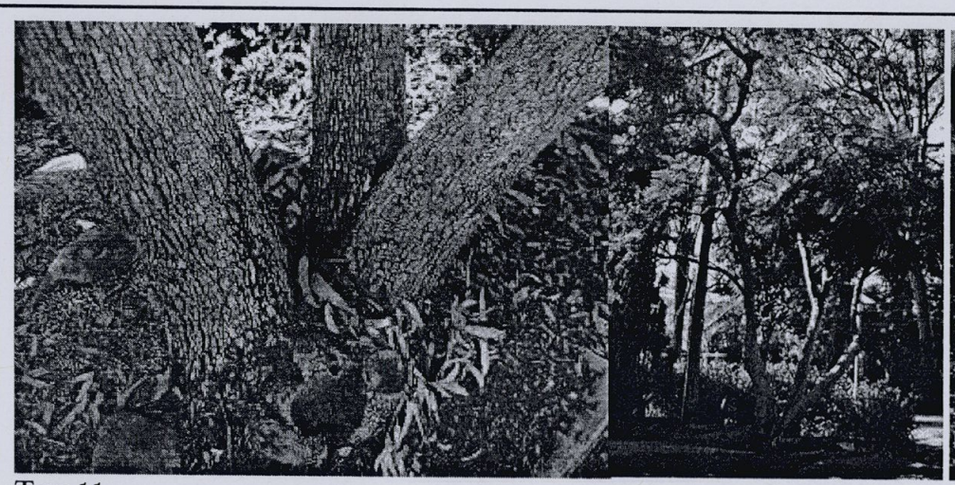
Tree 5



Tree 6



Trees 9



Tree 11

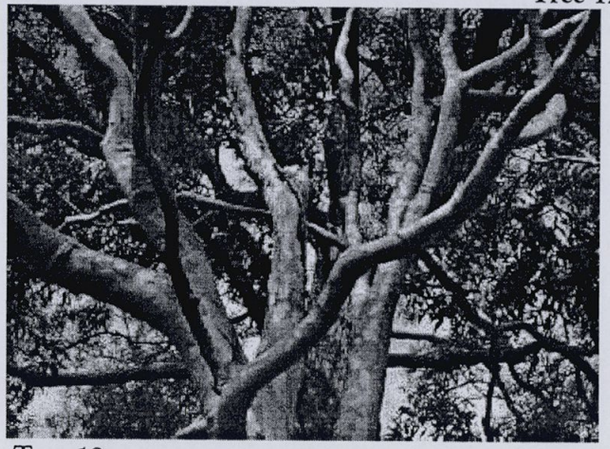


Tree 12



Tree 13 15 & 14

Lack of 'flaring' at base of trunk indicate that the adjacent retaining wall build after trees were planted



Tree 13

Wound on middle stem

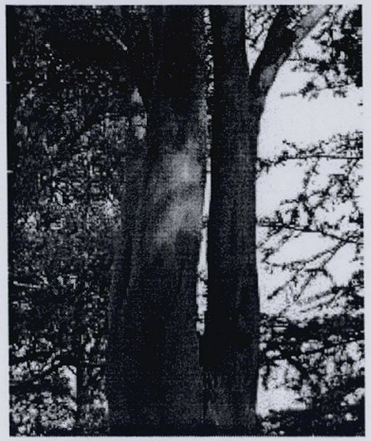


Tree 20

Shape of trunk & 'flaring' indicate internal wound



Tree 21



Tree 23



Tree 24

5 Discussion

Of the Twenty Five (25) individual & group tree specimens that have been identified & discussed 3 trees will require removal due to their location, 2 trees will require slight modification to the proposal as well as the use of 'tree friendly' construction techniques The remaining 20 trees discussed should not be adversely affected by the proposal, however they will require monitoring throughout construction

A number of additional tree specimens are also located with the proposed footprint, these tree specimens are not considered to be significant by Pittwater Council & are not protected by the "Tree Preservation Order" These tree specimens are all able to be removed at the discretion of the client unrelated to the proposal for development

All retained tree specimens that have deadwood within their canopies are recommended to be pruned after demolition is complete but prior to set out of the new proposed residence All pruning work to be undertaken by suitably experienced & qualified practising arborists These persons must be able to interpret specifications for pruning to be prepared at the time that final Conditions of Consent are issued Such specifications are to be prepared by the retained consulting arborist using the Australian Standard (AS4373 2007) as the planning instrument

Contractors for the removal of nominated tree specimens must operate within the guidelines contained in the WorkCover NSW Industry "Code of Practice" for Tree Workers Specifications for tree specimens to be transplanted can be prepared when final Conditions of Consent are issued, also by your consulting arborist

Regular (documented) monitoring should also form part of the long term management of all trees on site

Trees requiring aerial inspection

Tree 16 as assessed from ground level applying VTA criteria has been identified as potentially a problem tree specimen regardless of any proposal for development This tree specimen has been **compromised by competition** (tree has only a half canopy, all leaning towards/over the existing & proposed residences) from other larger older tree specimens discussed Noted to be of significance & worthy of an aerial inspection is

I Conductive tissue pest damage, (longicorn beetle larval workings),

II Medium diameter deadwood,

III Significant tip dieback,

IV Large volume of foliage present is epicormic,

V Large diameter previously removed branch wounds (pruning sites)

VI Fibre buckling & possible corresponding bark splits to major branch

This tree specimen is potentially prone to failure

Trees to be removed

Tree 1 is located immediately adjacent to the proposed driveway Construction of the driveway will result in the removal of a significant portion of the root system of this specimen

Trees 2 & 3 are located within the footprint of the development & will require removal if the proposal is to proceed By species this is a very difficult palm species to successfully transplant, as such removal & replacement is favoured Retention of this specimen would require significant redesign of the proposed driveway & pool

Trees requiring 'tree friendly' construction techniques &/or minor redesign of proposal.

Tree 6 is currently located between an existing retained garden bed & access stair way (see Tree Images within section 4 2 of this report) For this tree to be successfully retained these adjacent structures are to be retained as is & incorporated into the proposal

Tree 23 is located within the marked retaining wall to the rear of the premises Robert Brown of Casey Brown Architecture verbally indicated that the line of this retaining wall has been modified & is now located along it's current path The revised location of this wall will allow the retention of this specimen, however all works to be carried out within the CRZ of this tree must be done so by hand & without damaging either the root system or trunk of this specimen

Trees to be retained

All other trees onsite are to be retained & protected

Trees requiring other treatment

Trees 4 & 5, by virtue of their species, have the potential to be transplanted if required

6 Recommendations

Recommendation is made that

- An application for the **removal of three (3) tree specimens** as discussed in section **4.2 The Trees – Summary of Description & Condition** to be completed prior to the commencement of works,
- Aerial inspection of **Tree 16**,
- **Trees 6, 7, 11 to 15, 16** (with approval post aerial inspection), **17 to 21** (likely to die in short term), **22, 23 & 25** are to be protected throughout construction,
- Trees located below development proposed by DA are to be isolated by fencing established loosely across the subject sites,
- Where possible retained trees are to be protected as a group, i e with the one fence surrounding all specimens Where group protection is not possible retained trees are to be protected individually Protection fencing is to be
  - No closer than CRZ distances as specified in Section **4.2 – The Trees – Summary of Description & Condition** Where it is not possible to construct fencing at CRZ distances, trunk protection (in the form of vertical boards) will be required, this is not anticipated on this site
  - Installation of 'Rumble Boards' or similar soil protection/compaction minimisation devices are required where protection fencing is not possible &/or where access is required within 5 0metres of any tree examined
- TPZ installation is to be completed & certified prior to any construction works commencing TPZ fencing is to comply, at all times, with the specifications contained within **Appendix B Tree Protection & Management** of this report,
- Soil levels within the specified TPZ must remain as they currently are Soil levels are not to be altered in any way within TPZ,
- Photographic documentation of the condition of all retained trees is strongly recommended Documentation should commence prior to any work commencing, & be updated at monthly intervals during construction & then six monthly post construction for a minimum period of twelve (12) months Annual updates should form part of the tree's long term management strategy

Growing My Way Tree Services are suitably experienced & widely recognised as being capable of providing the recommended aerial inspection of **Tree 16,** as well as all certification of recommendations as having been satisfactorily established as well as periodic site updates related to tree specimens retained on site

If you have any questions relating to this report or implementation of recommendations, please contact Kyle Hill on 0412-221-962

Yours faithfully,



Kyle A Hill Practicing & Consulting Arborist

7 Limitations on the use of this report

This report is to be utilised in its entirety only Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation

8 Assumptions

Care has been taken to obtain information from reliable resources All data has been verified insofar as possible, however, Growing My Way Tree Services, can neither guarantee nor be responsible for the accuracy of information provided by others

Unless stated otherwise

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection, and

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future

9 Recommended References

Barrell, J 1993 *'Preplanning Tree Surveys Safe Useful Life Expectancy (SULE) is the Natural Progression'*, Arboricultural Journal 17 1, February 1993,

Barrell, J 1995, *'Pre development Tree Assessments'*, in Trees & Building Sites, Proceedings of n International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois,

Dr G Watson & Dr D Neely, *'Trees & Building Sites'*, ISA Illinois USA 1995,

Dr N Matheny & Dr J R Clark, *'Trees & Development'*, ISA Illinois USA 1998 ,

Phillip J Craul, *'Urban Soil in Landscape Design'*, J Wiley & Sons, New York USA 1992,

Clark, Ross, *'A Guide to Assessment of Tree Quality'* NATSPEC/ Construction Information, Milson's Point NSW,2003 &

Clark, Ross *'Purchasing Landscape Trees'*, Construction Information Systems Australia Pty Ltd , Milson's Point NSW, 1996

10 Selected Bibliography

Hitchmagh, J D 1994 *'Urban Landscape Management'*, Inkata Press, Sydney

Mattheck, C & Breloar, H (1994) *'Body Language of Trees'* The Stationery Office London

A54373 96 *'Pruning of Amenity Trees'*, Standards Australia

BS5837-1991 *'Guide for Trees in Relation to Construction'*, Standards Board, UK

Appendix A - Glossary

Glossary of common Arboreal terms

Age: **I** *Immature* refers to a refers to a well-established but juvenile tree

SM *Semi mature* refers to a tree at growth stages between immaturity & full size

M *Mature* refers to a full sized tree with some capacity for further growth

LM *Late Mature* refers to a full sized tree with little capacity for growth that is not yet about to enter decline

OM *Over mature* refers to a tree about to enter decline or already declining

LS *Live Stag* refers to a tree in a significant state of decline This is the last life stage of a tree prior to death

Hth & Vig Health & Vigour

Health refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (ie trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions These are not directly connected with health & it is possible for a tree to be healthy but in poor condition/vigour **Classes are:**

Excellent (E), V Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Vigour refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback **Classes are:**

Excellent (E), V Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Diameter at Breast Height (DBH) refers to the tree trunk diameter at breast height (1 4 metres above ground level)

Critical Root Zone (CRZ) refers to a radial offset of Five (5) times the trunk DBH raised to the next 0 5m increment (measured from the centre of the trunk) This zone is often the location of the tree's structural support roots, i e primary woody roots

Primary Root Zone (PRZ) refers to a radial offset of ten (10) times the trunk DBH measured from the centre of the trunk This zone often contains a significant amount of (but by no means all of a tree's) fine, non-woody roots required for uptake of nutrients, oxygen & water

Tree Protection Zone (TPZ) is a "No Go Zone" surrounding a tree to aid in its ability to cope with disturbances associated with construction works Tree protection involves minimising root damage that is caused by activities such as construction Tree protection also reduces the chance of a tree's decline in health or death & the possibly damage to structural stability of the tree from root damage

To limit damage to the tree, protection within a specified distance of the tree's trunk must be maintained throughout the proposed development works No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ

Using the *British Standard for Trees on Construction Sites* (BS5837), a TPZ is based on the age of the tree, young, middle aged or mature, the trunk diameter at D B H & the tree's vigour A TPZ is required for each tree or group of trees within five metres of building envelopes

Branch Bark Ridge & Branch Bark Collar (BBR & BBC) a zone of natural protection

Stem/bark inclusion refers to a genetic fault in the tree's structure This fault is located at the point where the stems/branches meet In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint

Decay refers to the break down tissues within the tree There are numerous types of decay that affect different types of tissues, spread at different rates & have different affect on both the tree's health & structural integrity

Point of Attachment refers to the point at which a stem/branch etc join

Dead wood refers to any whole limb that no longer contains living tissues (eg live leaves &/or bark) Some dead wood is common in a number of tree species

Die back refers to the death of growth tips/shoots & partial limbs Die back is often an indicator of stress & tree health

One dimensional crown refers to branching habits & leaves that extend/grow in one direction only There are many causes for this growth habit such as competition & pruning

Crown Foliage Density of Potential (CFDP) refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species CFDP is measured as a percentage

Epicormic growth/shoots refers to growth/shoots that are/have sprouted from axillary buds within the bark Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc

Over Head Powerlines (OHP) Over head electricity wiring

LVOHP Low Voltage Over head Powerlines

HVOHP High Voltage Over head Powerlines

ABC Aerial Bundled Cable

Appendix B - Tree Protection & Management

Tree Protection & Management Prior to & During Construction

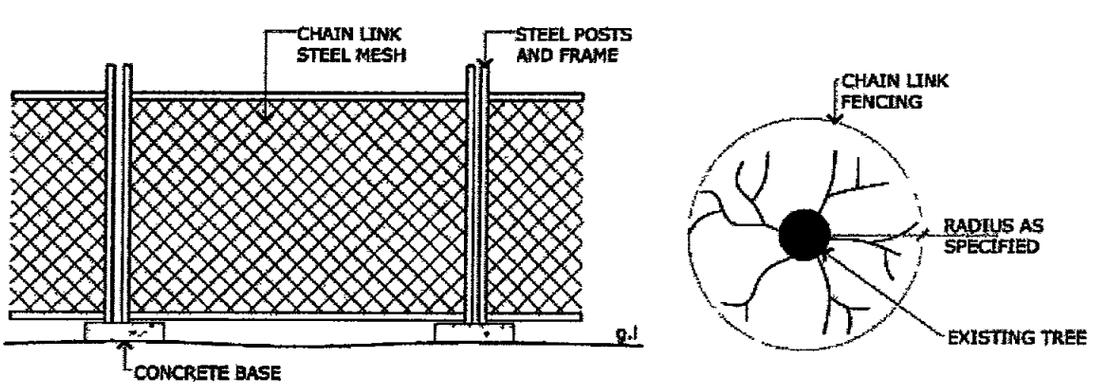
The installation of Tree Protection Zone (TPZ) fencing is to be carried out prior to commencement of all works The most suitable fencing material is 1 8m tall chain link mesh with 50mm metal pole supports, see **detail 1: tree protection fencing**

Trunk protection "Tree Guards" are detailed (below) by generic diagram

A mulch layer of composted leaf & woodchip to a depth of 75mm is required within the TPZ to aid in retention of soil moisture & to protect soil from contaminants Water is to be applied by handheld or soaker/leaky hose within TPZ as required & in Accordance with Stage 3 Water Restrictions Watering is to be carried out by either an Arborist or is to form part of the Builder's/Contractor's contract, with recommended fortnightly checks by an Arborist

There is to be no stock piling of building material (including waste), machinery or any other item within the TPZ of any retained tree Access to personnel, machinery, & storage of fuel, chemicals, cement or site sheds is prohibited

Regular monitoring of protected trees during development works for unforeseen changes or decline, will aid in the success & longevity of the retained trees



detail 1: tree protection fencing
not to scale

(Diagram is generic & is for illustrative purpose only)

Appendix C - Post-Construction Planting & Management

Tree preservation requires a long-term commitment to monitoring & rectifying problems associated with trees

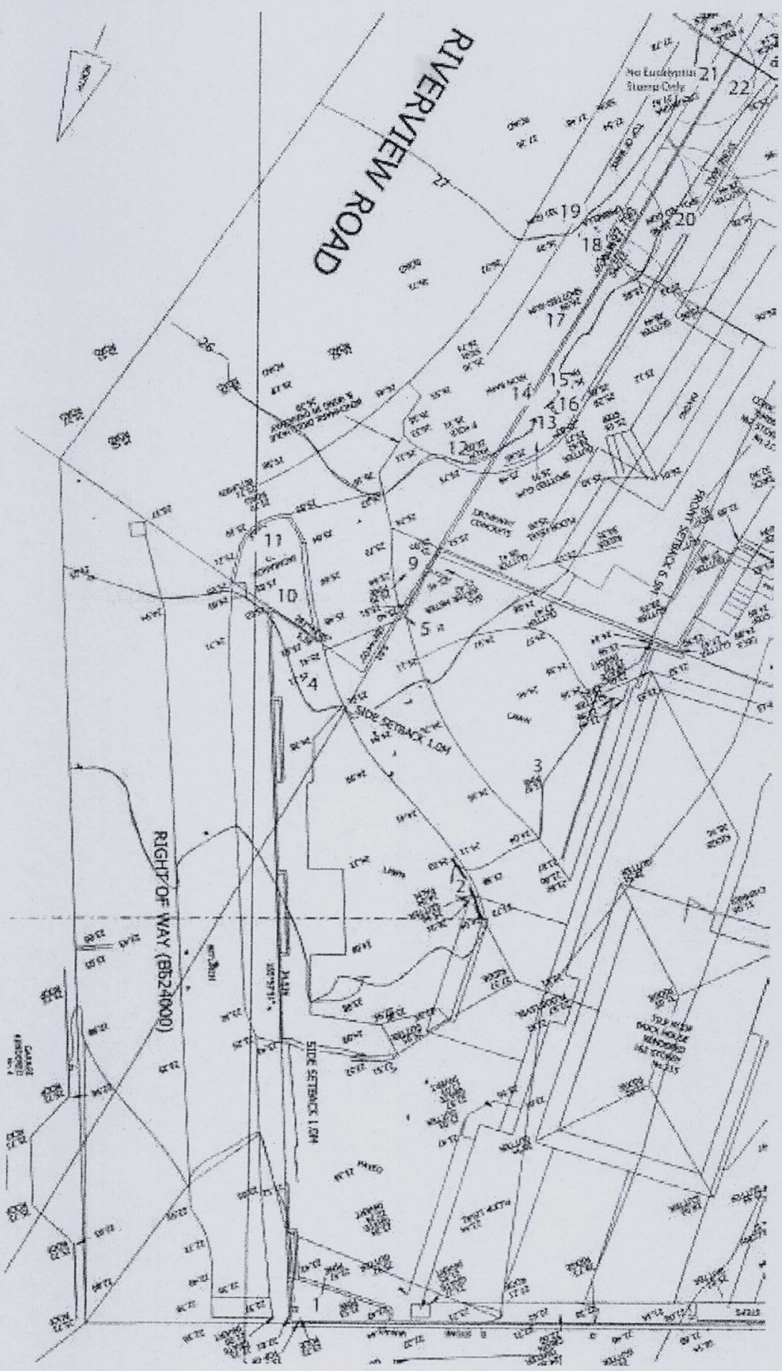
Some recommendations for care of trees after construction are

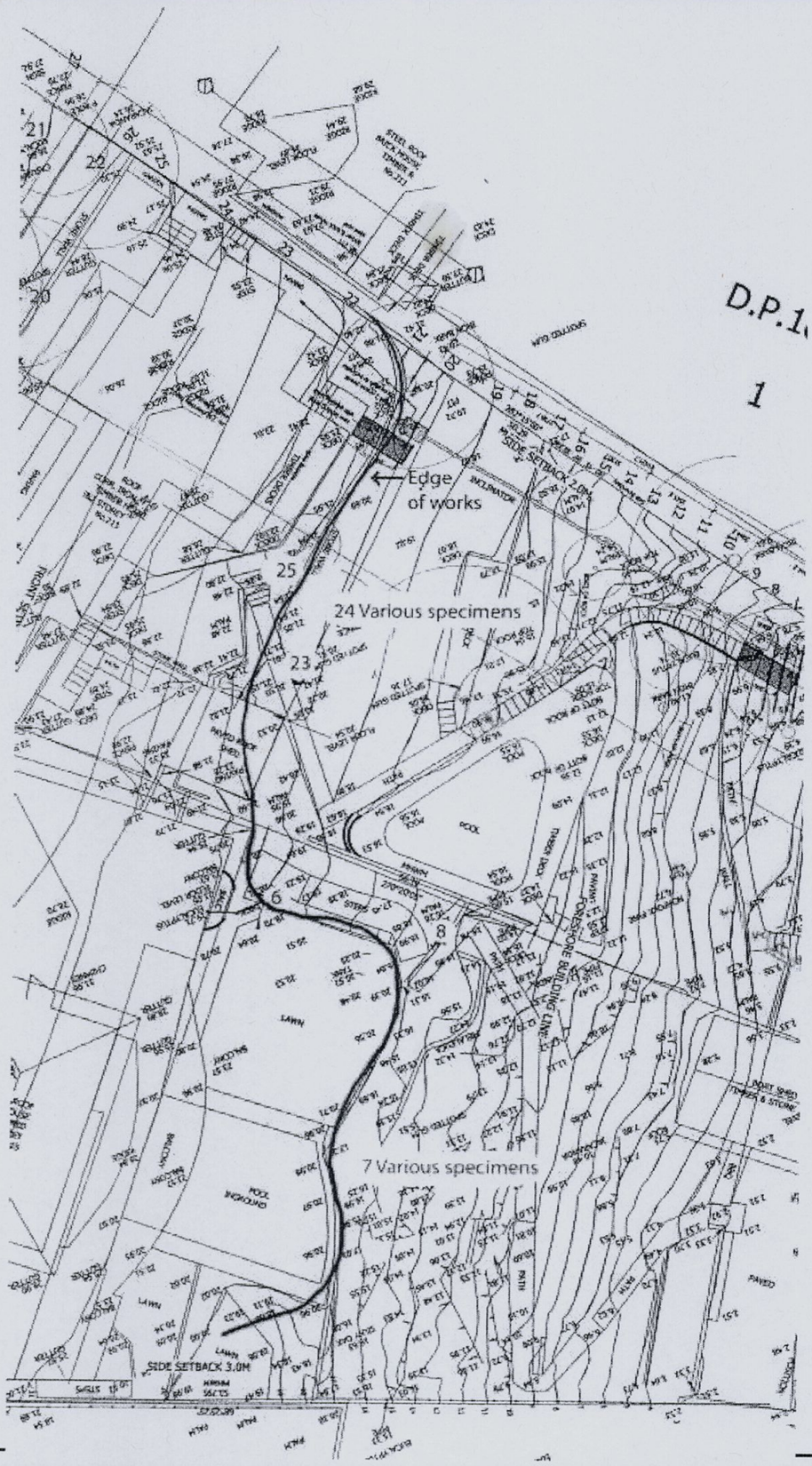
- Mulching – removal of mulch after construction to remove any contaminants Replacement with a good quality mulch & addition of 10% organic matter will improve beneficial soil micro-organisms, retain moisture & improve aeration & water infiltration
- Pruning – Removal of deadwood from trees to be retained is recommended for hazard abatement when the TPZ fencing is removed at the end of the project

  A minimum amount of live material should be removed from trees so they have maximum photosynthetic ability to develop new roots to adapt to new conditions All pruning work should be carried out by a qualified Arborist & be in accordance with the *Australian Standard for Pruning of Amenity Trees*, AS4373 1996
- Irrigation – An Arborist should determine whether irrigation is required during extended periods of drought Design & installation to be by a licensed specialist
- Pest management – Monitoring is required as trees under stress are more open to insect attack Infestations to be treated as required
- Hazard Management – Monitoring of the trees & re-assessment is required for adequate long-term safety & will require observation & treatment if they are to remain an asset to the development & the community

Appendix D – Survey

The following excerpt is from Survey, dated 08/05/2007, prepared by Paul Keen & Company, provided by ? of Casey Brown Architecture. The Excerpt is for illustrative purposes only & is not to scale.




D.P.1
1
Edge of works
24 Various specimens
7 Various specimens
SIDE SETBACK 3.0M

COUNCIL COPY

Tony Raco

From Tom Monahan [tom@caseybrown com au]
Sent Wednesday 13 February 2008 12 49 PM
To Tony Raco
Subject 213-215 Riverview Road CC Phase II Foundations

Dear Tony

Per your request I have the following additional information to finalise our CC phase II

1 The pond located near the entry will be less than 300mm deep
2 The swimming pools will have a swimming Pool act and AS 1926 1 compliant pool fence and gates as noted on the attached plan
3 Rooms without windows shall be mechanically ventilated in accordance with BCA clause 3, 8 5 0 provisions
4 A copy of our Quick Check Sydney Water receipt plan approval is attached

Many thanks

Tom Monahan

Tom Monahan I Casey Brown Architecture
T 02 9360 7977 I F 02 9360 2123
Level 1 I 63 William Street I East Sydney NSW 2010
E tom@caseybrown com au I W www caseybrown com au

This email and any attachments may contain personal information or information that is confidential or subject to copyright Any use disclosure or copying of any part of it is prohibited If this email is received by mistake please notify this office by returning and deleting the email Casey Brown Architecture does not warrant that this email or any attachments are free from viruses or defects Please check any attachments for viruses and defects before opening them

This is the plan/s referred to in Essential Certifier's Certificate No

08/00439

Officer T Raco
Accreditation No BPB0336

Plan # 5201

213-215 Avalon Rd, Avalon

Pool fence location

This is the plan/spec referred to in Essential Certifier's Certificate No.

08/00439

Officer T Raco
Accreditation No BPB0336

Plan # S202

Outline Specification for
213-215 Riverview Road,
Avalon
Casey Brown Architecture

Issue **A** 26 11 07

Generally
All work shall be in accordance with the BCA and the relevant Australian Standards
The Builder shall comply with Councils conditions of consent listed in the DA approval
All works to be carried out to be in compliance with the construction certificate, Meudon Pty Ltd renovation code and deed between John Baker and Meudon Pty Ltd
The builder shall obtain Water Board approval, give all notices, pay all fees and comply with the requirements of all authorities having jurisdiction over the works

Insurances
Contractor to obtain before commencing work and provide under evidence of the following insurances Home owners warranty insurance, Workers compensation insurance, Public liability insurance for not less than $10 million in joint names of John Baker and Meudon Pty Ltd

Demolition & Site Works
Shall be in accordance with AS 2601
Prepare dilapidation reports with extensive photo records of the two units below

Concrete
Shall be in accordance with AS3600 and the engineer's specifications and drawings

Termite Barrier
Provide a non-toxic continuous top up termite barrier system in accordance with AS1694 & AS2057

Block & Brickwork
Shall be in accordance with AS3700 & AS2733 and the engineer's drawings and specifications Provide all necessary flashing and weepholes to make the building watertight

Metalwork
Shall be in accordance with AS1250 & AS4100

Hydraulics
All plumbing and drainage work shall comply with AS 3500, the approved DA hydraulic drawings, BASIX certificate and the engineer's drawings and specs

Carpentry and Joinery
All framing shall comply with AS1684

Sarking and Insulation
Insulate roofs and walls as required by the BASIX certificate Sark all roofs and walls

Roofing Drainage & Plumbing
Shall be in accordance with AS1170, AS1562 and the manufacturer's written instructions
Roof - Custom orb colourbond 'windspay'

Electrical
Shall be in accordance with SAA wiring rules
Note light fittings to comply with BASIC cert

Timber
Shall comply with AS1684 and the engineer's drawings and specifications

Glazing
Shall be in accordance with AS1288 Low e and double glazed as required by BASIX cert

Applied finishes
Timber Floors – 12mm hardwood boards glued over 25mm ply tongue oil finish
Tiling shall comply with AS 3958 1

Sheeting
Plasterboard walls – 10mm,ceilings 13mm installed to manufacturers written
Wet area sheeting and waterproofing shall be in accordance with AS 3740

Painting
Rendered brick - Dulux Weathersheild colour to match existing building
Internal walls – Dulux Wash & Wear 101 low sheen
PB Ceiling – Dulux flat ceiling paint
Skirts, doors & jambs – Dulux oil enamel gloss
Windows – Dulux Weathersheild semigloss, colour

Windows/Doors
Timber with paint finish to match existing

Skylights
Skylights - VS-0075-304 ventilating skylight with PDE-190 manual Venetian blind and rod

This is the plan/spec referred to in Essential Certifier's Certificate No
08/00439
Officer : T Raco
Accreditation No BPB0336

DIRECTORS
Stewart McGeady Rick Wray

DILAPIDATION REPORT
AT
2 CABARITA ROAD, CLAREVILLE

Job No. 070954

IN RESPECT OF
PROJECT DEVELOPMENT
AT
213-215 RIVERVIEW ROAD, CLAREVILLE

Prepared by Northern Beaches Consulting Engineers Pty Ltd
OCTOBER 2007

Northern Beaches Consulting Engineers Pty Ltd Structural, Civil & Stormwater Engineers ACN 076 121 616 ABN 24 076 121 616
Suite 207, 30 Fisher Road Dee Why, NSW 2099 Tel 9984 7000 Fax 9984 7444 Email nb@nbconsulting.com.au

INTRODUCTION

This Dilapidation Report details the property at 2 Cabarita Road, Clareville in its present condition.

The report will consist of a brief description of the subject building and a photographic survey of the visible structural defects, such as cracking to the brickwork and concrete.

This non-invasive survey was conducted on the 19th October 2007.

PROPERTY DESCRIPTION

The property consists of a rendered brick residence, garage with attached flat, rendered brick carport, brick tool store, greenhouse, tennis court and in ground pool. The property is accessed via a private road off Cabarita Road.

REPORT DESCRIPTION

For the purpose of this report the garage, tool store, greenhouse and tennis court areas were inspected. The main residence was deemed to be far enough from the subject property as not to require surveying. Areas found to be defective are detailed in the following photographs.

SITE PLAN (PART)

NOT TO SCALE

(DIAGRAMATICAL ONLY)



PHOTO 1: Bathroom tiles in garage flat in good condition.



PHOTO 2: General view garage flat in good condition.



PHOTO 3: Typical cracking across pathway.



PHOTO 4: General view roof areas in good condition.



PHOTO 5: General view tool store in good condition.

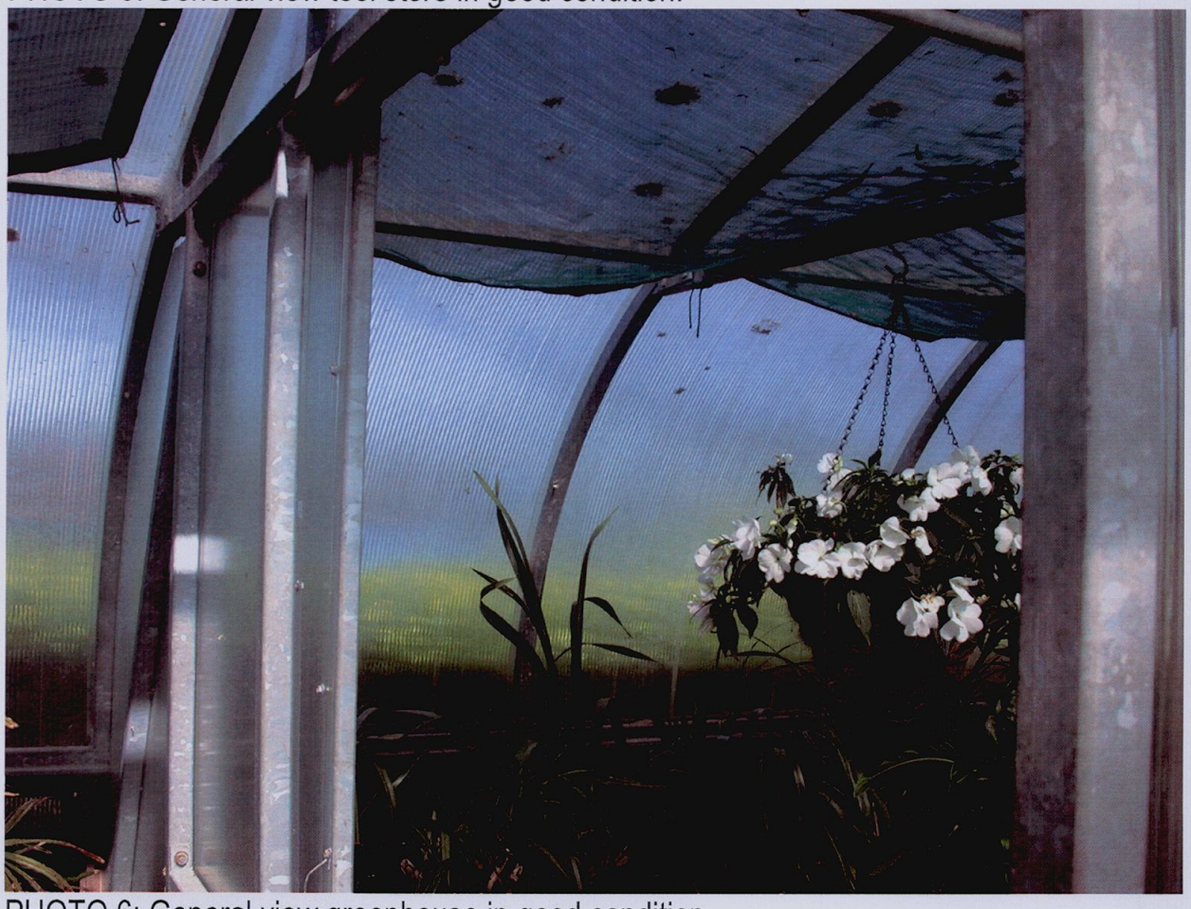


PHOTO 6: General view greenhouse in good condition.



PHOTO 7: General view stone pathway.



PHOTO 8: General view garage in good condition.



PHOTO 9: Cracks in garage slab.



PHOTO 10: General view rear of garage / flat in good condition.



PHOTO 11: Tennis court retaining wall viewed from above, in good condition.



PHOTO 12: Store at rear of garage in good condition.



PHOTO 13: Stone path at side of garage in good condition.

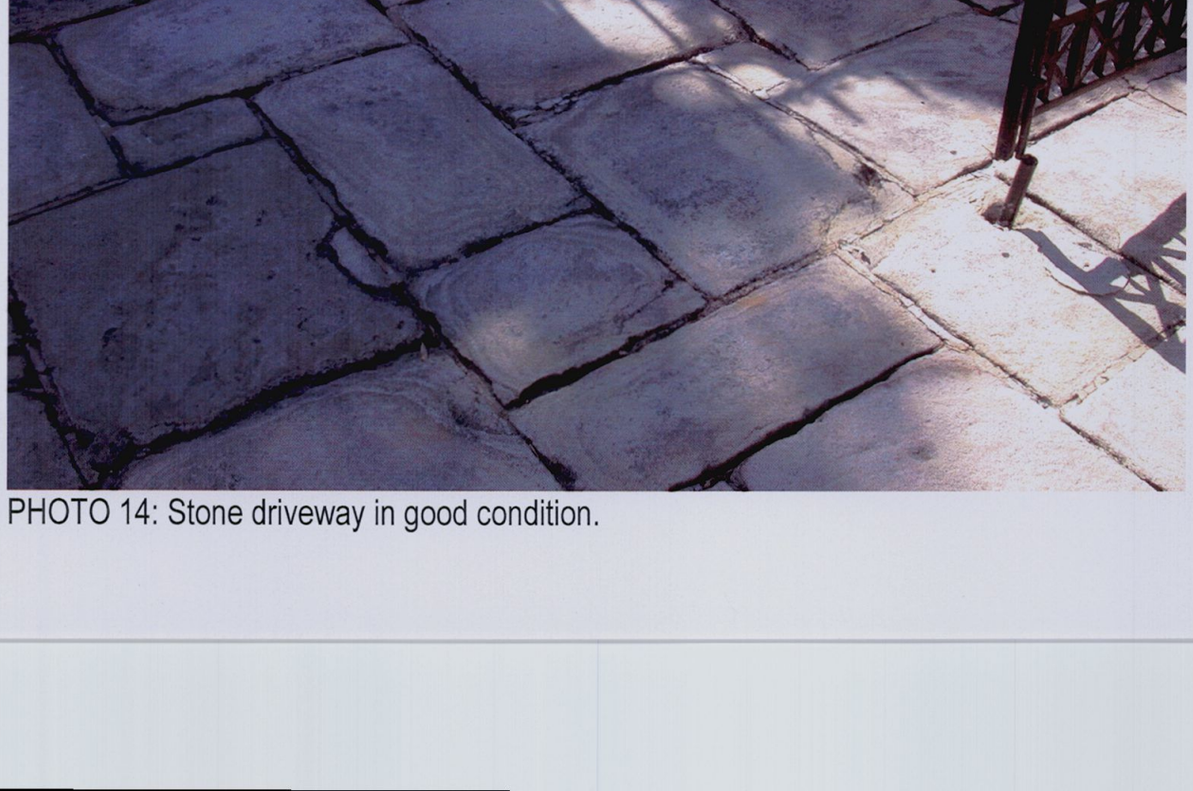


PHOTO 14: Stone driveway in good condition.



PHOTO 15: General view carport in good condition.

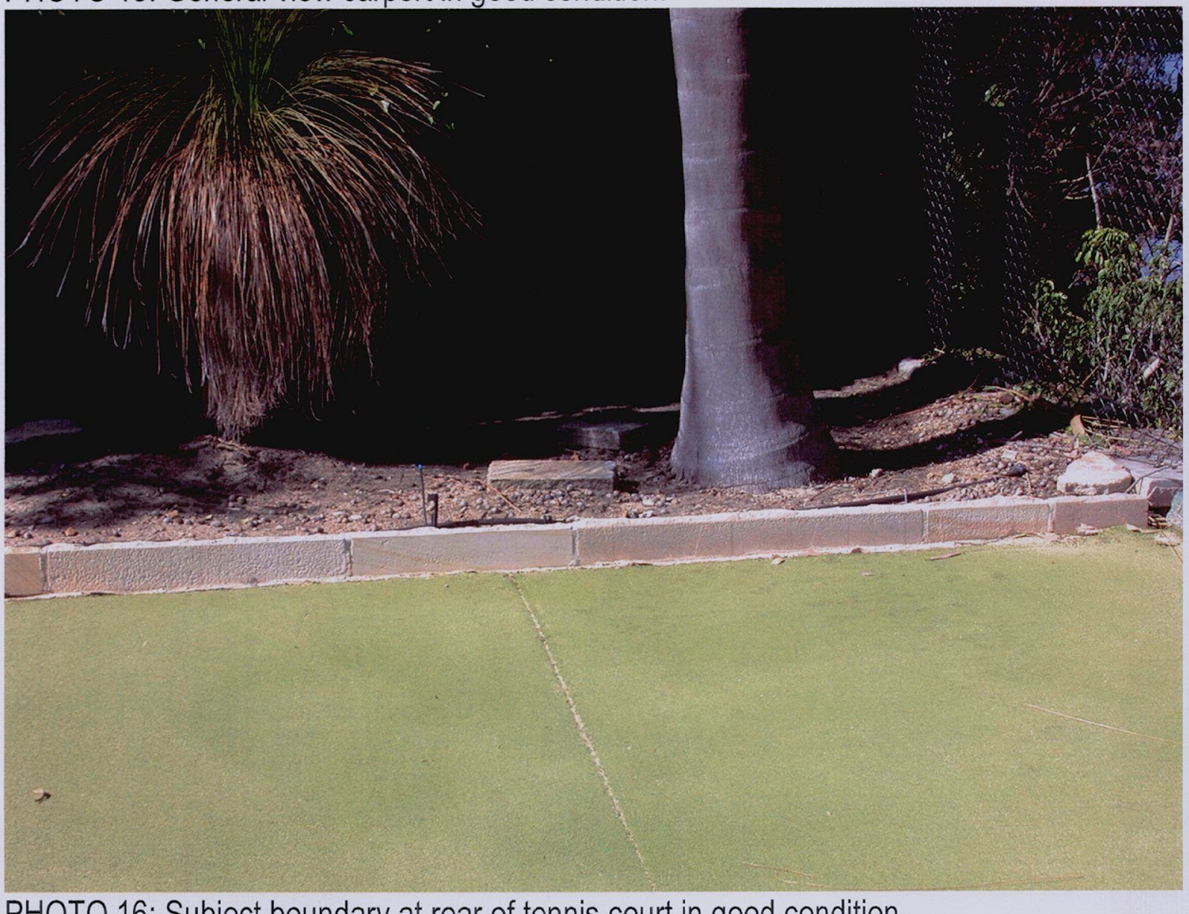


PHOTO 16: Subject boundary at rear of tennis court in good condition.



PHOTO 17: Typical hairline cracks to tennis court stone edging.



PHOTO 18: Crack through base of stone block and mortar joint.



PHOTO 19: General view boundary stone retaining wall in good condition.



PHOTO 20: As above.



PHOTO 21: General view stone retaining wall in good condition (note areas of exposed rock).



PHOTO 22: As above.

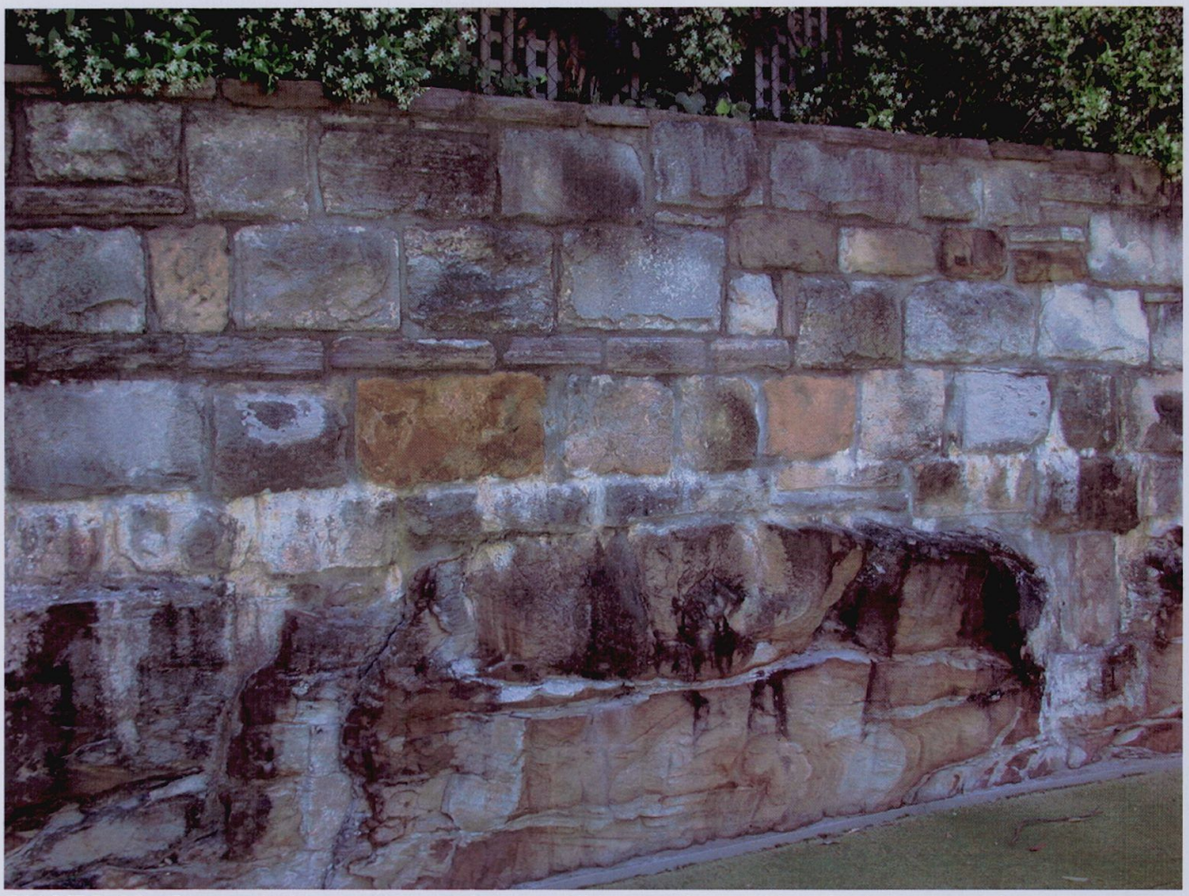


PHOTO 23: General view stone retaining wall in good condition (note areas of exposed rock).



PHOTO 24: Tennis court in good condition.



PHOTO 25: General view stone retaining wall and tennis court in good condition.



PHOTO 26: Stone garden wall in good condition.



PHOTO 27: Stone garden wall in good condition.



PHOTO 28: Tennis court in good condition.



PHOTO 29: Tennis court suspended slab in good condition.

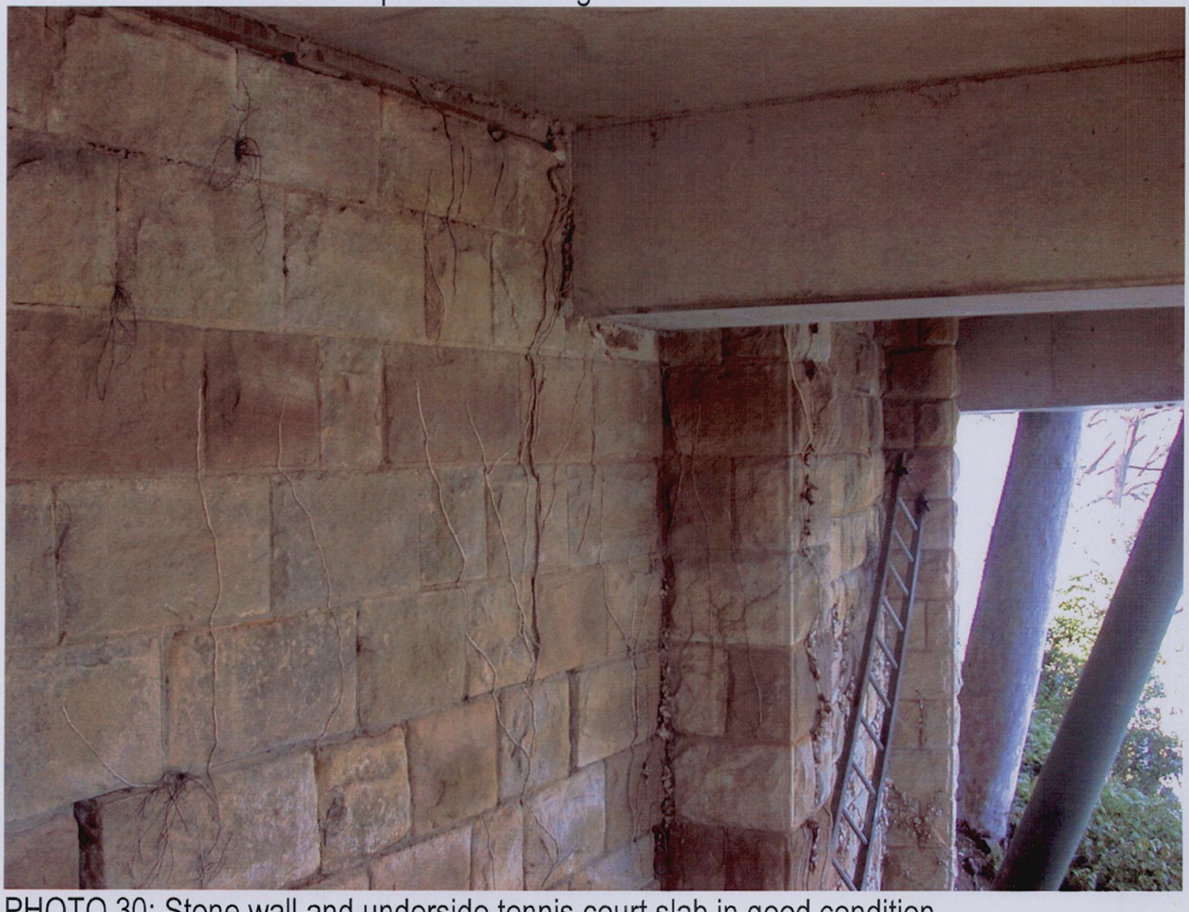


PHOTO 30: Stone wall and underside tennis court slab in good condition.



PHOTO 31: Area under tennis court slab in good condition.

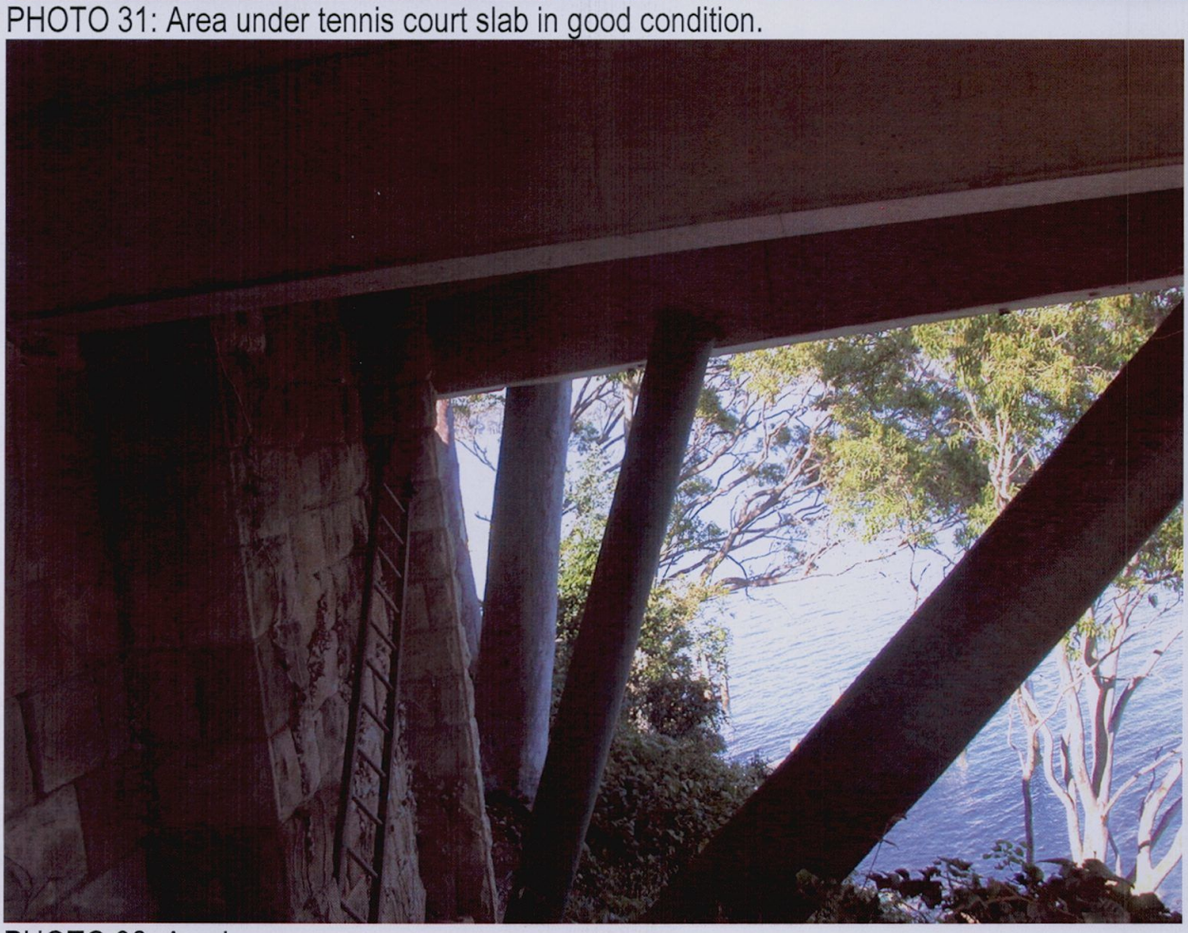


PHOTO 32: As above.



PHOTO 33: Edge beam of tennis court slab in good condition.



PHOTO 34: Tennis court stone support wall in good condition.



PHOTO 35: Tennis court stone support wall in good condition.



PHOTO 36: As above.



PHOTO 37: Underside tennis court slab in good condition.



PHOTO 38: Entry pillars in good condition.



PHOTO 39: Entry pillars in good condition.



PHOTO 40: Typical cracking to private roadway.



PHOTO 41: Stone pillars at entry to private road in good condition.



PHOTO 42: Cracking to roadway of private road.

DIRECTORS
Stewart McGeady Rick Wray

DILAPIDATION REPORT
AT
211 RIVERVIEW ROAD, CLAREVILLE

Job No. 070954

IN RESPECT OF
PROJECT DEVELOPMENT
AT
213-215 RIVERVIEW ROAD, CLAREVILLE

Prepared by Northern Beaches Consulting Engineers Pty Ltd
OCTOBER 2007

Northern Beaches Consulting Engineers Pty Ltd Structural, Civil & Stormwater Engineers ACN 076 121 616 ABN 24 076 121 616
Suite 207, 30 Fisher Road Dee Why, NSW 2099 Tel 9984 7000 Fax 9984 7444 Email nb@nbconsulting.com.au

INTRODUCTION

This Dilapidation Report details the property at 211 Riverview Road, Clareville in its present condition.

The report will consist of a brief description of the subject building and a photographic survey of the visible structural defects, such as cracking to the brickwork and concrete.

This non-invasive survey was conducted on the 8th October 2007.

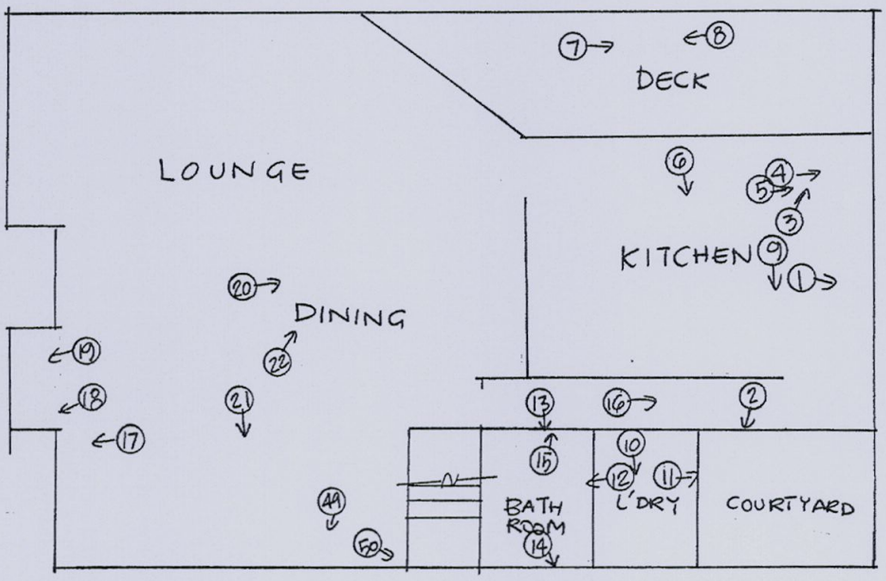
PROPERTY DESCRIPTION

The property consists of a brick / timber clad 2-storey residence. The site slopes steeply away from the road down to Pittwater. There is a carport at the top off Riverview Road.

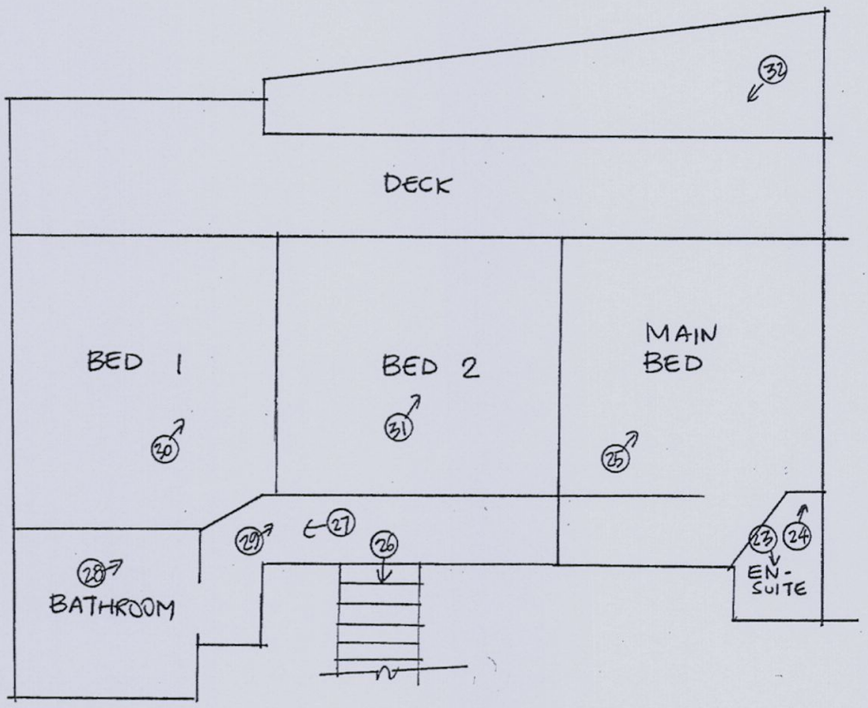
REPORT DESCRIPTION

For the purpose of this report the internal and external areas of the property were inspected. This included the surrounding paths, deck and carport. Areas found to be defective are detailed in the following photographs.

APPROX. NORTH

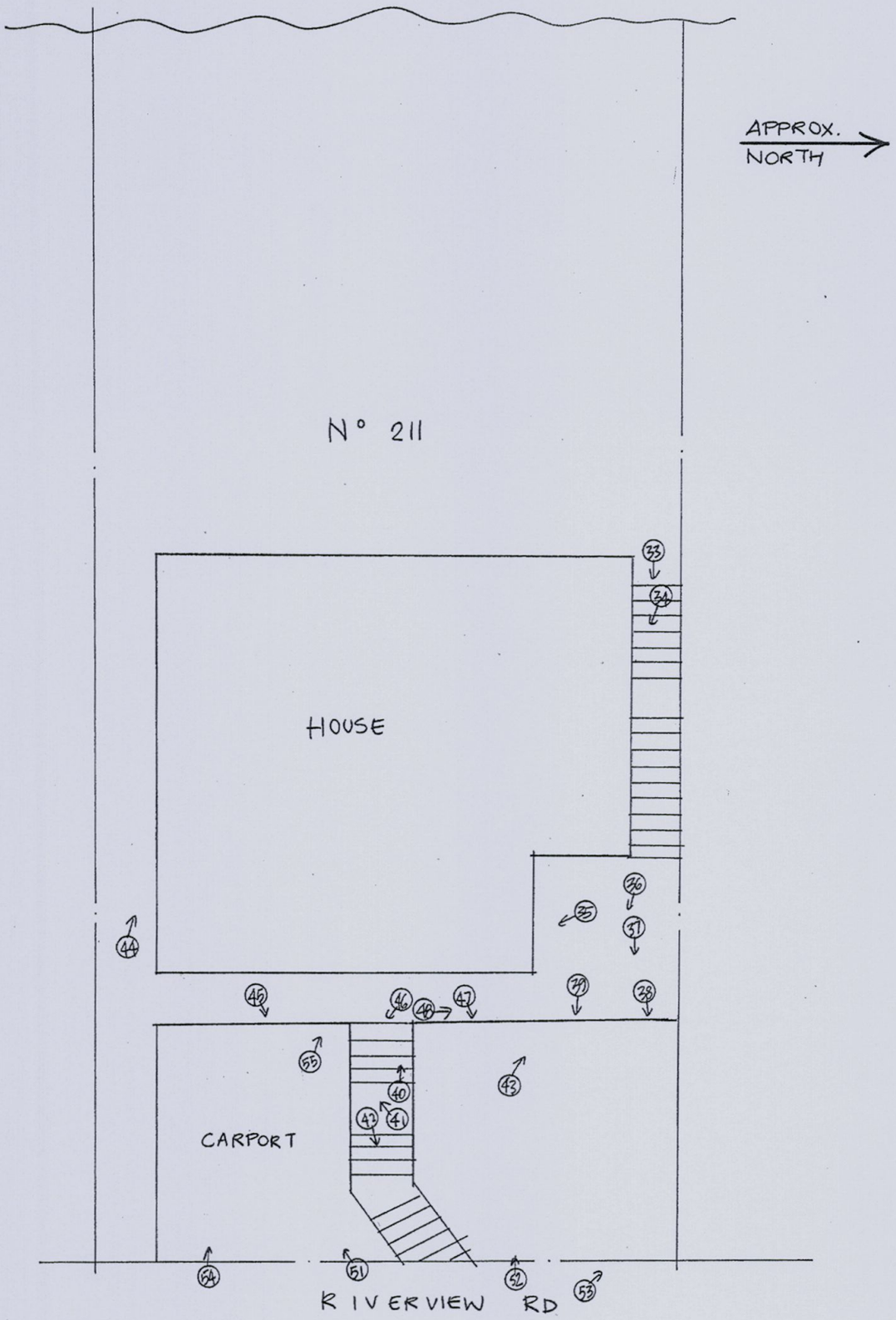


UPPER FLOOR PLAN



LOWER FLOOR PLAN

NOT TO SCALE
(DIAGRAMATICAL ONLY)



SITE PLAN

NOT TO SCALE
(DIAGRAMATICAL ONLY)



PHOTO 1: Previously patched horizontal crack between windows.

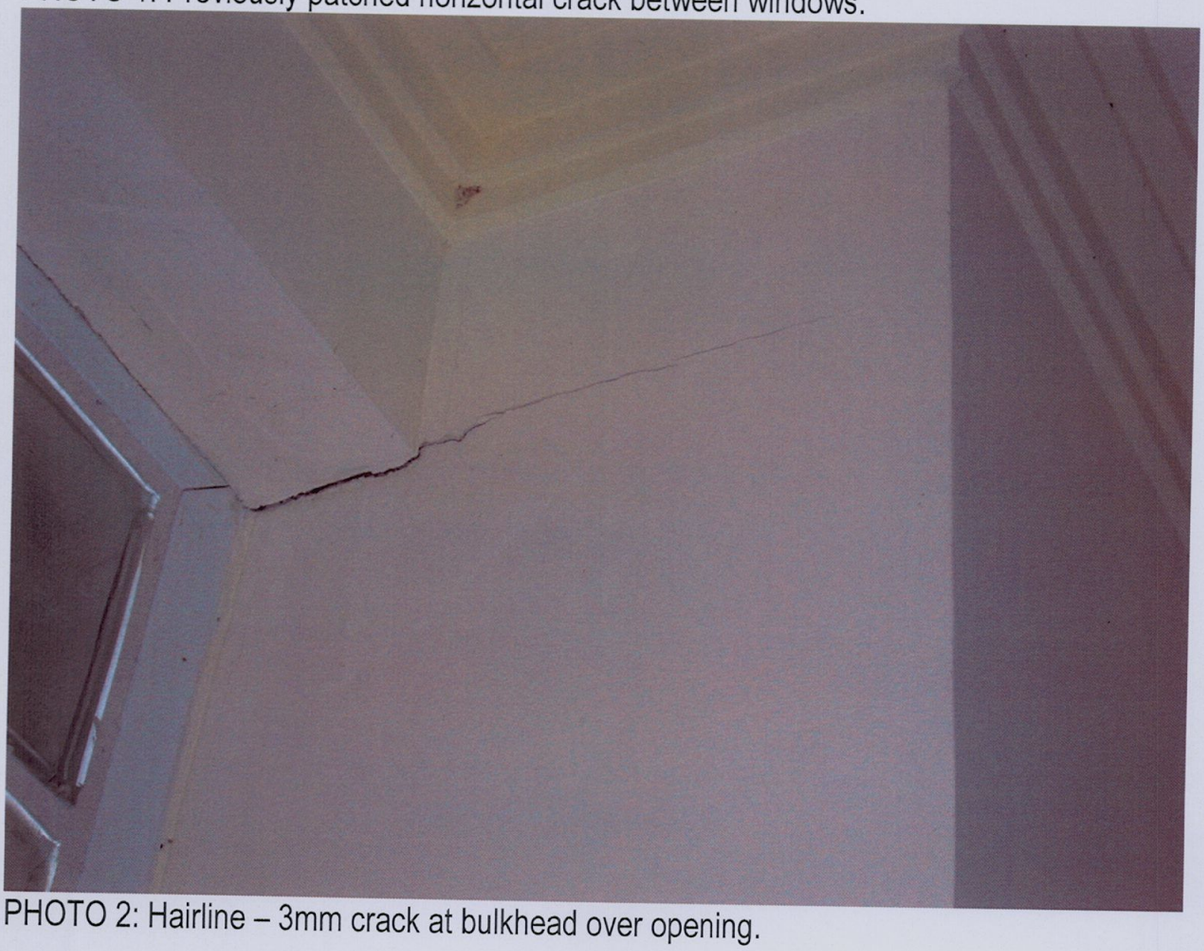


PHOTO 2: Hairline – 3mm crack at bulkhead over opening.



PHOTO 3: Hairline crack through and along cornice.

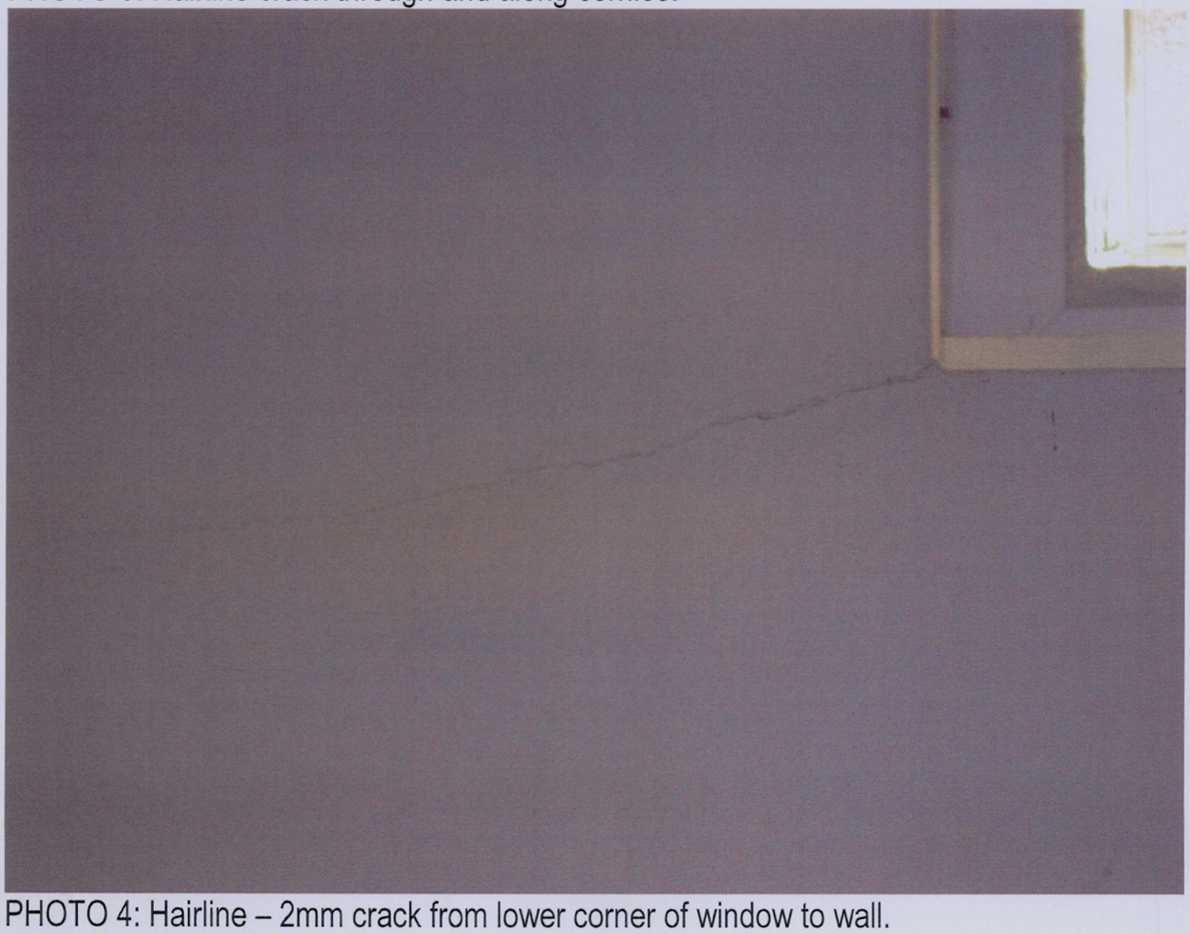


PHOTO 4: Hairline – 2mm crack from lower corner of window to wall.



PHOTO 5: Vertical hairline crack from upper corner of window.



PHOTO 6: General view kitchen in good condition.



PHOTO 7: Tiled deck in good condition.



PHOTO 8: General view from upper deck, in good condition.



PHOTO 9: Kitchen floor tiles in good condition.



PHOTO 10: General view laundry in good condition.



PHOTO 11: Hairline vertical crack from base of window to floor.

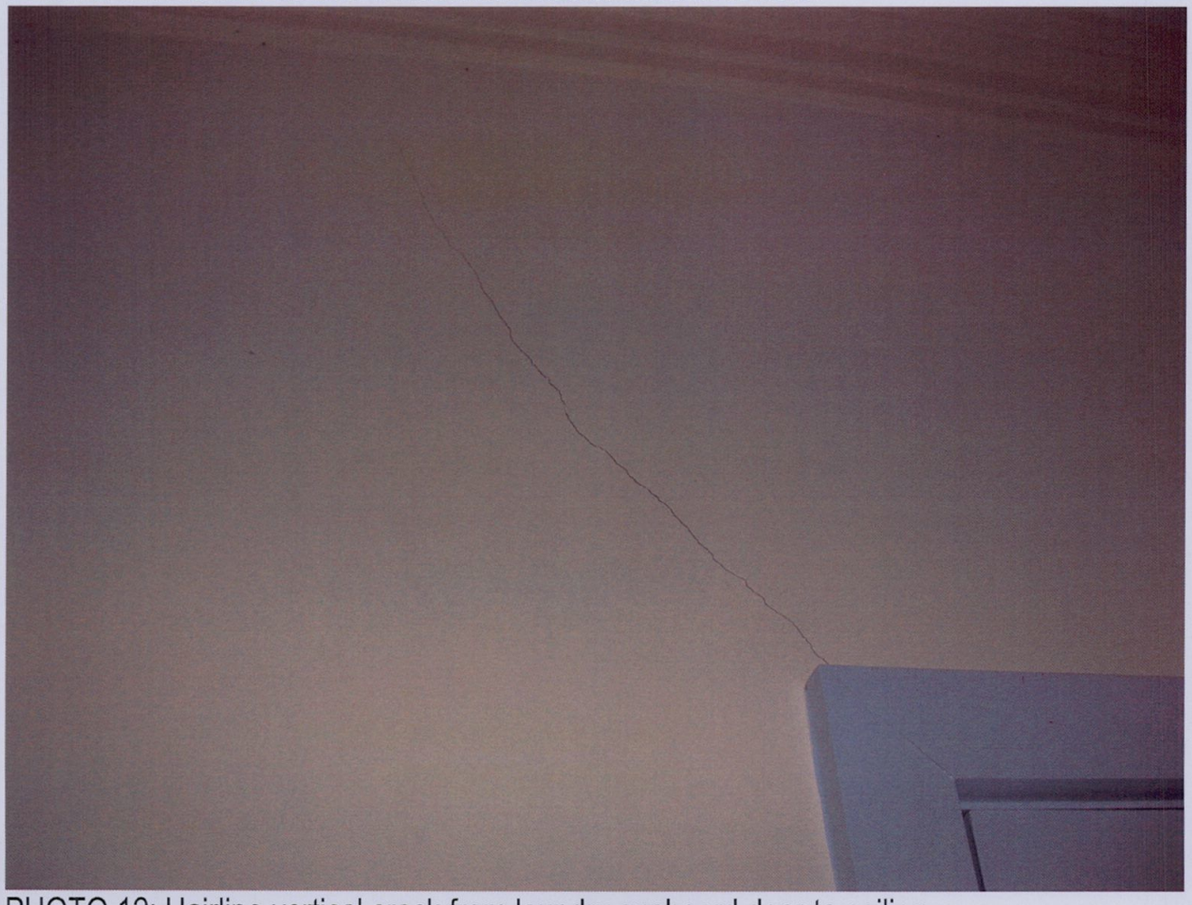


PHOTO 12: Hairline vertical crack from laundry cupboard door to ceiling.



PHOTO 13: Multiple hairline cracks around bathroom door.

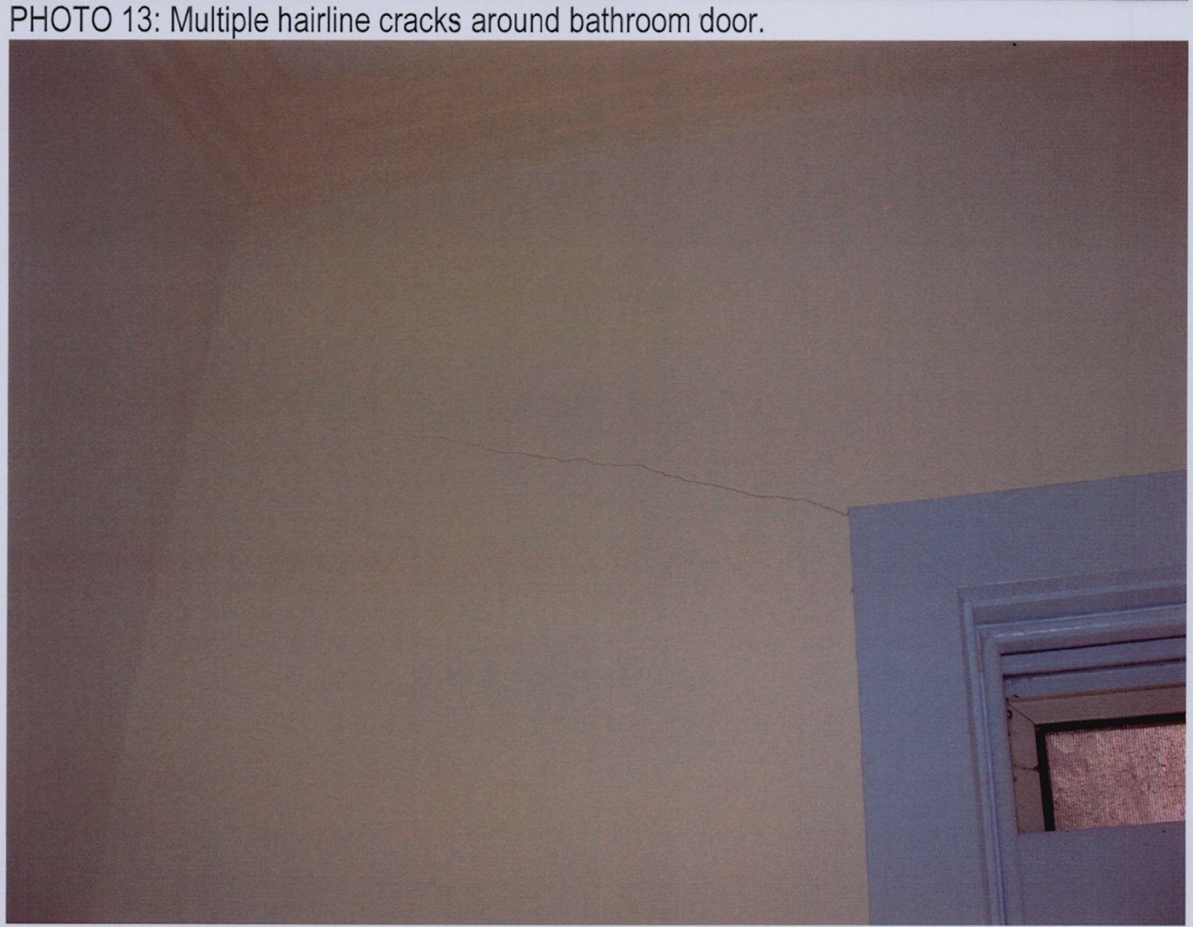


PHOTO 14: Diagonal hairline crack approx. 300mm long from top of window.

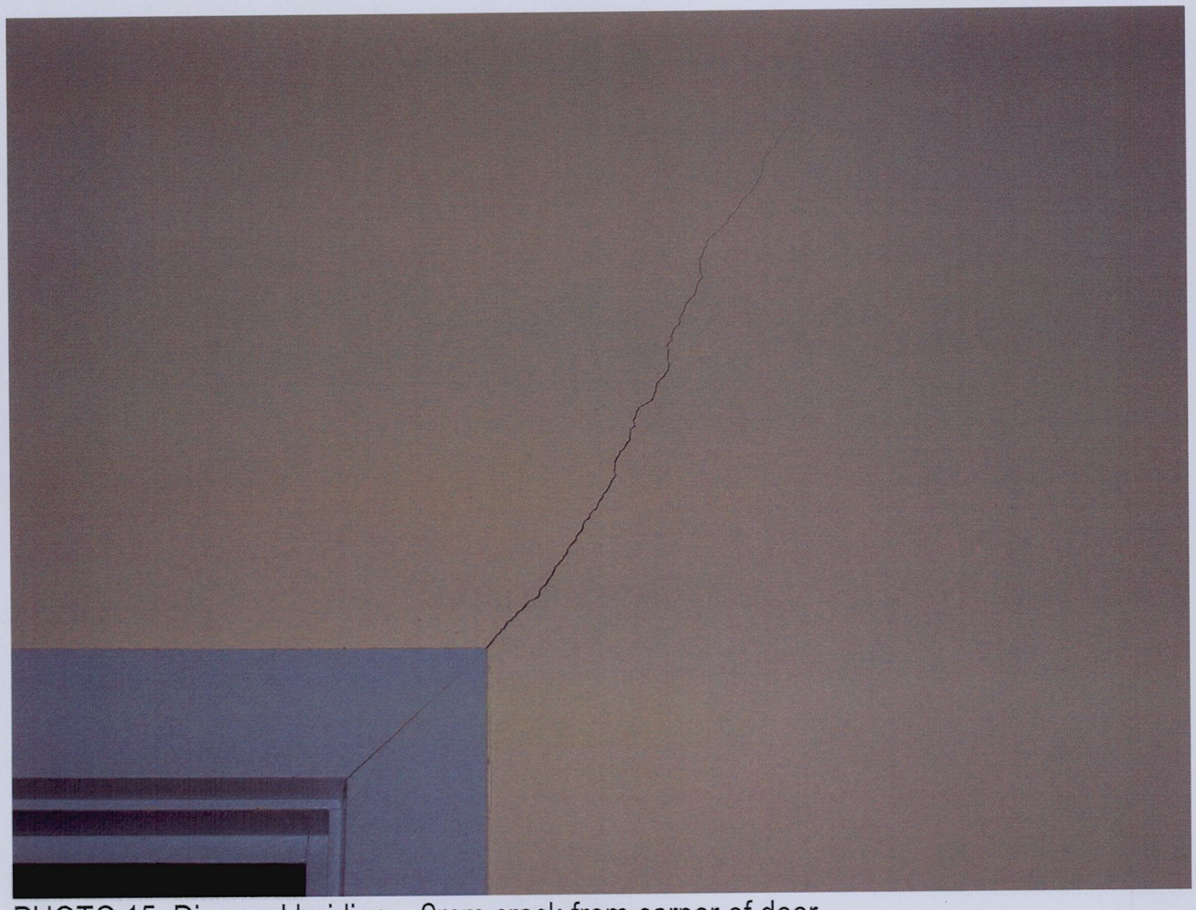


PHOTO 15: Diagonal hairline – 2mm crack from corner of door.



PHOTO 16: Hallway floor tiles in good condition.



PHOTO 17: Hairline vertical crack down length of wall.



PHOTO 18: Multiple hairline cracks in wall.

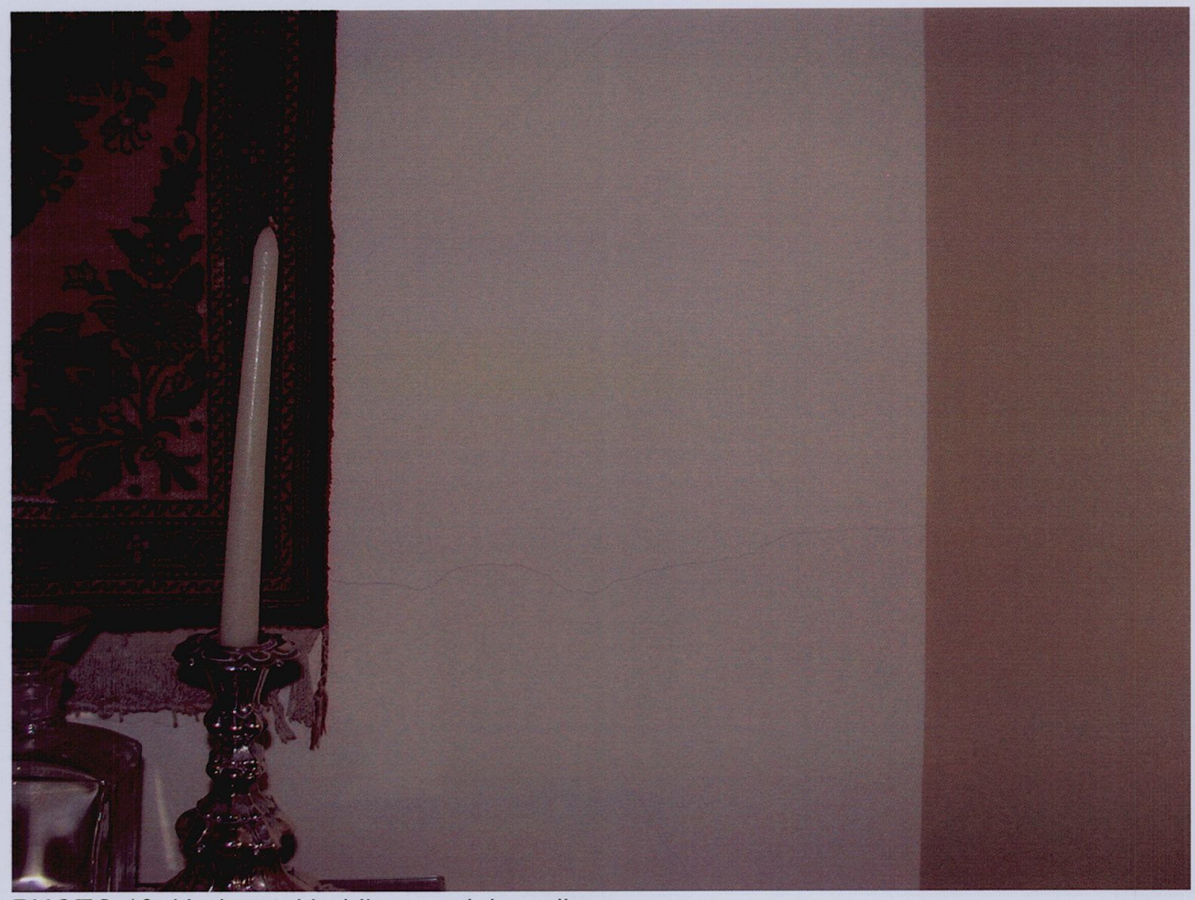


PHOTO 19: Horizontal hairline crack in wall.



PHOTO 20: General view dining area in good condition.



PHOTO 21: Entry area floor tiles in good condition.



PHOTO 22: Lounge area in good condition.



PHOTO 23: Ensuite in good condition.

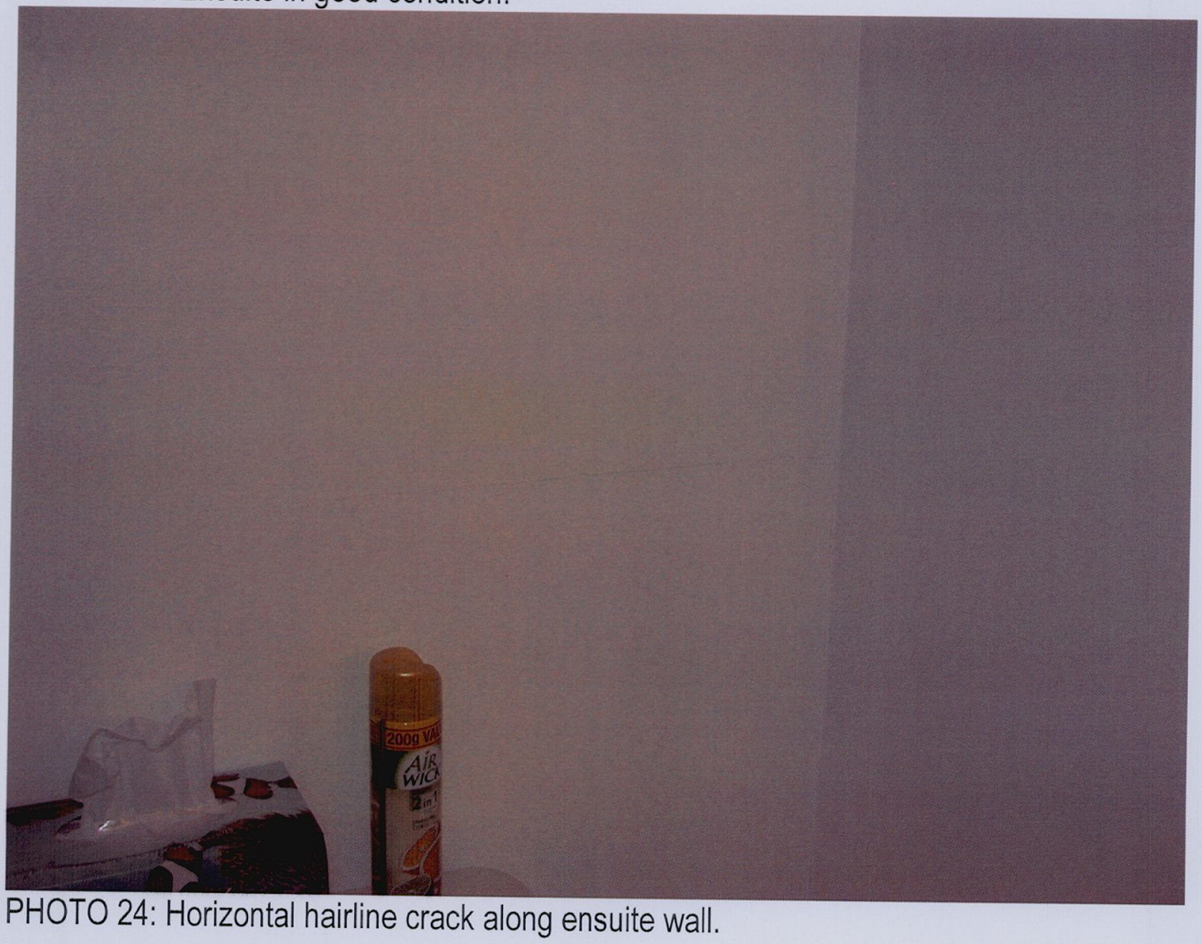


PHOTO 24: Horizontal hairline crack along ensuite wall.



PHOTO 25: General view main bed in good condition.



PHOTO 26: Tiled stairway in good condition.



PHOTO 27: Lower level hallway in good condition.



PHOTO 28: Lower level bathroom in good condition.

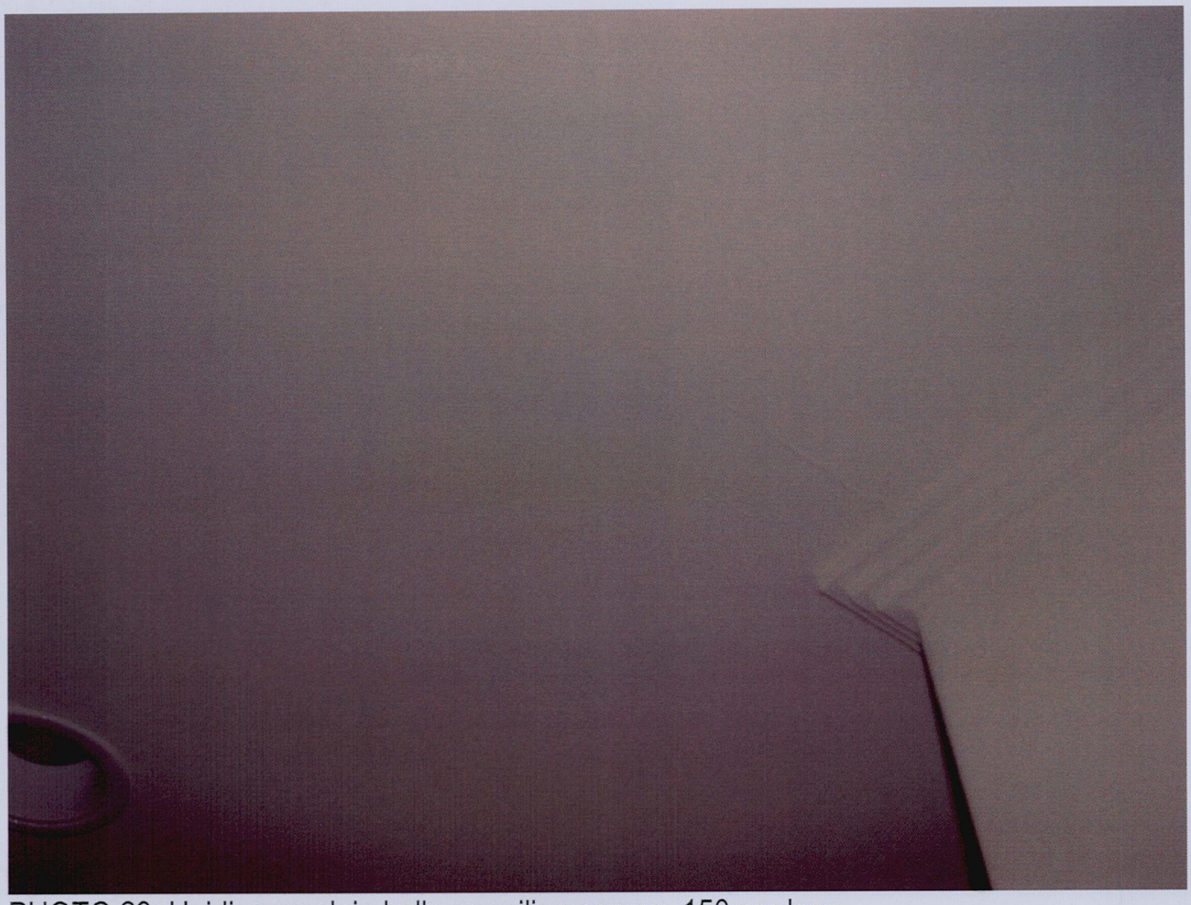


PHOTO 29: Hairline crack in hallway ceiling approx. 150mm long.



PHOTO 30: General view Bed 1 in good condition.



PHOTO 31: General view Bed 2 in good condition.

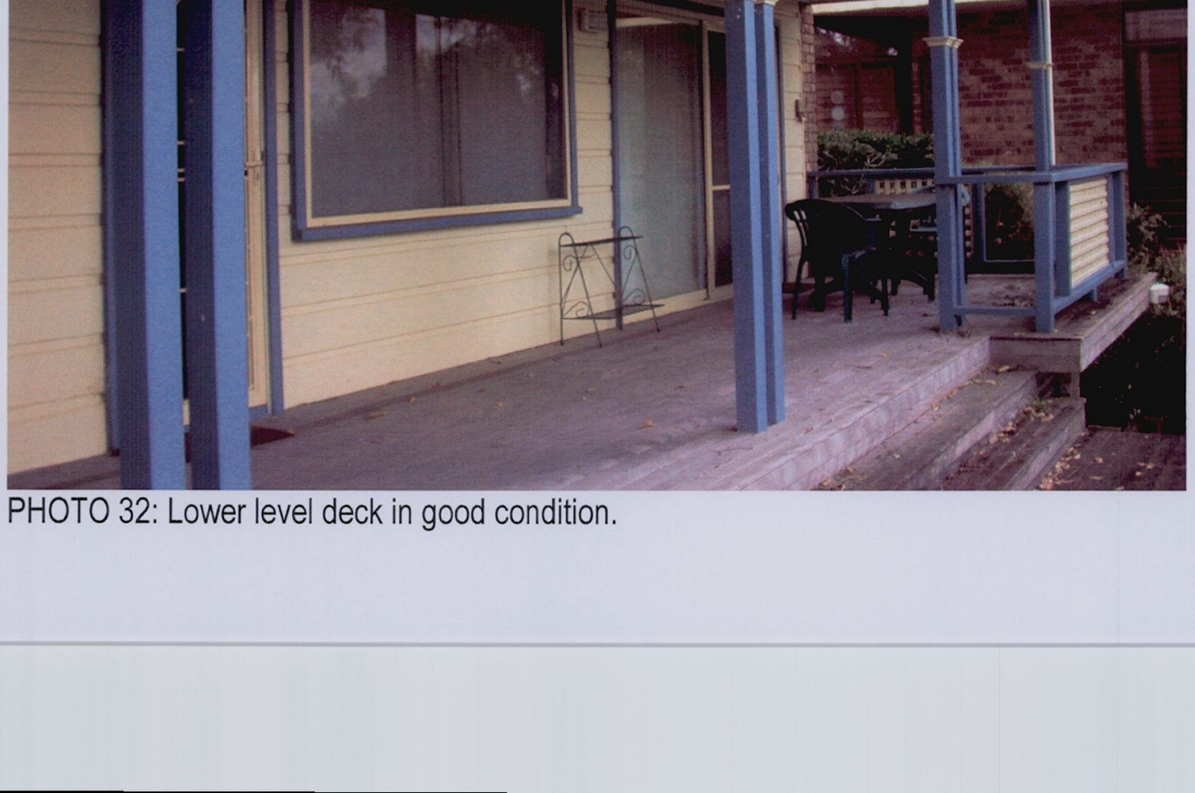


PHOTO 32: Lower level deck in good condition.



PHOTO 33: North side stairs in good condition.



PHOTO 34: General view north elevation in good condition.



PHOTO 35: Courtyard external walls in good condition.



PHOTO 36: Differential displacement of courtyard pavers.



PHOTO 37: Stepped crack in courtyard retaining wall.



PHOTO 38: As above.



PHOTO 39: Stepped crack in courtyard retaining wall.



PHOTO 40: General view roof and west elevation in good condition.



PHOTO 41: Area under carport in good condition.



PHOTO 42: Entry stairs in good condition.



PHOTO 43: General view courtyard in good condition.



PHOTO 44: General view south elevation in good condition.



PHOTO 45: Hairline – 3mm crack in garden retaining wall.



PHOTO 46: Area under carport in good condition.



PHOTO 47: Garden retaining wall cracked and leaning.



PHOTO 48: Garden retaining wall leaning.



PHOTO 49: Hairline crack in entry tiles.



PHOTO 50: As above.



PHOTO 51: Carport in good condition.



PHOTO 52: Separation between timber fence post and panels.



PHOTO 53: Timber fence in good condition.



PHOTO 54: Carport pavers in good condition.



PHOTO 55: Roof in good condition.

DIRECTORS
Stewart McGeady Rick Wray

DILAPIDATION REPORT
OF
COUNCIL ASSETS
AT
213-215 RIVERVIEW ROAD, CLAREVILLE

Job No. 070954

IN RESPECT OF
PROJECT DEVELOPMENT
AT
213-215 RIVERVIEW ROAD, CLAREVILLE

Prepared by Northern Beaches Consulting Engineers Pty Ltd
OCTOBER 2007

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GENERAL DESCRIPTION

This dilapidation report details the council assets surrounding the proposed development at 213-215 Riverview Road, Clareville.

The council assets covered in this report include the roadway and nature strip at the front of the property. There is no kerb and gutter on either side of Riverview Road.

The non-invasive photographic survey was undertaken on the 8th October 2007.

Areas found to be defective are covered in the following photographs.



SITE PLAN

NOT TO SCALE
(DIAGRAMATICAL ONLY)



PHOTO 1: General view looking north along Riverview Rd, areas patched, some cracking.



PHOTO 2: Cracks and previously patched sunken area of roadway.



PHOTO 3: General view looking north along Riverview Road.



PHOTO 4: Cracks along edge of roadway.



PHOTO 5: Cracked and damaged area at entrance to No.213.



PHOTO 6: Cracked and damaged area at entrance to No.215



PHOTO 7: Cracks in roadway at entrance to private road.



PHOTO 8: General view along Cabarita Road.



PHOTO 9: General view looking south along Riverview Road.



PHOTO 10: Cracks in road pavement adjacent to private road.



PHOTO 11: General view at intersection of Riverview and Cabarita Roads.



PHOTO 12: General view looking south along Riverview Rd.



PHOTO 13: Cracks in road pavement.