Pittwater.

Construction Certificate

yours locally

LOCAL

Sydney North West
21/5 Inglewood Place
Baulkham Hills 2153
PO Box 7321 Baulkham Hills BC NSW 2153
DX 8461 Castle Hill
p 02 9836 5711 f 02 9836 5722
web www.localgroup.com.au

CERTIFICATE NUMBER: 8000254

Issued under the Environmental Planning and Assessment Act 1979

SUBJECT LAND: LOT: 39
DP: 241518
11 GILWINGA DRIVE
BAYVIEW
NSW 2104

COPY

DEVELOPMENT CONSENT: NO128/07

DATE OF CONSENT: 19 JUNE, 2007

DESCRIPTION OF WORK: SWIMMING POOL

LIMITATIONS &/OR EXCLUSIONS:

BUILDING CLASSIFICATION: 10b

The application for this Construction Certificate has been determined as **APPROVED** in accordance with the procedures outlined in Clause 142 of the Environmental Planning and Assessment Regulation 2000. In making this determination, I certify that the work, if completed in accordance with the documentation accompanying the application for the Certificate (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, as amended.

DOCUMENTS ACCOMPANYING THE APPLICATION:

PLANS:
PLANS PREPARED BY JACK HODGSON CONSULTANTS P/L, DATED 21/04/10, REVISION A DATED 28/04/10, JOB # 24291-S1, SHEET 1 OF 1.

SPECIFICATIONS:

OTHER DOCUMENTS:
APPLICATION FORM
OWNERS CONSENT
OWNER BUILDER PEMRIT # 375019P
LSL RECEIPT
SYDNEY WATER APPROVAL
GEOTECHNICAL REPORT PREPARED BY BLUE MOUNTAINS GEOTECHNICAL AND ENVIRONMENTAL SERVICES PTY LTD, DATED 07/06/07, REF # 070206A.
RISK ANALYSIS & MANAGEMENT REPORT PREPARED BY JACK HODGSON CONSULTANTS PTY LTD.

FIRE SAFETY SCHEDULE ATTACHED: **YES** ☐ **N/A** ☑

Sam Pratt

Sam Pratt
BPB0732

14/5/10
Date of Certificate

Doc ID: 4C4BDED

RECEIVED
BY LOCAL CERTIFICATION SERVICES P/L
on 13/5/10 (date)

LOCAL

APPLICATION FORM

☑ Principal Certifying Authority ☑ Construction Certificate ☑ Occupation Certificate ☐ Compliance Certificate

THE APPLICATION

DATE OF APPLICATION: 4-5-10

LAND TO BE DEVELOPED

Lot No.:	39	**Deposited Plan:**	
House No.:	11	**Street Name**	GILWINGA DRIVE
Suburb:	BAYVIEW	**Post Code:**	NSW 2104
Area (m²):	OVER 40CO	**Section/Folio:**	

THE DEVELOPMENT

Proposed Building Work: Residential ☑ Commercial ☐ Industrial ☐

Description of Development: SWIMMING POOL

Value of Work: $ 40,000.

Type of work: CONCRETE.

Building Classification:

CONSENTS

Consent Authority: PITTWATER COUNCIL.

Development Consent No.: NO 128/07 **Date of Issue:** 19-6-07

BUILDER / OWNER BUILDER

Name: RAYMOND PHILLIPS

Postal Address: 11 GILWINGA DRIVE BAYVIEW NSW 2104

Licence No.: 375019P

Contact No.: 02 99992972 **Fax / E-mail:** RAYANDCAROLE.PHILLIPS@GMAIL.COM

THE APPLICANT/OWNERS

	Owner 1 / Applicant	Owner 2	Owner 3	Owner 4
First Name:	RAYMOND			
Surname:	PHILLIPS			
Street:	11 GILWINGA DR			
Suburb:	BAYVIEW			
Contact No.:	99992972			
E-mail:	RAYANDCAROLE.PHILLIPS@GMAIL.COM			

BILLING DETAILS

☑ Applicant Company Name: RAY PHILLIPS

☐ Builder Address: 11 GILWINGA DR BAYVIEW NSW 2104

☐ Other (Please provide details) Phone: 99992972

LETTER OF CONSENT

OWNERS CONSENT

I/we the owners of the subject property hereby give consent for the lodgement of all relevant applications (i.e. for Construction Certificate/s, Complying Development Certificate/s, Occupation Certificate/s, Compliance Certificate/s) and associated documentation to Local Certification Services Unit Trust for consideration.

I/we also declare that all documentation presented as part of an application for a Construction Certificate has remained unaltered from that issued with any Development Consent or that any changes have been documented and Local Certification Services Unit Trust have been advised accordingly.

In the event that the nominated Principal Certifying Authority resigns from his employment position with Local Certification Services Unit Trust my signature provided below will also serve as the authorisation for the transfer of the role and responsibilities of the Principal Certifying Authority from the nominated person to Mr Craig Hardy.

PRINCIPAL CERTIFYING AUTHORITY

With reference to this proposed development I/we the owners of the subject property hereby advise of our decision to appoint ☐ Andrew Dean ☐ Callan Blackwell ☐ Craig Hardy ☐ Danial Powell ☐ Michael Shanahan ☐ Paul Gearin ☒ Sam Pratt ☐ Paul Morgan ☐ John Parkinson ☐ Michael Hardy ☐ _____ to fulfil the role of Principal Certifying Authority (PCA) as outlined in the Environmental Planning and Assessment Act, 1979 (as amended).

I/we understand that this engagement shall be subject to the Terms and Conditions outlined in this application and the associated Schedule and I/we further understand that he will carry out all mandatory inspections required by the Act during the course of construction along with any others that he deems to be necessary and referred to the abovementioned Agreement.

I/we also advise that I/we are aware of the conditions attached to any Development Consent (i.e. Local Development Consent or Complying Development Consent) and are aware of our responsibilities in relation to those conditions.

SIGNATURES

THE APPLICANT/OWNERS

Owner 1 / Applicant

Signed: R. Phillips

Name *(Please Print)*: RAYMOND PHILLIPS **Date:** 4-5-10

Owner 2

Signed: C. Phillips

Name *(Please Print)*: CAROLE PHILLIPS **Date:** 4-5-10

Owner 3

Signed: _____

Name *(Please Print)*: _____ **Date:** _____

Owner 4

Signed: _____

Name *(Please Print)*: _____ **Date:** _____

NSW GOVERNMENT | Fair Trading

Tel 13 32 30
TTY 02 9338 4943
ABN 81 913 830 179
www.fairtrading.nsw.gov.au

Raymond Phillips
11 Gilwinga Dr
BAYVIEW NSW 2104

HOME BUILDING ACT 1989

OWNER BUILDER PERMIT

Permit : 375019P
Receipt: 1-513164268

Issued : 15/04/2010
Amount: $148.00

BUILDING SITE

11 Gilwinga Dr, BAYVIEW, NSW 2104 AUSTRALIA

AUTHORISED BUILDING WORK

Swimming pool.

Authority No : DA-0128/07
Council Area : PITTWATER (S) COUNCIL

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

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

Note: This permit is only valid when an official receipt has been imprinted. If payment is made by cheque, the permit is conditional on the cheque being met on presentation. *GST amount included in total fee: $0.00

Issuing officer

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

BLUE HAVEN POOLS & SPAS PTY LTD
26 JUN 2007
BY:.....

LONG SERVICE
BUILDING & CONSTRUCTION

22 June 2007

Building and Construction Industry
Long Service Payments Corporation
Ground Floor
cnr Donnison & Baker Streets
Gosford NSW 2250
Locked Bag 3000
Central Coast MC NSW 2252
Tel: 13 14 41
Fax: (02) 9287 5685
Email: info@lspc.nsw.gov.au
www.lspc.nsw.gov.au
ABN 93 646 090 808

BLUE HAVEN POOLS
68 HUME HIGHWAY
LANSVALE NSW 2190

Levy Receipt

Receipt No.
00051924

Received from: (Name of person or organisation paying for levy)

BLUE HAVEN POOLS

the amount of

$150.00

Payment details:

Cheque	556141	$150.00	BLUE HAVEN POOLS & SPAS P/L

being payment for Long Service Levy as detailed below

Levy Payment Form number	0288390
Council/Department/Authority	PITTWATER COUNCIL
D.A. Number	N0128/07
Work address	11 GILWINGA DRIVE BAYVIEW HEIGHTS NSW 2104
Estimated value of work	$43,000.00
Levy payable (No exemption)	**$150.00**
Total levy paid	**$150.00**

Signed: (Signature of authorised person)

Lynette Pago

Date

22 JUN 2007

60457

Swimming Pool Stamp

Permits are required to fill all new swimming pools with a capacity greater than 10,000L. Contact Sydney Water on 13 20 92 during business hours.

Fines of $220 will apply for filling pools without a permit

SYDNEY WATER APPROVED

'osition of structure in relation to Sydney 'ater's assets is satisfactory.

onnections to Sydney Water sewer/water rvices may only be made following the issue a permit to a licensed plumber/drainer.

is the owner's responsibility to ensure that proposed fittings will drain to Sydney ter's sewer.

y Plumbing and/or Drainage Work to be ried out in accordance with the Sydney ter Act 1994, AS 3500 and the NSW Code Practice.

llies, Inspection Shafts and Boundary Traps ll not be placed under any Roof, Balcony, andah, Floor or other cover unless erwise approved by Sydney Water.

perty No. 3419287

Reece, Narellan
Quick Check Agent on behalf of
SYDNEY WATER

28,3,07

SYDNEY WATER

FILLING OF SWIMMING POOLS

The water supply to the pool must be drawn from a metered service and any tap or hose used to fill the pool must be at least 150mm above the highest possible water level of the pool.

EMPTYING OF SWIMMING POOLS

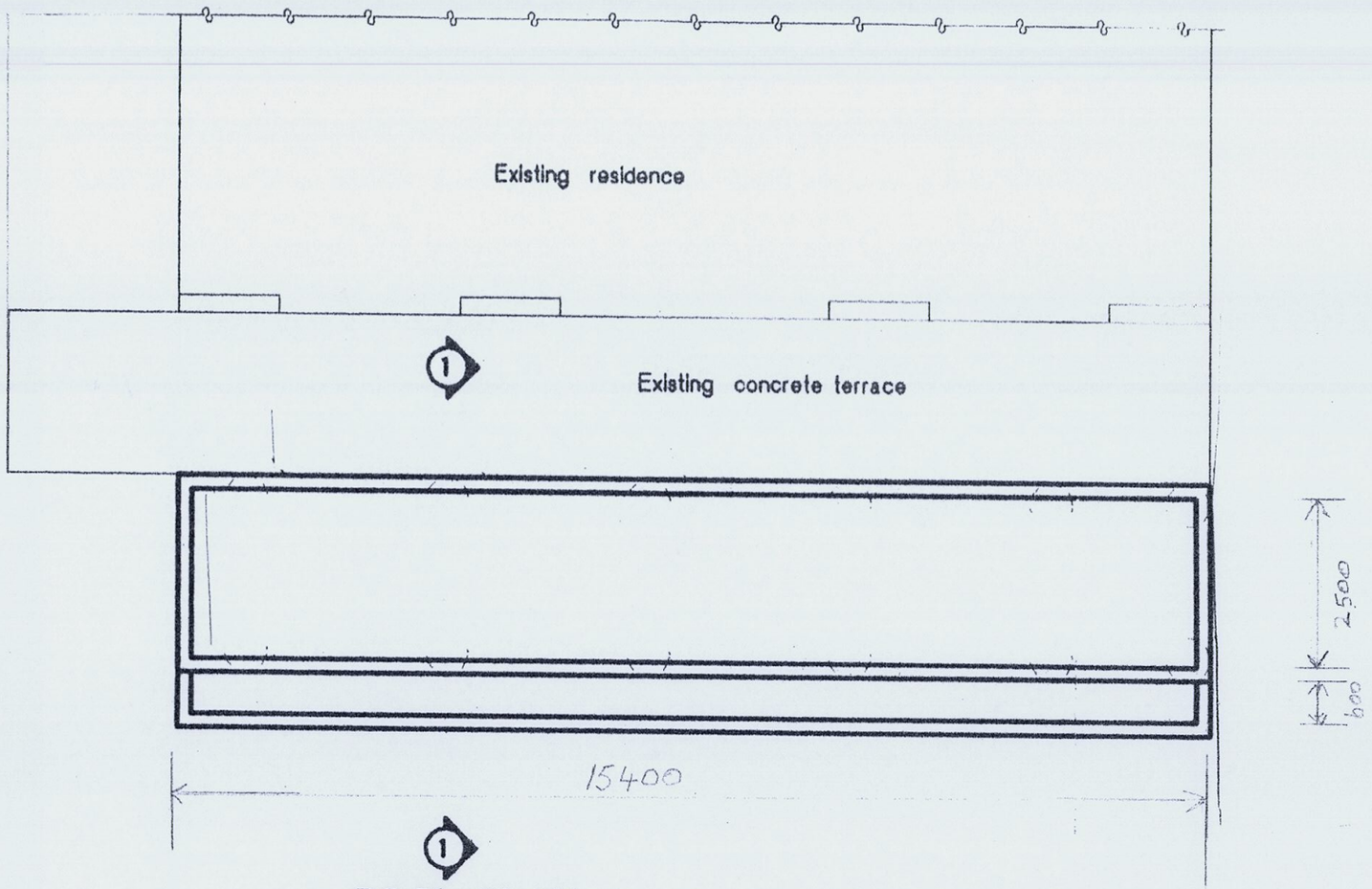
Pools emptying into Sydney Water's Sewer must:

a) Discharge into a gully through a pipe.
b) Discharge only in dry weather, with prior approval from Sydney Water's Customer Centre.

NOTE: IT IS PROHIBITED TO DISCHARGE POOL WATER INTO ANY OF SYDNEY WATER'S VACUM SYSTEM SEWERS.

Reece, Narellan
Quick Check Agent on behalf of
SYDNEY WATER

per: 28,3,07



1

POOL PLAN

Scale 1:100

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 11 Gilwinga Drive, Bayview

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

I, _____ (insert name) on behalf of _____ (trading or company name)

on this the _____ (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: Risk Analysis and Management Report for the proposed Pool at 11 Gilwinga Drive, Bayview VS 24291

Report Date: 5th March, 2007

Author: Ben White

Structural Documents list:

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.

_____ (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 08/03/2007 and now certify that I have viewed the above listed structural documents prepared for the same development. I am satisfied that the recommendations given in the Geotechnical Report have been appropriate taken into account by the structural engineer in the preparation of these structural documents. I am aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified,In the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature J Hodgson

Name J HODGSON

Chartered Professional Status MEngSc FIEAust

Membership No. 149 788

PITTWATER COUNCIL

ABN61340837871
Telephone 02 9970 1111
Facsimile 02 9970 7150
Postal Address
PO Box 882
Mona Vale NSW 1660
DX 9018, Mona Vale

Business Hours:
8.00am to 5.30pm, Monday to Thursday
8.00am to 5.00pm, Friday

DA No: N0128/07

13 May 2009

RAYMOND DILLWYN PHILLIPS
11 GILWINGA DRIVE
BAYVIEW NSW 2104

Dear Sir/Madam

Extension of Development Consent for a swimming pool

11 GILWINGA DRIVE BAYVIEW HEIGHTS NSW 2104.

Pursuant to Section 95A of the Environmental Planning and Assessment Act, 1979 (as amended), please be advised that an extension of the above Development Consent has been granted to 19th June, 2010.

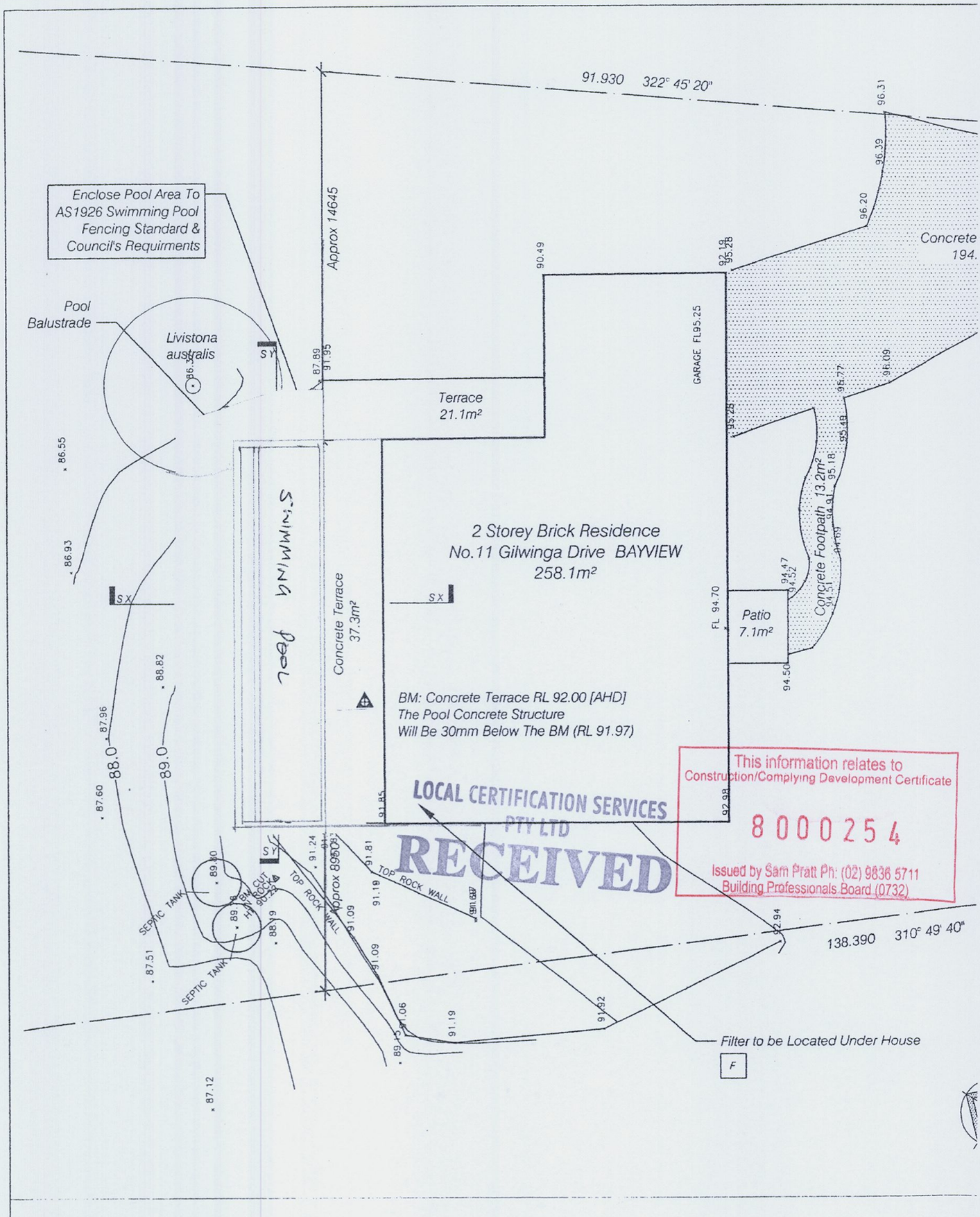
Please note that the consent will lapse if building, engineering or construction work relating to the building is not physically commenced on the land to which the consent applies by this date.

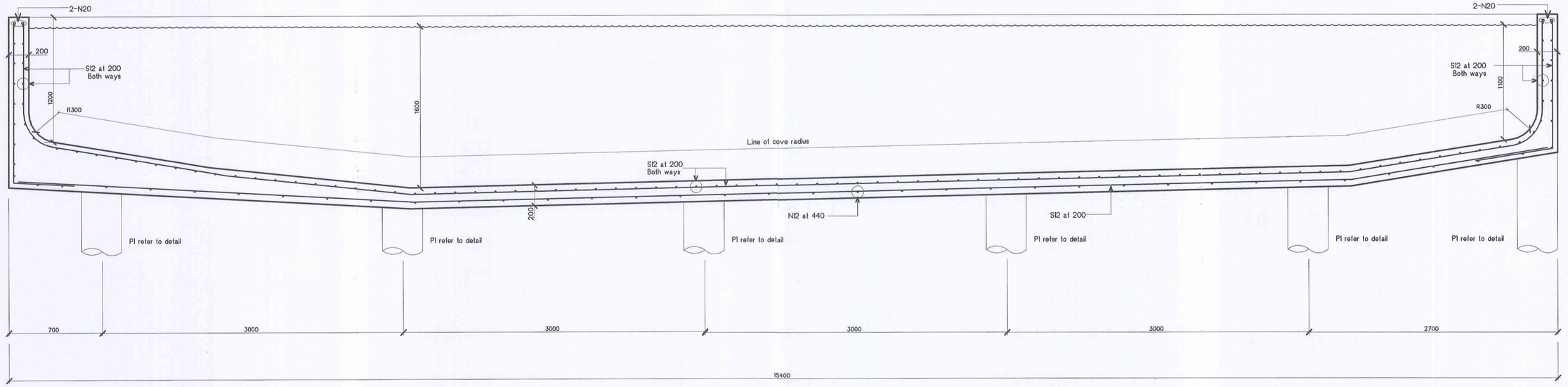
Yours faithfully

Sophie Garland
PLANNER

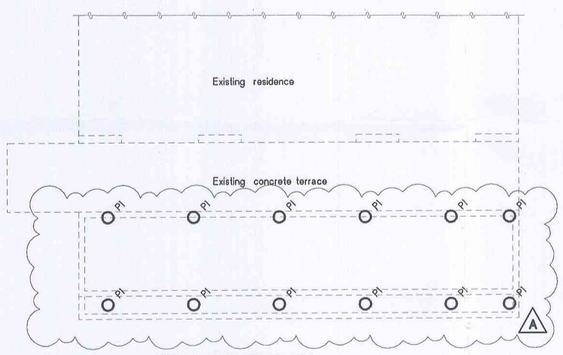
LOCAL CERTIFICATION SERVICES PTY LTD
RECEIVED

This information relates to Construction/Complying Development Certificate
8000254
Issued by Sam Pratt Ph: (02) 9836 5711
Building Professionals Board (0732)

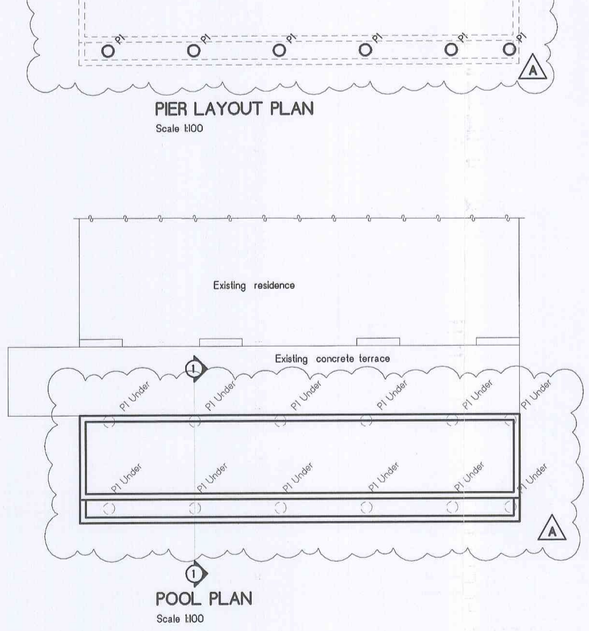

91.930 322° 45' 20"
Enclose Pool Area To AS1926 Swimming Pool Fencing Standard & Council's Requirments
Approx 14645
Pool Balustrade
Livistona australis
Terrace 21.1m²
GARAGE FL95.25
Concrete 194.
Concrete Footpath 13.2m²
2 Storey Brick Residence
No.11 Gilwinga Drive BAYVIEW
258.1m²
Concrete Terrace 37.3m²
Patio 7.1m²
FL 94.70
Road GILWINGA
BM: Concrete Terrace RL 92.00 [AHD]
The Pool Concrete Structure
Will Be 30mm Below The BM (RL 91.97)
SEPTIC TANK
SEPTIC TANK
TOP ROCK WALL
TOP ROCK WALL
Approx 895
138.390 310° 49' 40"
Filter to be Located Under House
F
LOCAL CERTIFICATION SERVICES PTY LTD
RECEIVED
This information relates to Construction/Complying Development Certificate
8000254
Issued by Sam Pratt Ph: (02) 9836 5711
Building Professionals Board (0732)



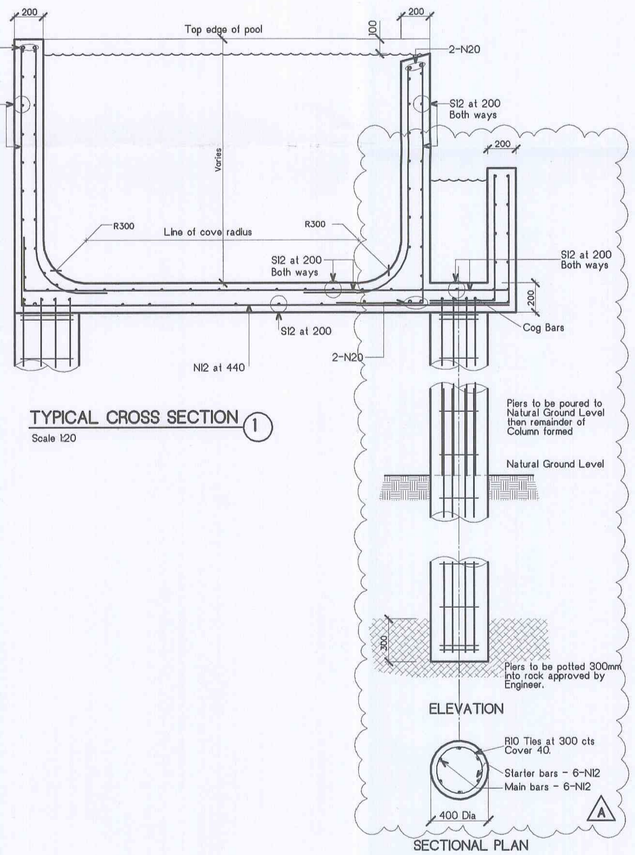
LONGITUDINAL SECTION
Scale 1:20



PIER LAYOUT PLAN
Scale 1:100

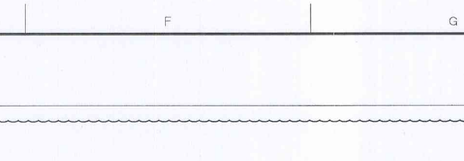


POOL PLAN
Scale 1:100

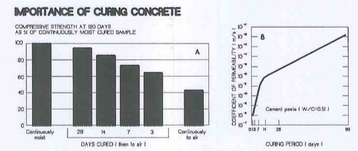


TYPICAL CROSS SECTION 1
Scale 1:20

SECTIONAL PLAN
PIER DETAIL- PI
Scale 1:20



TYPICAL SKIMMER DETAILS.
Scale 1:20



CONCRETE NOTES - SWIMMING POOL.
1. All concrete work to be in accordance with AS 3600.
2. F'c = 32 MPa. Cover 50 min. to water surface and Ground. 65 everywhere else.
3. Maximum aggregate size = 10 for Pool.
4. Slump = 80.
5. All concrete to be vibrated.
6. Slabs to be kept damp for at least 14 days after placing or to be protected by an approved curing membrane.
7. Bar Chairs to be no more than 800mm ctr to ctr. spacing.
8. Reinforcing Steel to comply with AS/NZS 4671:2001, and to be D500N unless noted otherwise. (where 500 = strength grade in megapascals & N = Normal ductility class)
   Steel Reinforcement to be cut & bent in accordance with AS 3600.
9. Reinforcement to be tied at every other intersection minimum.
10. Metal roofing being used as formwork (not Bondeck or similar).
    Depth of Slab must be taken from the Top of the Roof Rib.
    Specified bottom cover must be taken from the Top of the Roofing Rib.

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

No.	Amendment	Drawn	Date
A	Amendments to piers and balance tank	MP	28.04.2010

PLAN OR DOCUMENT CERTIFICATION

I am a qualified.....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEER..... I hold the following qualifications or licence No.....M.Eng.Sc..... .....F.I.E.Aust.....Nper3.....Struct.Civil.No.149788..... Further I am appropriately qualified to certify this component of the project. I hereby state that these plans or details comply with the conditions of development consent, the provisions of the Building Code of Australia. A.S.1170., A.S.1170.1. A.S.1170.2. A.S.1684., A.S.2870.1.A.S.3500., A.S.3600. A.S. 3700., A.S.4100 & A.S.1163

Jack D. Hodgson 28-4-10 J Hodgson

Name Date Signature

PEIR LAYOUT AND POOL PLANS AND SECTIONS

PROPOSED POOL
11 GILWINGA DRIVE
BAYVIEW

R & C PHILLIPS

This information relates to Construction/Complying Development Certificate 8000254
Issued by Sam Pratt Pty: (02) 9836 5711 Building Professionals Board (0732)

LOCAL CERTIFICATION SERVICES PTY LTD RECEIVED

Our design and drawings are based upon and derived from information including levels, surveys, etc) provided by the owner/architect/designer/ builder. Owners sketches, Rec 15.12.2009
Should the information provided to us be found to be deficient, unreliable, incorrect or inaccurate then our design/drawings may require modification. We take no responsibility for verifying the accuracy of the information that forms the basis of our brief and it is your obligation to verify it prior to the commencement of building operations.

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

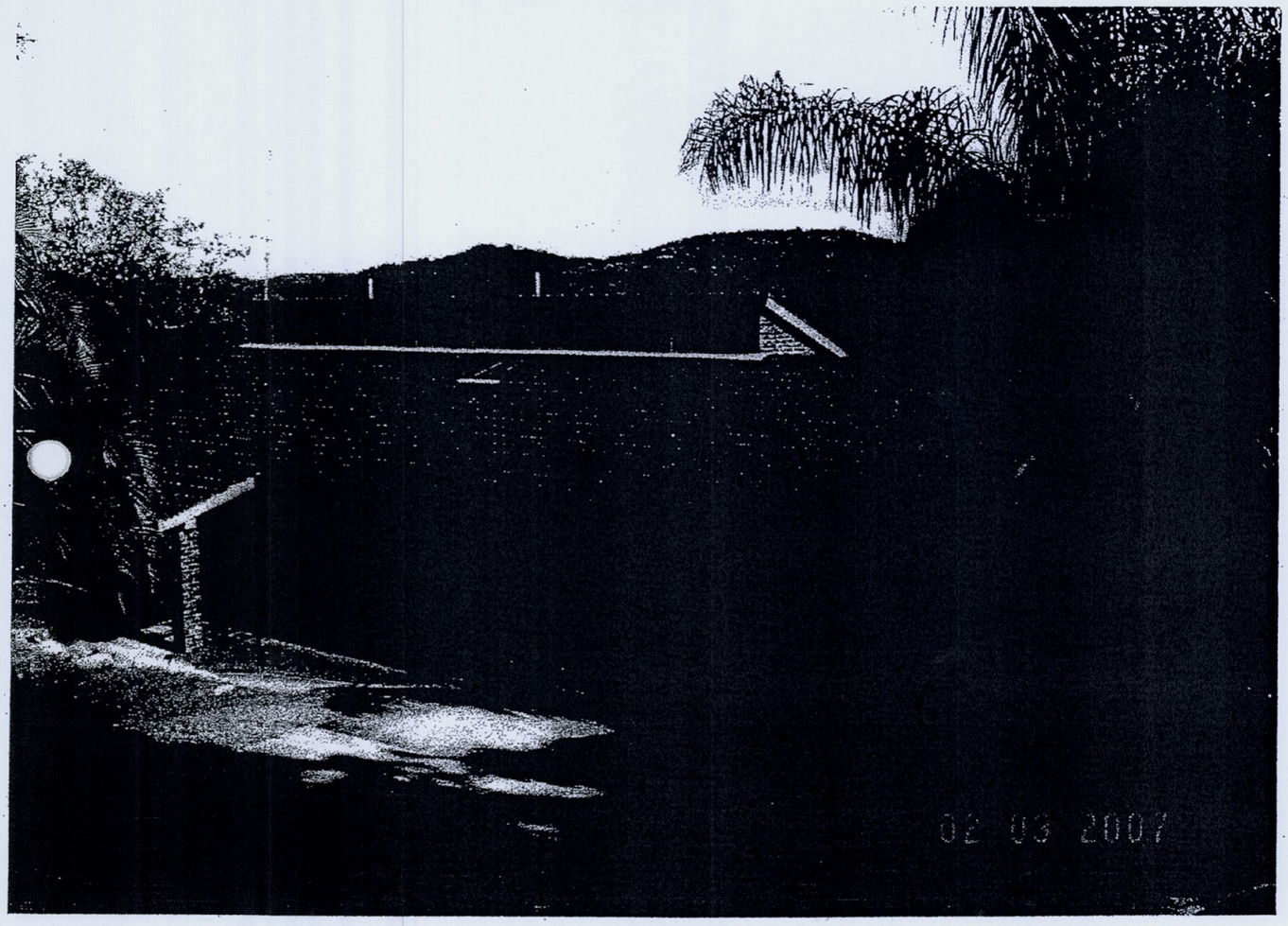
JACK HODGSON CONSULTANTS PTY. LIMITED.
Consulting Civil, Geotechnical, and Structural Engineers.
57 Darley Street, MONA VALE 2103. P.O. Box 389. Post Code 1660.
Telephone (02) 9979 6733. Facsimile (02) 9979 6926.
Email:info@jackhodgson.com.au website:www.jackhodgson.com.au A.C.N. 053 405 011

Designed	Drawn	Job No.	Drawing No.
JDH	MP	24291-S1	\A
Design Check	Drawing Check		
JDH	LS		
Date			
21 APRIL 2010			

Scale 1:100 0 5m 10m 15m 20m 25m
Scale 1:20 0 1m 2m 3m 4m 5m

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

RISK ANALYSIS & MANAGEMENT FOR PROPOSED POOL AT 11 GILWINGA DRIVE, BAYVIEW



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

3. DESCRIPTION OF SITE & SURROUNDING AREA.

3.1 The site was inspected on the 2nd March 2007.

3.2 The property is on the low side of the road and has a north westerly aspect. From the road the house is accessed by a concrete driveway that enters the centre of the block and winds across the slope to the north running to a garage attached to the north eastern side of the house (Photo 1). The driveway cuts through out cropping sandstone beds that step down the slope in a series of benches to the rear boundary and beyond at an average gradient of 15 to 20 degrees. On the uphill side of the house and at the western side shallow filling has been placed over the rock to form a lawn (Photo 2). Low stable stack rock retaining walls have been used to landscape the gardens. At the western side the fill is up to 1 metre deep and is also supported by stable stack rock walls. A storm water pipe draining the road above directs water into a natural channel the runs down the western side of the site just beyond the western boundary (Photo 3). On the down hill side of the house sandstone beds outcrop at the site for the proposed pool (Photo 4). Some loose joint blocks are resting on the slope below and these are in stable positions (Photo 5). Natural bushland vegetates the slope around and below the out crop on the downhill side of the house. This vegetation extends to the downhill boundary and beyond.

3.3 The two storey brick house is in good condition. It is supported on brick walls and brick piers that show no evidence of ground movement.

3.4 The adjoining properties do not present a risk of instability to the subject property.

4. GEOLOGY OF THE SITE.

4.1 The site is underlain by Hawkesbury Sandstone that outcrops across the site. These sandstones are of Middle Triassic age and were probably laid down in braided streams. The sand grains are mainly quartz with some sand grade claystone fragments. There are lenticular deposits of mudstones and laminites which are thought to have been deposited in abandoned channels of the main streams. The sandstones generally have widely spaced sub vertical joints with some current bedding. The joint directions are approximately north/south and east/west. The beds vary in thickness from 0.5 to in excess of 5 metres.

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

7.4 BESIDE THE SITE.

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

8. RISK ASSESSMENT.

8.1 ABOVE THE SITE.

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

8.2 ON THE SITE.

8.2.1 HAZARD ONE The loose joint blocks have come to rest on a portion of the slope that is up to 20 degrees steep. These blocks have been in their current position for a long time. The geometry of the blocks makes movement down the slope by rolling unlikely. The likelihood of the joint blocks moving down the slope is assessed as 'Unlikely' ($>10^{-4}$). The consequences to property is assessed as 'Minor' (>0.1%). The consequences to life of such a failure are assessed as 'Medium' ($>10^{-3}$). The risk to property is 'Low' (10^{-7}). The risk to life is 'Low' (10^{-6}).

8.3 BELOW THE SITE.

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

8.4 BESIDE THE SITE.

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

9. SUITABILITY OF DEVELOPMENT FOR SITE.

9.1 GENERAL COMMENTS.

The proposed pool is suitable for the site.

9.2 GEOTECHNICAL COMMENTS.

No geotechnical hazards will be created by the proposed development.

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

10.8 MAINTENANCE.

10.8.1 The property is to be maintained in good order and in accordance with the guidelines set out in CSIRO BTF 18 "Foundation Maintenance and Footing Performance: A Homeowner's Guide" and the Australian Geomechanics Article "Landslide Risk Management Concepts and Guidelines" May 2002.

10.8.2 No special maintenance is required.

11. GEOTECHNICAL CONDITIONS FOR ISSUE OF CONSTRUCTION CERTIFICATE.

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

The work is to be carried out in accordance with the Risk Management Report VS 24291 dated 5th March 2007.

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

12. GEOTECHNICAL CONDITIONS FOR ISSUE OF OCCUPATION CERTIFICATE.

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

The work has been carried out in accordance with the Risk Management Report VS 24291 dated 5th March 2007.

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

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

Photo 5

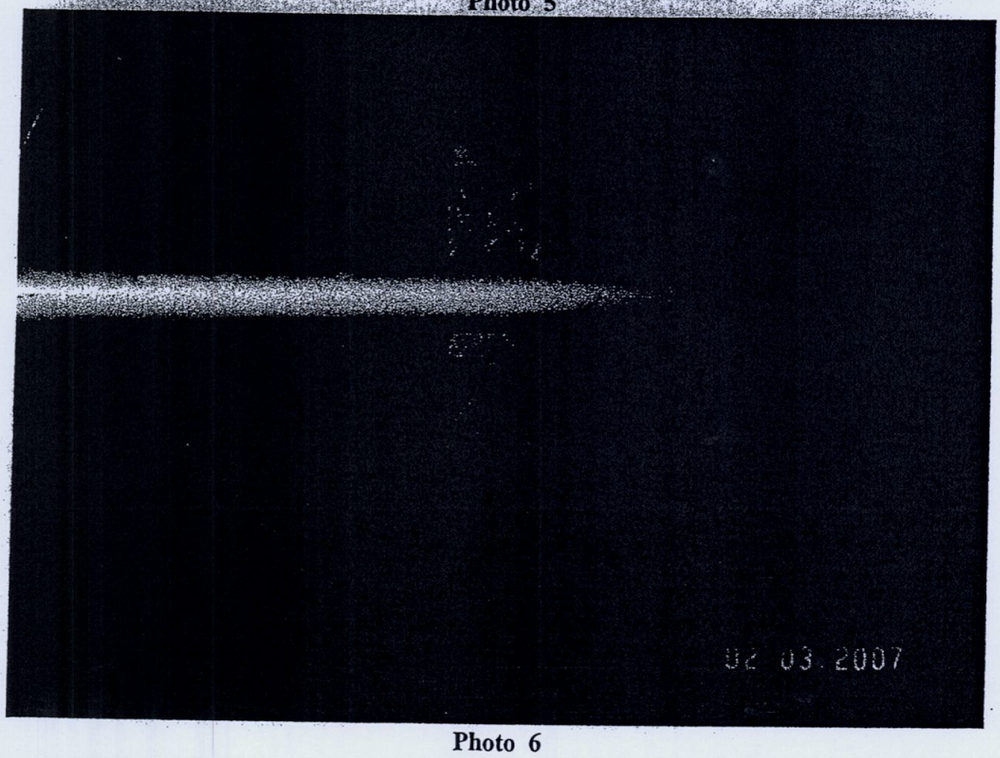
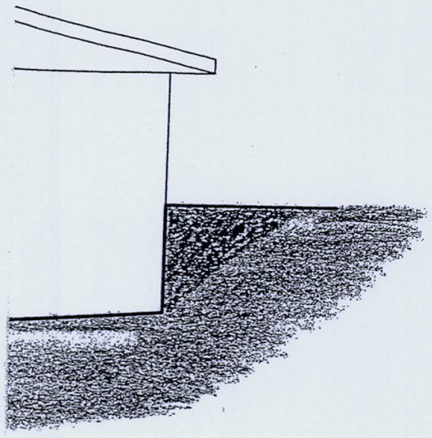
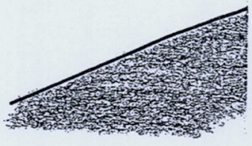


Photo 6

FILL
SANDY LOAM TOPSOIL
SANDY CLAY
HAWKESBURY SANDSTONE



HAZARD 1



HAZARDS
1. The loose joint blocks on th

Type Section
11 Gilwinga Drive, Bayview
VS 24291
Scale 1:100

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

Development Application for RAY & CAROL PHILLIPS
Name of Applicant
Address of site 1 GILWINGA DRIVE, BAYVIEW

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

Geotechnical Report Details:

Report Title: RISK ANALYSIS & MANAGEMENT FOR PROPOSED POOL AT 11 GILWINGA DRIVE, BAYVIEW

Report Date: 5/3/07

Author: BEN WHITE

Please mark appropriate box

- ☒ Comprehensive site mapping conducted 2/3/07 (date)
- ☒ Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
- ☐ Subsurface investigation required
  - ☒ No Justification SEE REPORT
  - ☐ Yes Date conducted .....
- ☒ Geotechnical model developed and reported as an inferred subsurface type-section
- ☒ Geotechnical hazards identified
  - ☐ Above the site
  - ☒ On the site
  - ☐ Below the site
  - ☐ Beside the site
- ☒ Geotechnical hazards described and reported
- ☒ Risk assessment conducted in accordance with Council's Policy
  - ☒ Consequence analysis
  - ☒ Frequency analysis
- ☒ Risk calculation
- ☒ Risk assessment for property conducted in accordance with Council's Policy
- ☒ Risk assessment for loss of life conducted in accordance with Council's Policy
- ☒ Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater
- ☒ Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved.
- ☒ Design Life Adopted:
  - ☒ 100 years
  - ☐ Other ..... specify
- ☒ Development Conditions to be applied to all four phases as described in Pittwater Geotechnical Risk Management Policy have been specified
- ☒ Additional action to remove risk where reasonable and practical have been identified and included in the report.

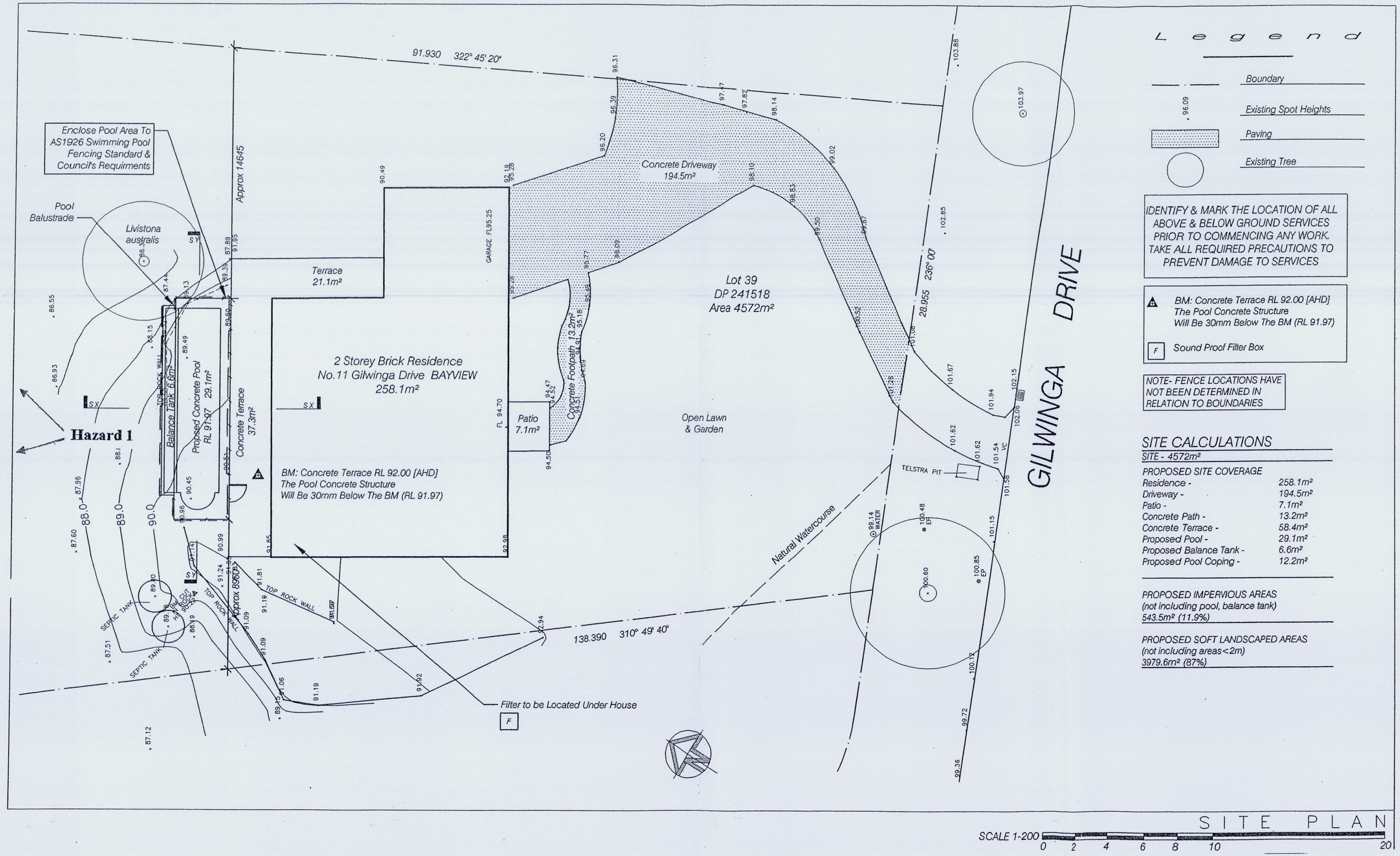
I am aware that Pittwater Council will rely on the Geotechnical Report, to which this checklist applies, as the basis for ensuring that the geotechnical risk management aspects of the proposal have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure,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

Signature J Hodgson

Name Jack Hodgson

Chartered Professional Status MEngSc FIEAust

Membership No. 149 788



Legend

- Boundary
- 96.09 Existing Spot Heights
- Paving
- Existing Tree

IDENTIFY & MARK THE LOCATION OF ALL ABOVE & BELOW GROUND SERVICES PRIOR TO COMMENCING ANY WORK. TAKE ALL REQUIRED PRECAUTIONS TO PREVENT DAMAGE TO SERVICES

BM: Concrete Terrace RL 92.00 [AHD]
The Pool Concrete Structure
Will Be 30mm Below The BM (RL 91.97)

F Sound Proof Filter Box

NOTE- FENCE LOCATIONS HAVE NOT BEEN DETERMINED IN RELATION TO BOUNDARIES

SITE CALCULATIONS

SITE - 4572m²

PROPOSED SITE COVERAGE

Residence -	258.1m²
Driveway -	194.5m²
Patio -	7.1m²
Concrete Path -	13.2m²
Concrete Terrace -	58.4m²
Proposed Pool -	29.1m²
Proposed Balance Tank -	6.6m²
Proposed Pool Coping -	12.2m²

PROPOSED IMPERVIOUS AREAS
(not including pool, balance tank)
543.5m² (11.9%)

PROPOSED SOFT LANDSCAPED AREAS
(not including areas<2m)
3979.6m² (87%)

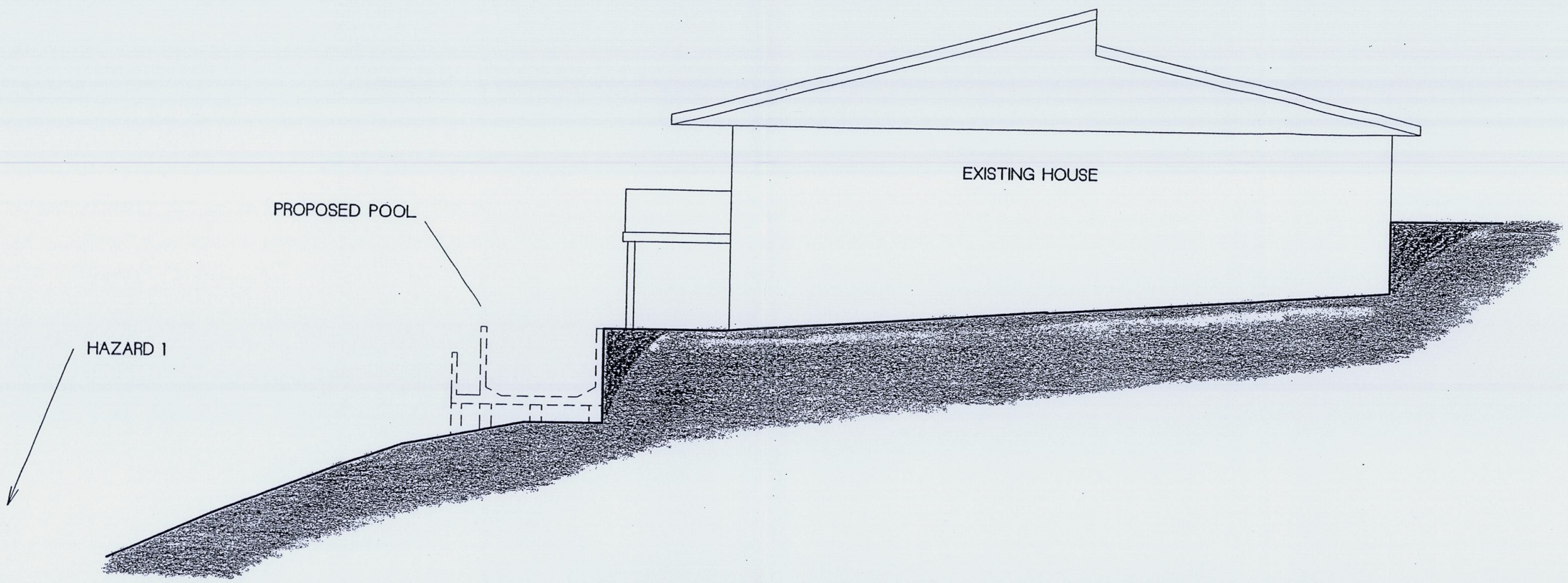
SITE PLAN

SCALE 1-200 0 2 4 6 8 10 20

Site Plan
11 Gilwinga Drive, Bayview
VS 24291
Scale 1:200

SECTION LOOKING NORTH EAST

FILL
SANDY LOAM TOPSOIL
SANDY CLAY
HAWKESBURY SANDSTONE



HAZARDS
1. The loose joint blocks on the slope below the sandstone outcrop on the downhill side of the house (off section).

Type Section
11 Gilwinga Drive, Bayview
VS 24291
Scale 1:100

BLUE MOUNTAINS
Geological and Environmental Services Pty. Ltd.
ACN 069 994 056

20 Fifth Avenue, Katoomba 2780
Phone (02) 4782 5981
Fax (02) 4782 5074

7th June 2007

Ref. No. 070206A

Mr. R. & Mrs. C. Phillips
11 Gilwinga Drive
BAYVIEW NSW 2104

RE: AMENDMENT TO REPORT FOR THE DISPOSAL OF BACKWASH AND OVERFLOW WATER FROM THE PROPOSED SWIMMING POOL AT LOT 39 DP 241518, No. 11 GILWINGA DRIVE, BAYVIEW – PITTWATER COUNCIL DA N0128/07

Dear Ray & Carol,

Further to the letter from Mr. Kevin Short, Planner at Pittwater Council, I am pleased to provide this amendment to the report for pool backwash and overflow water on your land at Lot 39, No. 11 Gilwinga Drive, Bayview. From Mr. Short's letter, it is understood that the proposal to directly apply excess pool waters to an adjacent stormwater discharge channel is not appropriate. This has also been confirmed in my discussions with Mr. Nick Ives of Council who explained that direct discharge of excess pool waters to a stormwater system has been unacceptable in the Pittwater Local Government Area for some time.

Therefore, as outlined in the letter of Mr. Short, the excess pool water on the unsewered property must be suitably dealt with on the site. Since the preparation of the report, it is now understood that use of a cartridge filter eliminates the need for backflushing (i.e. as per a sand filter), where the backwash volume was estimated at 300 litres or less. Note that cartridge filters need to be periodically removed and cleaned. For example, the cartridge filter can be hosed clean in a bucket, whereby the small volume of water

generated can be applied to pot plants or lawn/gardens away from the land application area for treated effluent in the front yard.

Further to our recent discussions, we have agreed on the following proposal to cater for excess overflow waters from the proposed wet-edge swimming pool:

1. Collect the water in a concrete or polymer holding tank with a suggested capacity of about 6000 litres (final location to be determined by others and larger capacity OK) – it is assumed that a septic tank for effluent disposal may be the most appropriate tank to use in this instance.
2. Apply the water from the holding tank to the land with use of an absorption trench (i.e. like those used to apply treated effluent).
3. When weather conditions allow, a percentage of excess pool water could be used to re-top the level of the pool.

Note that a holding tank would also allow for the pump-out tanker removal of excess waters if it accumulates and cannot be applied to an absorption trench or used to top-up the level of water in the pool. Furthermore, because this will be a closed tank which is not open to sunlight, it is understood that there should be no algal growth. Hence, there would be no apparent need to re-chlorinate water in the holding tank which could therefore be contained for a relatively long period of time. Nevertheless, if excess pool water 'goes-off' in the holding tank, additional chlorination may be required before it is discharged.

As detailed in the original report, for a rise in water level in the pool of 50mm/day, the resultant maximum overflow volume of water would be 1455 litres/day (at 29.1m^2 surface area). Furthermore, for the assumption of a 50mm rise in the pool level over two days of significant rainfall, it is estimated that there would be the maximum expected excess volume of 1455 litres/day x 2 days = 2910 litres. Therefore, a holding tank at approximately 6000 litre capacity would cater for about 4 days of excess pool waters based on 50mm of rain/day over the 4 days.

With respect to point 2 above, a location on the property has been delineated for an absorption trench with suggested dimensions of 8m in length, 1.5m in width and minimum depth of 0.6m. This area, which has been carefully delineated on the property

with Mr. Phillips, is in the back yard at a plan distance of about 20.5 north of the dwelling (Figure 1A).

The area containing the proposed absorption trench occurs on a relatively level surface on the overall steeper sideslope which lacks native vegetation and has what appears to be the greatest depth of soil coverage. The vegetation at this locality comprises a grass cover with some bracken fern. When the trench is excavated and prepared, it is suggested to provide a grass cover over it and the adjacent margins with an active year-round growth period to assist with the uptake of excess pool overflow waters.

To assess the suitability of the soils to accept excess pool water on a very infrequent basis, two 100mm diameter hand-auger holes were bored to a depth of 0.8m at the site of the proposed absorption trench. The results of these auger holes are summarised below.

(i) SAND (TOPSOIL) – A1 Horizon

- observed from the surface to an average depth of 0.25m.
- comprises light-brown to brown, fine to medium grained sand with few ironstone, weathered sandstone and quartz fragments (i.e. approximately 2 - 10% coarse fragments.

(ii) CLAYEY SAND – A2 Horizon

- observed from an average depth of 0.25 - 0.5m.
- comprises brown to dark-brown, fine to medium grained clayey sand with few ironstone, weathered sandstone and quartz fragments (i.e. approximately 2 - 10% coarse fragments).

(iii) SANDY CLAY LOAM – B Horizon

- observed from an average depth of 0.5 - 0.7m.
- comprises brown to orange, fine to medium grained sandy clay loam with few ironstone, weathered sandstone and quartz fragments (i.e. approximately 2 - 10% coarse fragments).

(iv) SANDY CLAY – B Horizon

- observed from an average of 0.7m to a maximum depth of 0.8m.
- comprises brown to orange, fine to medium grained sandy clay with few ironstone, weathered sandstone and quartz fragments (i.e. approximately 2 - 10% coarse fragments).

It is considered that the soil types above have typically favourable permeability characteristics with respect to the absorption and assimilation of excess pool waters in the proposed trench and surrounding margins. To estimate the design volume of excess pool water that can be applied to the proposed absorption trench at the nominated dimensions, reference is made to Section 4.2A7.3.2 of AS/NZS 1547 (2000) which provides an equation to determine required trench lengths for both primary and secondary treated effluent. Whilst this Standard relates to effluent management, it is considered to crudely equate with the situation at the subject site with respect to excess pool waters.

The trench length equation from AS/NZS 1547 (2000) is provided below:

$$L = \frac{Q}{DLR \times W}, \text{ where}$$

L = trench length in metres – 8m as nominated.

Q = design daily effluent flow – equates with daily volume of excess pool water.

DLR = Design Loading Rate in mm/day – based on the soil types encountered.

W = width in metres – i.e. 1.5m as nominated.

With respect to the DLR value, it is considered that the pool water best equates with 'secondary treated effluent'. Whilst this is the premise for design purposes in this report, the chlorinated pool water actually has a superior quality to secondary treated effluent – i.e. lesser 'pollutant types' and an overall higher level of purity. This means that the absorption trench at the nominated dimensions would probably be able to cater for a higher volume of excess pool water relative to secondary treated effluent.

Based on the soil types encountered, it is considered that with reference to Table 4.2A1 of AS/NZS 1547 (2000) a DLR value of 30mm/day best equates with the conditions at the site of the proposed absorption trench. The trench length equation is modified below to assess the design volume of excess pool water that can be catered for:

$$
\begin{aligned}
Q &= L(DLR \times W) \\
&= 8m(30mm/day \times 1.5m) \\
&= 8(45) \\
&= 360 \text{ litres/day.}
\end{aligned}
$$

Whilst strictly for secondary treated effluent, the equation above indicates that the proposed absorption trench at the nominated dimensions can cater for a design volume of at least 360 litres/day of excess pool water. With consideration to the high quality of the excess pool water and the sandy soils in the A1 and A2 horizons, it is likely that the absorption trench could cater for a slightly increased volume, say in the vicinity of about 500 litres/day. If possible, it would be prudent to apply excess pool water at a relatively slow rate throughout a single day so that the trench does not become hydraulically overloaded if waters are applied too rapidly.

Note that there will be resting periods between the application of pool overflow waters to the absorption trench. This will increase the performance and life span of the trench, and effectively allow it to cater for a volume of greater than 360 litres/day. Furthermore, the opportunity to reapply water from the holding tank back to the pool after rainfall events would also reduce the hydraulic loading rate on the absorption trench.

Trusting that these details are to the satisfaction of Council. However, do not hesitate to contact me if I can be of further assistance.

Yours faithfully,

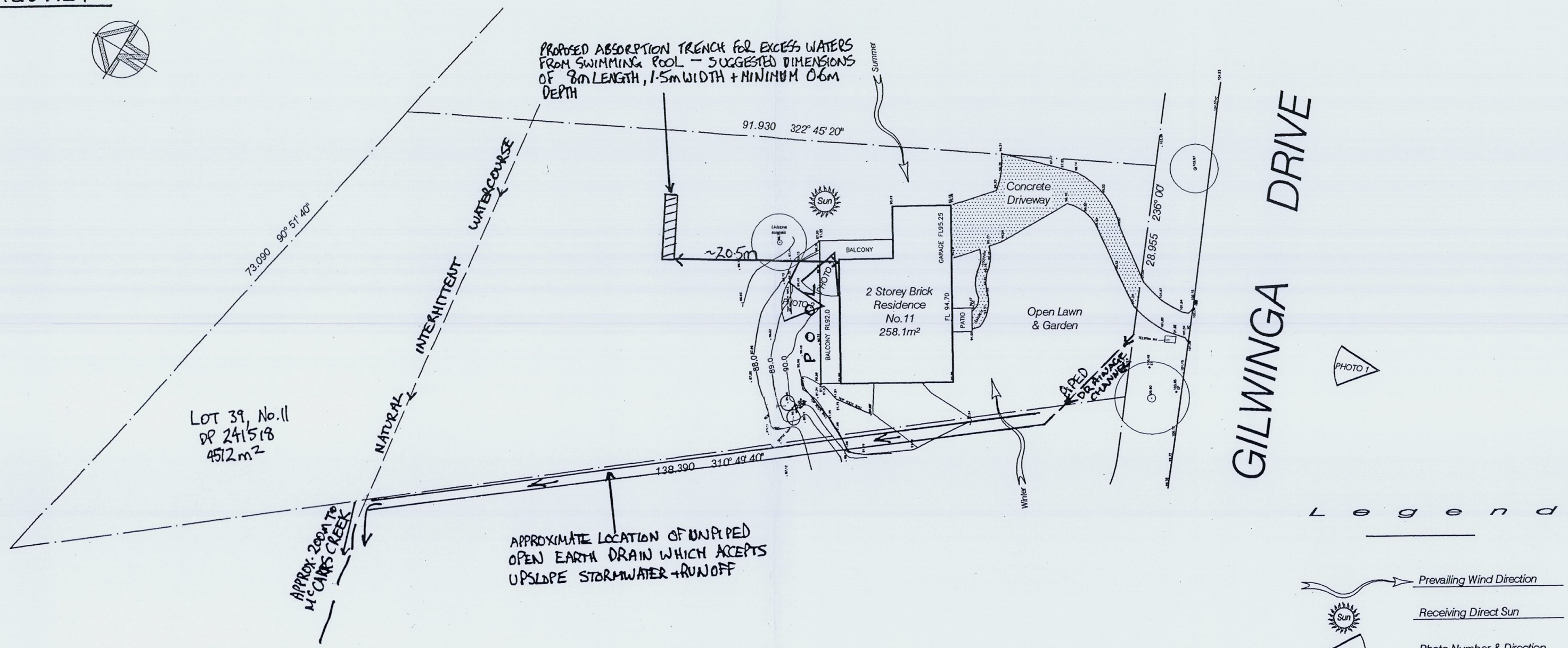
Grant Austin

GRANT AUSTIN

Engineering Geologist

Affil. I.E. Aust.

FIGURE 1A



Legend

- Prevailing Wind Direction
- Sun — Receiving Direct Sun
- PHOTO 1 (Direction) — Photo Number & Direction
- Boundary
- Existing Spot Heights
- Paving
- Existing Tree

NOTE- FENCE LOCATIONS HAVE NOT BEEN DETERMINED IN RELATION TO BOUNDARIES

*G. AUSTIN, BNG HES PL
REPORT REF. NO. 070206
FEBRUARY 2007
PHONE 4782-5981
AMENDMENT 070206A, JUNE 2007

SITE ANALYSIS

SCALE 1-500 0 5 10 15 20 25 50

DRAFT

BLUE HAVEN POOLS & SPAS PTY LTD

Site Plan & Pool Plans prepared by Blue Haven Pools & Spas Pty Ltd
68 Hume Highway Lansvale NSW 2166
Telephone: (02) 9728 0444 Fax: (02) 9728 0455

PROPOSED SWIMMING POOL
FOR PHILLIPS RESIDENCE
AT 11 GILWINGA DRIVE, BAYVIEW

DATE: 13/02/07
DRAWN: KSR
SHEET 1 OF 8

DRAWING/CONTRACT No.
BHP – 07T15027
LC – 900