

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

Development Application for _____
Name of Applicant

Address of site 73 Dolphin Crescent, Avalon

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Declaration made by geotechnical engineer or engineering geologist or coastal engineer (where applicable) as part of a geotechnical report

I, Ben White on behalf of White Geotechnical Group Pty Ltd
(Insert Name) (Trading or Company Name)

on this the 3/5/23 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$10million.

I:

Please mark appropriate box

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

Geotechnical Report Details:

Report Title: Geotechnical Report 73 Dolphin Crescent, Avalon

Report Date: 3/5/23

Author: BEN WHITE

Author's Company/Organisation: WHITE GEOTECHNICAL GROUP PTY LTD

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

Australian Geomechanics Society Landslide Risk Management March 2007.

White Geotechnical Group company archives.

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

Signature 

Name Ben White

Chartered Professional Status MScGEOLAusIMM CP GEOL

Membership No. 222757

Company White Geotechnical Group Pty Ltd

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

Development Application for	Name of Applicant
Address of site	<u>73 Dolphin Crescent, Avalon</u>

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: Geotechnical Report <u>73 Dolphin Crescent, Avalon</u>
Report Date: <u>3/5/23</u>
Author: <u>BEN WHITE</u>
Author's Company/Organisation: <u>WHITE GEOTECHNICAL GROUP PTY LTD</u>

Please mark appropriate box

- ☒ Comprehensive site mapping conducted 14/2/23
(date)
- ☒ Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
- ☒ Subsurface investigation required
 - ☐ No Justification _____
 - ☒ Yes Date conducted 14/2/23
- ☒ Geotechnical model developed and reported as an inferred subsurface type-section
- ☒ Geotechnical hazards identified
 - ☒ Above the site
 - ☒ On the site
 - ☒ Below the site
 - ☐ Beside the site
- ☒ Geotechnical hazards described and reported
- ☒ Risk assessment conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 - ☒ Consequence analysis
 - ☒ Frequency analysis
- ☒ Risk calculation
- ☒ Risk assessment for property conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Risk assessment for loss of life conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater - 2009
- ☒ Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved.
- ☒ Design Life Adopted:
 - ☒ 100 years
 - ☐ Other _____
specify
- ☒ Geotechnical Conditions to be applied to all four phases as described in the Geotechnical Risk Management Policy for Pittwater - 2009 have been specified
- ☒ Additional action to remove risk where reasonable and practical have been identified and included in the report.
- ☐ Risk assessment within Bushfire Asset Protection Zone.

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


Signature _____
Name Ben White
Chartered Professional Status MScGEOLAusIMM CP GEOL
Membership No. 222757
Company White Geotechnical Group Pty Ltd

GEOTECHNICAL INVESTIGATION:

Alterations and Additions at **73 Dolphin Crescent, Avalon**

1. Proposed Development

- 1.1** Extend part of the existing house on the downhill side.
- 1.2** Various other minor internal and external alterations to the existing house.
- 1.3** Construct a new balcony on the downhill side of the house with entry steps.
- 1.4** Replace the existing deck and pavement on the uphill side of the house.
- 1.5** Details of the proposed development are shown on 16 drawings prepared by Jamie King Landscape Architect, project number 23040, drawings numbered Sht-101 to Sht-114, Issue E, dated 17/4/23.

2. Site Description

- 2.1** The site was inspected on the 14th February, 2023.
- 2.2** This residential property is on the high side of the road and has a S aspect. It is located on the moderately graded upper reaches of a hillslope. The natural slope rises across the property at an average angle of ~15°. The slope below the property continues at similar angles. The slope above the property increases in grade.
- 2.3** At the road frontage, a concrete driveway runs up the slope to a garage below the house (Photo 1). A stable low unsupported cut and fill provides a level platform for the driveway. Fill provides a level platform for a lawn and garden area on the downhill side of the house (Photo 2). The fill is supported by a timber retaining wall up to ~1.0m high (Photo 3). The timber wall displays some rotting but appears to be currently stable. The single storey brick and timber clad house with garage below is supported on brick walls and piers (Photos 4 & 5). The supporting walls and piers stand

vertical and show no significant signs of movement (Photo 6). A stable concrete block retaining wall up to ~2.0m high along the W common boundary supports fill on the W neighbouring property (Photo 7). A timber deck and paved area extends off the uphill side of the house (Photo 5). Two timber retaining walls ~0.8m high each (maximum combined height of ~1.6m) support a cut for the deck and paved area (Photo 8). The lower and upper walls are tilting at up to ~11° and ~4° downslope respectively. See 'Section 13 Ongoing Maintenance'. A moderately sloping lawn and garden area extends from the uphill side of the retaining walls to the uphill property boundary (Photo 9). Apart from the tilting retaining walls (Photo 8), no signs of slope instability were observed on the property. The adjoining neighbouring properties were observed to be in good order as seen from the street and subject property.

3. Geology

The Sydney 1:100 000 Geological sheet indicates the site is underlain by Hawkesbury Sandstone, although the Newport Formation of the Narrabeen Group Rocks is shown near the downhill property boundary and at a residential scale the map is always accurate. Ground testing and observations of the slope geomorphology indicate the proposed works are underlain by the Newport Formation of the Narrabeen Group Rocks. This is described as interbedded laminite, shale, and quartz to lithic quartz sandstone.

4. Subsurface Investigation

One hand Auger Hole (AH) was put down to identify the soil materials. Four Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and the depth to weathered rock. The locations of the tests are shown on the site plan attached. It should be noted that a level of caution should be applied when interpreting DCP test results. The test will not pass through hard buried objects so in some instances it can be difficult to determine whether refusal has occurred on an obstruction in the profile or on the natural rock surface. This is not expected to have been an issue for this site. But due to the possibility that the actual ground conditions vary from our interpretation there should be

allowances in the excavation and foundation budget to account for this. We refer to the appended "Important Information about Your Report" to further clarify. The results are as follows:

AUGER HOLE 1 (~RL41.6) – AH1 (Photo 8)

Depth (m)	Material Encountered
0.0 to 0.4	FILL , soil and clay, dark brown, orange, dry, fine to course grained.
0.4 to 0.8	TOPSOIL , sandy soil, dark brown, dry to moist, fine to medium grained with fine trace organic matter.
0.8 to 0.9	CLAY , light orange brown, stiff, moist.

End of Test @ 0.9m in stiff clay. No water table encountered.

DCP TEST RESULTS – Dynamic Cone Penetrometer				
Equipment: 9kg hammer, 510mm drop, conical tip.			Standard: AS1289.6.3.2 -1997	
Depth(m) Blows/0.3m	DCP 1 (~RL46.0)	DCP 2 (~RL44.8)	DCP 3 (~RL43.8)	DCP 4 (~RL41.6)
0.0 to 0.3	7	6	7	12
0.3 to 0.6	15	32	10	17
0.6 to 0.9	11	11	18	17
0.9 to 1.2	#	#	20	16
1.2 to 1.5			17	38
1.5 to 1.8			29	#
1.8 to 2.1			36	
2.1 to 2.4			#	
	Refusal on Rock @ 0.8m	Refusal on Rock @ 0.7m	End of Test @ 2.1m	End of Test @ 1.5m

#refusal/end of test. F=DCP fell after being struck showing little resistance through all or part of the interval.

DCP Notes:

DCP1 – Refusal on Rock @ 0.8m, DCP bouncing off rock surface, white and orange rock fragments and dark brown soil on damp tip.

DCP2 – Refusal on Rock @ 0.7m, DCP bouncing off rock surface, white and orange rock fragments and dark brown soil on wet tip.

DCP3 – End of Test @ 2.1m, DCP still very slowly going down, brown orange impact dust and dark brown soil on wet tip.

DCP4 – End of Test @ 1.5m, DCP still very slowly going down, orange rock fragments and dark brown soil on damp tip.

5. Geological Observations/Interpretation

The slope materials are colluvial at the near surface and residual at depth. In the test locations, the ground materials consist of fill and a thin sandy topsoil over firm to stiff clays. Fill to a maximum depth of ~1.5m provides level platforms for lawn and garden areas across the property. In the test locations, the clays merge into the weathered zone of the under lying rocks at depths of between ~0.7m to ~1.8m below the current surface, being deeper in the filled areas (DCP3 & 4). The weathered zone of the underlying rock is interpreted as Extremely Low to Low Strength Rock. It is to be noted that this material is a soft rock and can appear as a mottled stiff clay when it is cut up by excavation equipment. See Type Section attached for a diagrammatical representation of the expected ground materials.

6. Groundwater

Ground water seepage is expected to move over the denser layers in the profile including the surface of the natural clay buried under the fill/topsoil and the buried surface of the weathered rock under the clay.

Due to the slope and elevation of the block, the water table in the location is expected to be many metres below the base of the proposed works.

7. Surface Water

No evidence of surface flows were observed on the property during the inspection. It is expected that normal sheet wash will move onto the site from above the property during heavy down pours. If the owners know, or become aware in the future, that overland flows enter the property during heavy prolonged rainfall events our office is to be informed so

appropriate drainage measures can be recommended and installed. It is a condition of the slope stability assessment in Section 8 (**Hazard One**) that this be done.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed beside the property. The moderately graded slope that rises across the property and continues above and below is a potential hazard (**Hazard One**).

Geotechnical Hazards and Risk Analysis - Risk Analysis Summary

HAZARDS	Hazard One
TYPE	The moderate slope that rises across the property and continues above and below mass failing and impacting on the property.
LIKELIHOOD	'Unlikely' (10^{-4})
CONSEQUENCES TO PROPERTY	'Medium' (12%)
RISK TO PROPERTY	'Low' (2×10^{-5})
RISK TO LIFE	4.2×10^{-7} /annum
COMMENTS	This level of risk is 'ACCEPTABLE', provided the recommendations in Section 7 are carried out.

(See Aust. Geomech. Jnl. Mar 2007 Vol. 42 No 1, for full explanation of terms)

9. Suitability of the Proposed Development for the Site

The proposed development is suitable for the site. No geotechnical hazards will be created by the completion of the proposed development provided it is carried out in accordance with the requirements of this report and good engineering and building practice.

10. Stormwater

The fall is to Dolphin Crescent. All stormwater from the proposed development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

11. Excavations

Apart from those for footings and possible minor levelling, no excavations are required.

12. Foundations

The proposed additions are to be supported on piers taken to and embedded no less than 0.6m into Extremely Low Strength Rock or better from the downhill edge of the footing. This ground material is expected at depths of between ~0.7m to ~1.8m below the current surface. A maximum allowable bearing pressure of 600kPa can be assumed for piers embedded in Extremely Low Strength Rock or better. It should be noted that this material is a soft rock and a rock auger will cut through it so the builders should not be looking for refusal to end the footings.

The foundations supporting the existing house are currently unknown. Ideally, footings should be founded on the same footing material across the structure. Where the footing material does change across the structure construction joints or similar are to be installed to prevent differential settlement, where the structure cannot tolerate such movement in accordance with a 'Class M' site.

As the bearing capacity of weathered rock reduces when it is wet we recommend the footings be dug, inspected and poured in quick succession (ideally the same day if possible). If the footings get wet, they will have to be drained and the soft layer of weathered rock on the footing surface will have to be removed before concrete is poured.

If a rapid turnaround from footing excavation to the concrete pour is not possible a sealing layer of concrete may be added to the footing surface after it has been cleaned.

NOTE: If the contractor is unsure of the footing material required it is more cost effective to get the geotechnical professional on site at the start of the footing excavation to advise on footing depth and material. This mostly prevents unnecessary over excavation in clay like shaly rock but can be valuable in all types of geology.

13. Ongoing Maintenance

The tilting timber retaining walls (Photo 8) are to be monitored by the owners on an annual basis or after heavy and prolonged rainfall events, whichever occurs first. A photographic record of these inspections is to be kept. Should further movement occur the walls are to be remediated or rebuilt so that they meet current engineering standards. We can carry out these inspections upon request.

14. Geotechnical Review

The structural plans are to be checked and certified by the geotechnical engineer as being in accordance with the geotechnical recommendations. On completion, a Form 2B will be issued. This form is required for the Construction Certificate to proceed.

15. Inspection

The client and builder are to familiarise themselves with the following required inspection as well as council geotechnical policy. We cannot provide geotechnical certification for the Occupation Certificate if the following inspection has not been carried out during the construction process.

- All footings are to be inspected and approved by the geotechnical consultant while the excavation equipment and contractors are still onsite and before steel reinforcing is placed or concrete is poured.

White Geotechnical Group Pty Ltd.



Dion Sheldon
BEng(Civil)(Hons),
Geotechnical Engineer.

Reviewed By:



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



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10: AH1 – Downhole is from left to right.

Important Information about Your Report

It should be noted that Geotechnical Reports are documents that build a picture of the subsurface conditions from the observation of surface features and testing carried out at specific points on the site. The spacing and location of the test points can be limited by the location of existing structures on the site or by budget and time constraints of the client. Additionally, the test themselves, although chosen for their suitability for the particular project, have their own limiting factors. The testing gives accurate information at the location of the test, within the confines of the test's capability. A geological interpretation or model is developed by joining these test points using all available data and drawing on previous experience of the geotechnical consultant. Even the most experienced practitioners cannot determine every possible feature or change that may lie below the earth. All of the subsurface features can only be known when they are revealed by excavation. As such, a Geotechnical report can be considered an interpretive document. It is based on factual data but also on opinion and judgement that comes with a level of uncertainty. This information is provided to help explain the nature and limitations of your report.

With this in mind, the following points are to be noted:

- If upon the commencement of the works the subsurface ground or ground water conditions prove different from those described in this report, it is advisable to contact White Geotechnical Group immediately, as problems relating to the ground works phase of construction are far easier and less costly to overcome if they are addressed early.
- If this report is used by other professionals during the design or construction process, any questions should be directed to White Geotechnical Group as only we understand the full methodology behind the report's conclusions.
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.
- This report should not be applied to any other project other than that outlined in section 1.0.
- This report is to be read in full and should not have sections removed or included in other documents as this can result in misinterpretation of the data by others.
- It is common for the design and construction process to be adapted as it progresses (sometimes to suit the previous experience of the contractors involved). If alternative design and construction processes are required to those described in this report, contact White Geotechnical Group. We are familiar with a variety of techniques to reduce risk and can advise if your proposed methods are suitable for the site conditions.

SURVEY PLAN – showing test locations

LEGEND

AWN - AWNING
 DECK - DECK LEVEL
 BALC - BALCONY LEVEL
 CHM - CHIMNEY LEVEL
 CL - ROAD CENTER LINE LEVEL
 CONC - CONCRETE SURFACE LEVEL
 DECK - DECK LEVEL
 ELEC - ELECTRICAL PIT
 ELEC - ELECTRICAL SUBSTATION
 TRIT - TELECOMMUNICATION PIT
 FENCE - FENCE TOP LEVEL
 FLR - FLOOR LEVEL
 GAS - GAS METER
 GATE - GATE
 GDN - GARDEN LEVEL
 GRATE - GRATED PIT LEVEL
 GRV - GRAVEL LEVEL
 HC - HOUSE CONNECTION
 HYD - HYDRANT
 IC - INSPECTION CAP
 KT - TOP OF KERB LEVEL
 KI - KERB INVERT LEVEL
 LP - LIGHT POLE
 LIGHT - SKYLIGHT LEVEL
 OPT - OPTUS PIT LEVEL
 PAV - PAVING LEVEL
 PIT - PIT SURFACE LEVEL
 POOL - POOL LEVEL
 RWT - RAIN WATER TANK
 ROOF - ROOF LEVEL
 ROCK - ROCK LEVEL
 SIC - SEWER INSPECTION CAP
 SKYL - SKYLIGHT LEVEL
 SPHT - SPOT HEIGHT
 STEP - STEP LEVEL
 GUT - TOP OF GUTTER
 TILE - TILED LEVEL
 TOW - TOP OF WALL
 TRIT - TELSTRA PIT
 WALL - WALL LEVEL (TOW - TOP OF WALL)
 BOW - BOTTOM OF WALL
 WM - WATER METER

TR0.2/5.0 - TREE (TRUNK DIA 0.2m, SPREAD 5m, HEIGHT 5m) DIMENSIONS ARE APPROXIMATE

WINDOW

TW - WINDOW TOP
 BW - WINDOW BOTTOM

DOOR

TD - DOOR TOP
 BD - DOOR BOTTOM

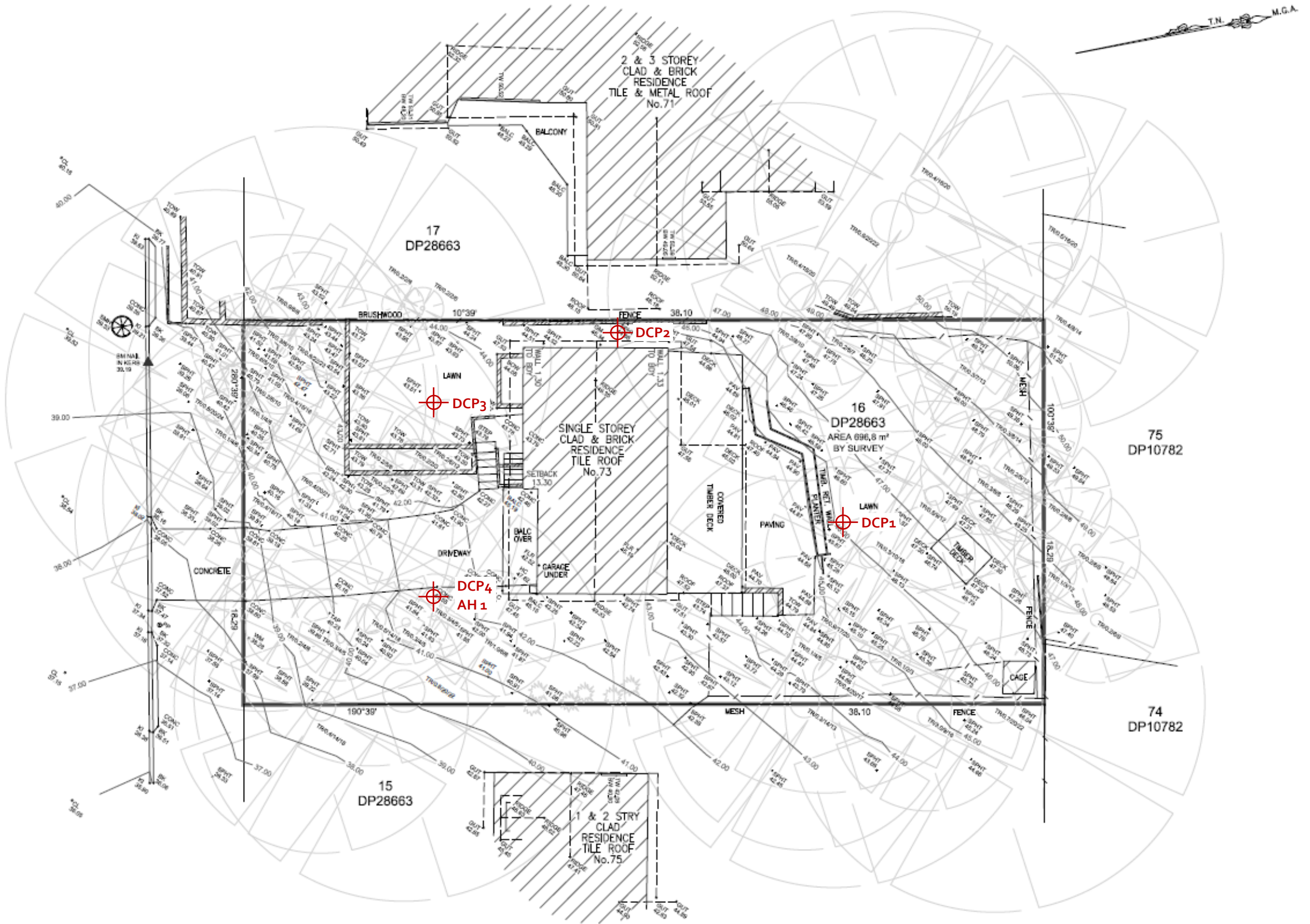
CONTOUR INTERVAL - 1.0m

NOTES:

1. A BOUNDARY SURVEY (BOUNDARY IDENTIFICATION) HAS BEEN UNDERTAKEN WITH BOUNDARIES DEFINED UTILISING DP18663 BOUNDARY DIMENSIONS. CAN MOVE TO A DEGREE WITH THE LODGEMENT OF A PLAN AT THE TITLES OFFICE OF THE SUBJECT LOT OR OF A LOT IN THE VICINITY.
2. DIMENSIONED STRUCTURES ARE IN RELATION TO THIS BOUNDARY SURVEY.
3. ORIGIN OF LEVELS PM40336 RL: 12.0m (A.M.D. - CLASS U) SEARCH DATED 05/10/2022.
4. BEARINGS ARE ON MGA GRID NORTH.
5. RELATIONSHIP OF OTHER IMPROVEMENTS, DETAIL AND ADJOINING BUILDINGS TO THE BOUNDARY, IF CRITICAL, WILL REQUIRE FURTHER SURVEY. IF ANY FENCING OR BUILDING NEAR THE SUBJECT BOUNDARIES IT IS RECOMMENDED THAT THE BOUNDARIES BE PHYSICALLY MARKED BY A REGISTERED SURVEYOR.
6. SERVICES SHOWN ARE BASED ON VISIBLE SURFACE INDICATORS EVIDENT AT THE DATE OF SURVEY ONLY. DIAL BEFORE YOU DIG AND ALL SERVICE AUTHORITIES SHOULD BE CONTACTED PRIOR TO ANY DEVELOPMENT.
7. ROOF AND EAVE & GUTTER HEIGHTS HAVE BEEN OBTAINED BY AN INDIRECT METHOD AND ARE ACCURATE FOR PLANNING PURPOSES ONLY.
8. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN PLOTTED FOR DIAGRAMMATIC PURPOSES ONLY AND SPECIFIC DETAILS, IF CRITICAL, WILL REQUIRE FURTHER SURVEY.
9. THE DIAMETER OF TREE TRUNKS CONTAINED WITHIN TREE SYMBOLS ARE NOT TO SCALE AND ARE INDICATIVE ONLY.
10. A COVENANT IS NOTED ON TITLE (DEALING G919832).

DOLPHIN

CRESCENT



WALL TO BOUNDARIES AS SHOWN IN RED

Andrew Korompay

ANDREW KOROMPAY ID No. SU000114
 Surveyor Registered under The Surveying Act, 2002.

REVISION	BY	REVISION DESCRIPTION	DATE
0	AK	INITIAL ISSUE	4/11/2022

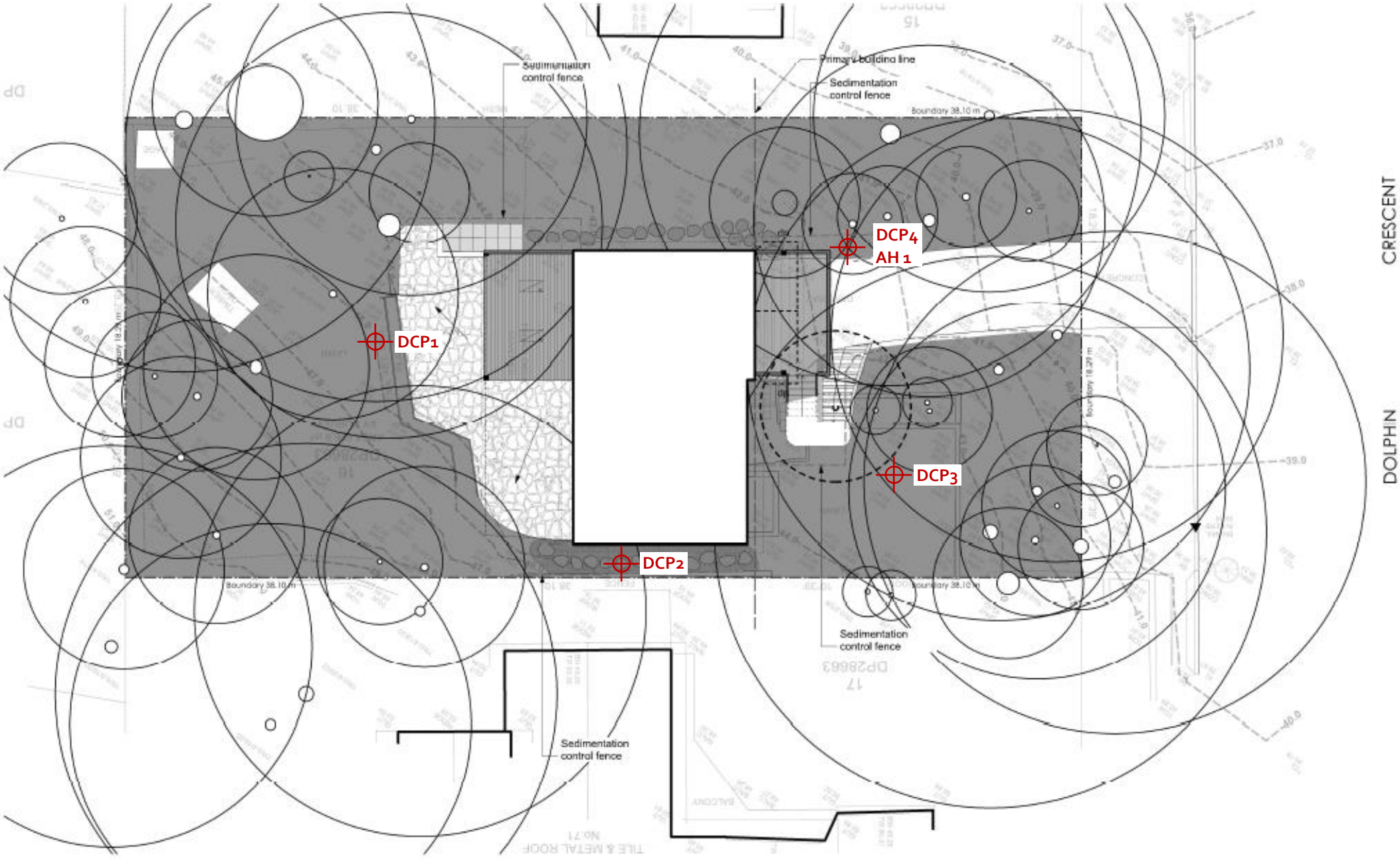
PLAN OF DETAIL OVER No. 73 DOLPHIN CRES AVALON BEACH, NSW, 2107



TRUENORTH SURVEY GROUP
 A.B.N. 97 106 447 198
 Registered Consulting Surveyors
 16/9 Narabang Way
 Belrose NSW 2085
 Tel: (02) 9450 0868
 Mob: (0412) 353 784
 Email: andrew@truenorthsurveys.com.au

SCALE: 1:100 @ A1 : 1:200 @ A3	DATE: 04/11/2022
CLIENT: JONATHAN GOODALL	DATUM: AGD
JOB No. 2610	
DRAWN	CHECKED
LP	AK
DRAWING No. 2610	REVISION 0

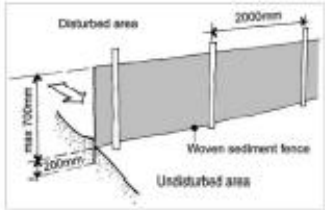
SITE PLAN – showing test locations



Legend

- MULCH AREA
- TURF AREA
- TIMBER DECKING
- CONCRETE PAVING
- LINE PAVING
- STAIRS
- PEBBLE
- GRAVEL
- COBBLESTONE
- TIMBER
- WATER
- MASONRY RETAINING WALL
- STONE RETAINING WALL
- TIMBER RETAINING WALL
- BOULDER RETAINING WALL
- SITE OR WORKS BOUNDARY
- PROPOSED LEVEL
- TOP OF WALL LEVEL
- MATERIAL NAME
- SURFACE FALL DIRECTION
- SURFACE DRAINS
- GRAVEY (GRAVEY) MAP
- EXISTING TREE TO RETAIN
- EXISTING TREE TO REMOVE
- EXISTING ROCK OUTCROP

AREA CALCULATION		
	AREA (m2)	PERCENTAGE
Site	696.8	
Landscape total	478.47	68.67%



Sedimentation Control Fence
Not to scale.
Source: www.yourhome.gov.au

Notes:
• Do not scale off plan.
• Contractors to check all measurements onsite before quoting or commencing work.
• If abnormalities arise, contact the Landscape Architect.
• This design is copyright and is not to be reproduced in any way without written consent of Jamie King Landscape Architect.

ISSUE	DATE	REVISION
E	17/04/23	for DA
D	09/03/23	DRAFT issue for review.
C	16/02/23	DRAFT issue for review.
B	11/01/23	DRAFT issue for review.
A	25/11/22	DRAFT issue for review.

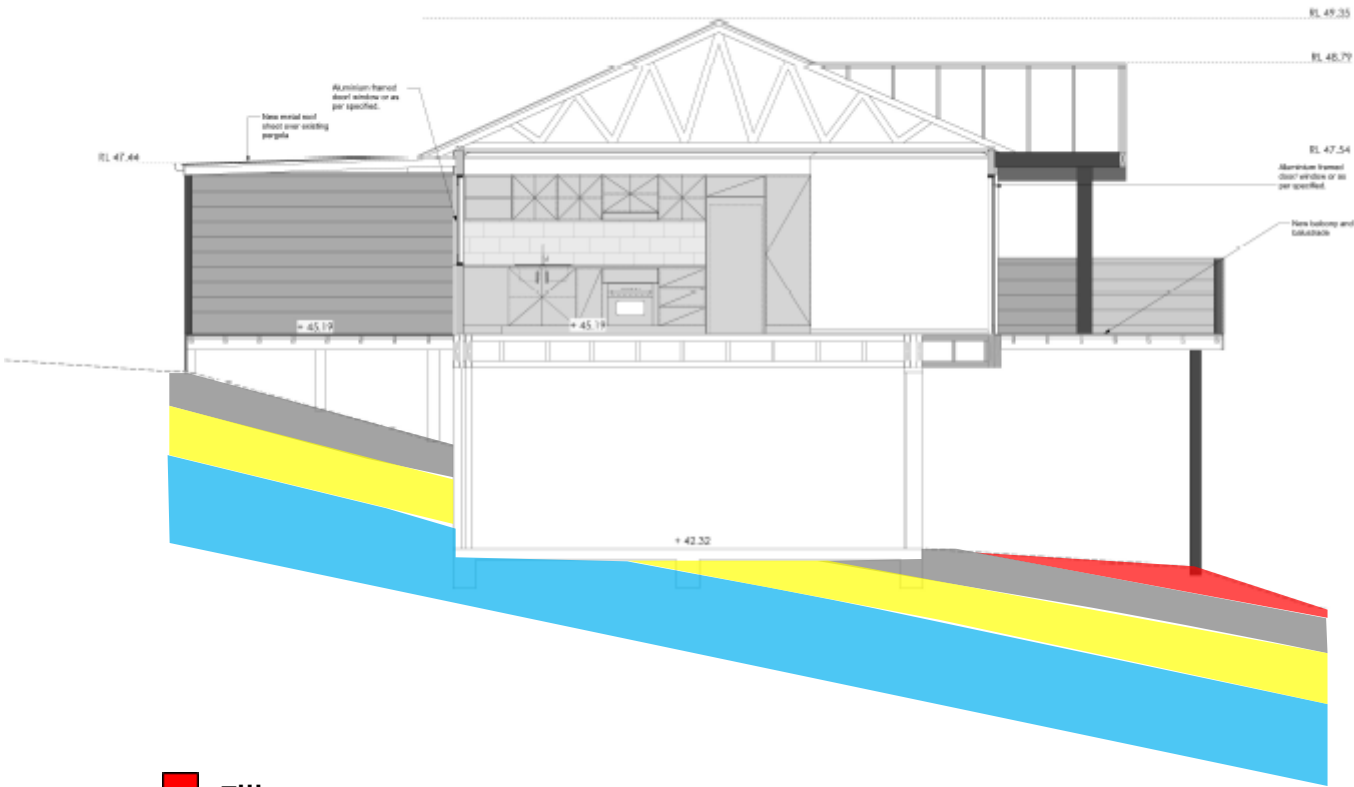


JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE

PROJECT 73 Dolphin Cres, Avalon Beach
CLIENT Jonathon Goodall
DWS Site Plan
DMS JK

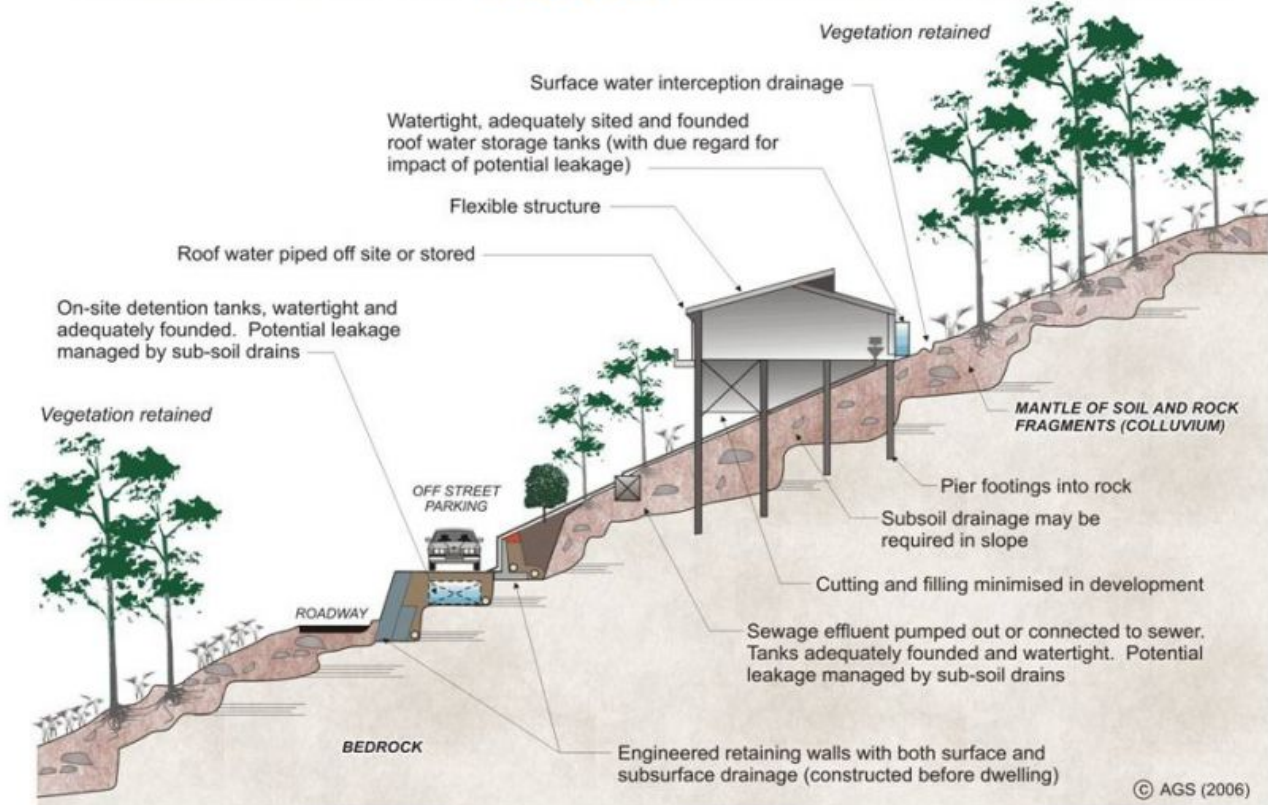
PROJECT# 23040
DATE# See above
SCALE# See Plans
DMS JK
DMS JK

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



- Fill
- Topsoil
- Clay – Firm to Stiff
- Narrabeen Group Rocks – Extremely Low to Low Strength Rock - after being cut up by excavation equipment can resemble a stiff to hard clay.

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE

