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

Development Application for _____
Name of Applicant

Address of site 11 Hilltop Road, 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 4/6/21 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 **11 Hilltop Road, Avalon**
Report Date: 2/6/21

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 11 Hilltop Road, Avalon

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 **11 Hilltop Road, Avalon**

Report Date: 2/6/21

Author: BEN WHITE

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

Please mark appropriate box

☒ Comprehensive site mapping conducted **3/11/20**
(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 **3/11/20**

☒ 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:

New House & Pool at **11 Hilltop Road, Avalon**

1. Proposed Development

1.1 Demolish the existing house and construct a new part three-storey house by excavating to a maximum depth of ~3.6m.

1.2 Install a new pool and gazebo on the uphill side of the property by excavating to a maximum depth of ~4.9m.

1.3 Details of the proposed development are shown on 13 drawings prepared by P.A. Byrne Constructions, drawings numbered A00 to A11 and A20, Revision B, dated 25/4/21.

2. Site Description

2.1 The site was inspected on the 3rd November, 2020.

2.2 This residential property is on the high side of the road and has a NW aspect. It is located on the moderately graded upper middle reaches of a hillslope. From the road frontage to the upper boundary, the slope rises at an average angle of ~15°. The slope above the property eases across the crest of the slope. The slope below the property falls at gradually increasing angles.

2.3 At the road frontage, a concrete driveway runs up the slope to a parking area on the downhill side of the house (Photos 1 & 2). The fill for the parking area is supported by a treated timber retaining wall reaching ~1.3m high (Photo 3). The slope on the uphill side of the house has been terraced with a series of treated timber and stack rock retaining walls (Photo 4). The part two-storey rendered brick and timber framed and clad house will be demolished and the site will be cleared as part of the proposed works (Photo 5).

3. Geology

The Sydney 1:100 000 Geological sheet indicates the site is underlain by the Newport Formation of the Narrabeen Group. This is described as interbedded laminite, shale, and quartz to lithic quartz sandstone.

4. Subsurface Investigation

Five 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 be an issue for the testing on this site. However, excavation and foundation budgets should always allow for the possibility that the interpreted ground conditions in this report vary from those encountered during excavations. See the appended "Important information about your report" for a more comprehensive explanation. The results are as follows:

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** (~RL51.5)	**DCP 2** (~RL51.7)	**DCP 3** (~RL55.0)	**DCP 4** (~RL55.8)	**DCP 5** (~RL56.9)
0.0 to 0.3	7	12	12	3	6
0.3 to 0.6	23	17	23	7	8
0.6 to 0.9	11	#	50	23	14
0.9 to 1.2	14		#	#	#
1.2 to 1.5	37				
1.5 to 1.8	#				
	End of Test @ 1.5m	Refusal on Rock @ 0.4m	End of Test @ 0.9m	Refusal on Rock @ 0.9m	Refusal on Rock @ 0.9m

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

DCP Notes:

DCP1 – End of test @ 1.5m, DCP still very slowly going down, brown shale fragments on dry tip.
DCP2 – Refusal on rock @ 0.4m, DCP bouncing off rock surface, clean dry tip.
DCP3 – End of test @ 0.9m, DCP still very slowly going down, brown shale fragments on dry tip.
DCP4 – Refusal on rock @ 0.9m, DCP bouncing off rock surface, brown clay on wet tip.
DCP5 – Refusal on rock @ 0.9m, DCP bouncing off rock surface, clean dry tip, brown clay in collar above tip.

5. Geological Observations/Interpretation

In the test locations, the ground materials consist of a shallow topsoil over firm to very stiff clays. Filling has been placed on the slope below the house for the parking area. The clays merge into the underlying weathered rock at depths of between 0.4 to 1.5m below the current surface, being deeper where filling has been placed in the location of DCP1. The weathered zone is interpreted to be Extremely Low to Low Strength Rock. The rock is expected to slowly become progressively stronger with depth. Three of the Five DCP tests encountered refusal on the underlying rock. These tests may have encountered some isolated bands of sandstone. The extents of the bands are not known. The only method to prove the extent of the bands is to perform core drilling. Our office can be contacted if core drilling is desired. See Type Section attached for a diagrammatical representation of the expected ground materials.

6. Groundwater

Normal ground water seepage is expected to move over the buried surface of the rock and through the cracks.

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

7. Surface Water

No evidence of surface flows were observed on the property during the inspection. Normal sheet wash will move onto the site from the slope above during heavy down pours.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed beside the property. The moderately graded slope that falls across the property and continues above and below is a potential hazard (**Hazard One**). The vibrations from the proposed excavation are a potential hazard (**Hazard Two**). The proposed excavations are a potential hazard until retaining walls are installed (**Hazard Three**).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	The moderately graded slope that rises across the property is a potential hazard.	The vibrations produced during the proposed excavation impacting on the surrounding structures.	The proposed excavations collapsing onto the work site and impacting the neighbouring properties before retaining walls are in place.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (12%)	'Medium' (15%)	'Medium' (35%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	9.1×10^{-7}/annum	5.3×10^{-7}/annum	8.5×10^{-4}/annum
COMMENTS	This level of risk is 'ACCEPTABLE'.	UNACCEPTABLE' level of risk to life and property. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 12** are to be followed.	UNACCEPTABLE' level of risk to life and property. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 13** are to be followed.

(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 the street. Roof water from the development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

11. Excavations

An excavation to a maximum depth of ~3.6m is required to construct the house. A stepped excavation is required to construct the proposed pool and gazebo. The step for the pool is to be a maximum depth of ~2.4m and the step for the gazebo is to be a maximum depth of ~3.0m with a distance of ~1.1m between the steps. Both excavations are expected to be through a shallow soil over firm to very stiff clays with Extremely Low to Low Strength Rock expected at an average depth of ~0.9m below the current surface. Excavations through sandy soil, clay, and rock up to Low Strength Rock can be carried out with an excavator and bucket. Excavations through Medium Strength Rock or better will require grinding or rock sawing and breaking.

12. Vibrations

Possible vibrations generated during excavations through sandy soil, clay, and rock up to Low Strength Rock will be below the threshold limit for building damage. These ground materials are expected across the upper ~1.0m of the excavations. Ground testing equipment was unable to penetrate the Extremely Low to Low Strength Rock and it is possible Medium Strength Rock or better will be encountered below a depth of 1.0m.

If Medium Strength Rock or better is encountered, excavations through this material should be carried out to minimise the potential to cause vibration damage to the N and S

neighbouring houses. The excavation will be set back ~3.3m from the N neighbouring house, and ~5.4m from the S neighbouring house.

Dilapidation reporting carried out on the N neighbouring property is recommended prior to the excavation works commencing.

Excavation methods are to be used that limit peak particle velocity to 8mm/sec at the property boundaries. Vibration monitoring will be required to verify this is achieved. The Vibration monitoring equipment must include a light/alarm so the operator knows if vibration limits have been exceeded. It also must log and record vibrations throughout the excavation works.

In rock up to Low Strength, we expect a machine up to 20 tonnes with a bucket only will be capable to remove the material. Vibrations from this type of equipment are expected to be below the threshold limit outlined.

In Medium Strength Rock or better, techniques to minimise vibration transmission will be required. These include:

- Rock sawing the excavation perimeter to at least 1.0m deep prior to any rock breaking with hammers, keeping the saw cuts below the rock to be broken throughout the excavation process.
- Limiting rock hammer size.
- Rock hammering in short bursts so vibrations do not amplify.
- Rock breaking with the hammer angled away from the nearby sensitive structures.
- Creating additional saw breaks in the rock where vibration limits are exceeded.

13. Excavation Support Requirements

Bulk Excavation for Proposed House

The excavation for the proposed house will reach a maximum depth of ~3.6m, will be set back ~2.2m from the N common boundary, and ~0.5m from the S commo boundary. The S neighbouring driveway runs flush against the S common boundary. The neighbouring house

to the N will be set back ~3.3m from the edge of the excavation. However, the N neighbouring property has been lowered ~1.0m below the subject property, effectively reducing the height of the excavation in this location. Thus, the N neighbouring house will not fall within the zone of influence of the excavation. The S neighbouring property and driveway and the N neighbouring property only will be within the zone of influence. In this instance, the zone of influence is the area above a theoretical 45° line from the base of the excavation or top of Medium Strength Rock (whichever is encountered first) through the Low Strength Rock and clay towards the surrounding boundaries or structures. This line reduces to 30° through the sandy soil.

To ensure the integrity of the S neighbouring driveway and both neighbouring properties and due to the depth of the proposed excavation, ground support will need to be installed along the N, S, and uphill sides of the excavation with the support installed before the excavation commences. Spaced piers to form a spaced pier retaining wall are one of the suitable methods of support. Pier spacing is typically ~2.0m but can vary between 1.6 to 2.4m depending on the design. The piers can be supported by embedment or propping installed as the excavation is lowered. To drill the pier holes for the wall, a small pilling rig that can excavate through Medium Strength Rock will be required. If a machine of this type is not available, we recommend carrying out core drilling before the construction commences to confirm the strength of the rock and to ensure the excavation equipment is capable of reaching the required depths. As the excavation is lowered in 1.5m lifts, infill sprayed concrete panels or similar are added between the piers to form the wall. Drainage is installed behind the panels. The walls are to be tied into the concrete floor and ceiling slabs to provide permanent bracing after which any temporary support can be released. If the piled wall cannot be braced off proposed structures it is recommended permanent lateral support be provided by rock anchors.

Bulk Excavation for Proposed Pool and Gazebo

The stepped excavation for the proposed pool and gazebo will reach a maximum depth of ~4.9m and will be set back ~2.8m from the N common boundary. No structures on the N neighbouring property will be within the zone of influence of the excavation. Thus, only the N neighbouring property will be within the zone of influence of the proposed excavation.

Due to the depth of the excavation and its proximity to the N common boundary, we recommend heavy ground support be installed prior to the commencement of the excavation to ensure the safety of any workers below the cut and integrity of the N neighbouring property. As the excavation will be stepped, the upper stepped portion will need to be piled around the N, S, and uphill sides of the excavation. The support for the upper cut will need to be installed before the excavation commences following the advice above for the piered retaining wall. To get adequate lateral support for embedded piles, the pool excavation immediately below will need to be accounted for in the design and construction. Any embedment depth calculations should only consider passive pressures from below the zone of influence of the pool excavation.

The lower step of the excavation (the pool excavation) will stand at near-vertical angles for a short period of time until the pool structure is installed provided the cut batters are kept from becoming saturated. If the cut batters remain unsupported for more than a day before the shell is constructed, they are to be supported with typical pool shoring such as braced sacrificial form ply, until the pool structure is in place.

Unsupported cut batters are to be covered to prevent access of water in wet weather and loss of moisture in dry weather. The covers are to be tied down with metal pegs or other suitable fixtures so they can't blow off in a storm. The materials and labour to construct the pool structure are to be organised so on completion of the excavation they can be constructed as soon as possible. The excavation is to be carried out during a dry period. No excavations are to commence if heavy or prolonged rainfall is forecast.

Advice Applying to Both Excavations

- The geotechnical consultant is to inspect the drilling process of the entire first pile and the ground materials at the base of all pier holes/excavations for ground support purposes.
- All excavation spoil is to be removed from site following the current Environmental Protection Agency (EPA) waste classification guidelines.

14. Retaining Structures

For cantilever or singly-propped retaining structures, it is suggested the design be based on a triangular pressure distribution of lateral pressures using the parameters shown in Table 1.

Table 1 – Likely Earth Pressures for Retaining Structures

Unit	Earth Pressure Coefficients			
	Unit weight (kN/m^3)	'Active' K_a	'At Rest' K_0	Passive
Sandy Soil and Residual Clays	20	0.40	0.55	N/A
Rock Up to Low Strength Rock - Jointed	24	0.25	0.35	K_p = 2.5
Medium Strength Rock	24	0.00	0.10	2.0MPa "Ultimate"

For rock classes refer to Pells et al "Design Loadings for Foundations on Shale and Sandstone in the Sydney Region". Australian Geomechanics Journal 1978.

It is to be noted that the earth pressures in Table 1 assume a level surface above the structure, do not account for any surcharge loads and assume retaining structures are fully drained. It should be noted that passive pressure is an ultimate value and should have an appropriate safety factor applied. No passive resistance should be assumed for the top 0.4m to account

for any disturbance from the excavation. Rock strength and relevant earth pressure coefficients are to be confirmed on site by the geotechnical consultant.

All retaining structures are to have sufficient back-wall drainage and be backfilled immediately behind the structure with free-draining material (such as gravel). This material is to be wrapped in a non-woven Geotextile fabric (i.e. Bidim A34 or similar), to prevent the drainage from becoming clogged with silt and clay. If no back-wall drainage is installed in retaining structures, the likely hydrostatic pressures are to be accounted for in the structural design.

15. Foundations

A raft or thickened concrete slab and piers supported on the underlying Extremely Low to Low Strength Rock are suitable footings for the proposed house and gazebo. This ground material is expected to be exposed across the majority of the bases of the proposed excavations. A maximum allowable pressure of 600kPa can be assumed for Extremely Low to Low Strength Rock.

The proposed pool is expected to be seated in the Extremely Low to Low Strength Rock. This is a suitable foundation material.

As the bearing capacity of clay and shale 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 wet clay or shale 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 consultant 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.

16. Inspections

The client and builder are to familiarise themselves with the following required inspections as well as council geotechnical policy. We cannot provide certification for the regulating authorities or the owner if the following inspections have not been carried out during the construction process.

- The geotechnical professional is to inspect the drilling process of the entire first pile of the retaining walls and the ground materials at the base of all the piers before any concrete is placed.

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

White Geotechnical Group Pty Ltd.

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

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

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.

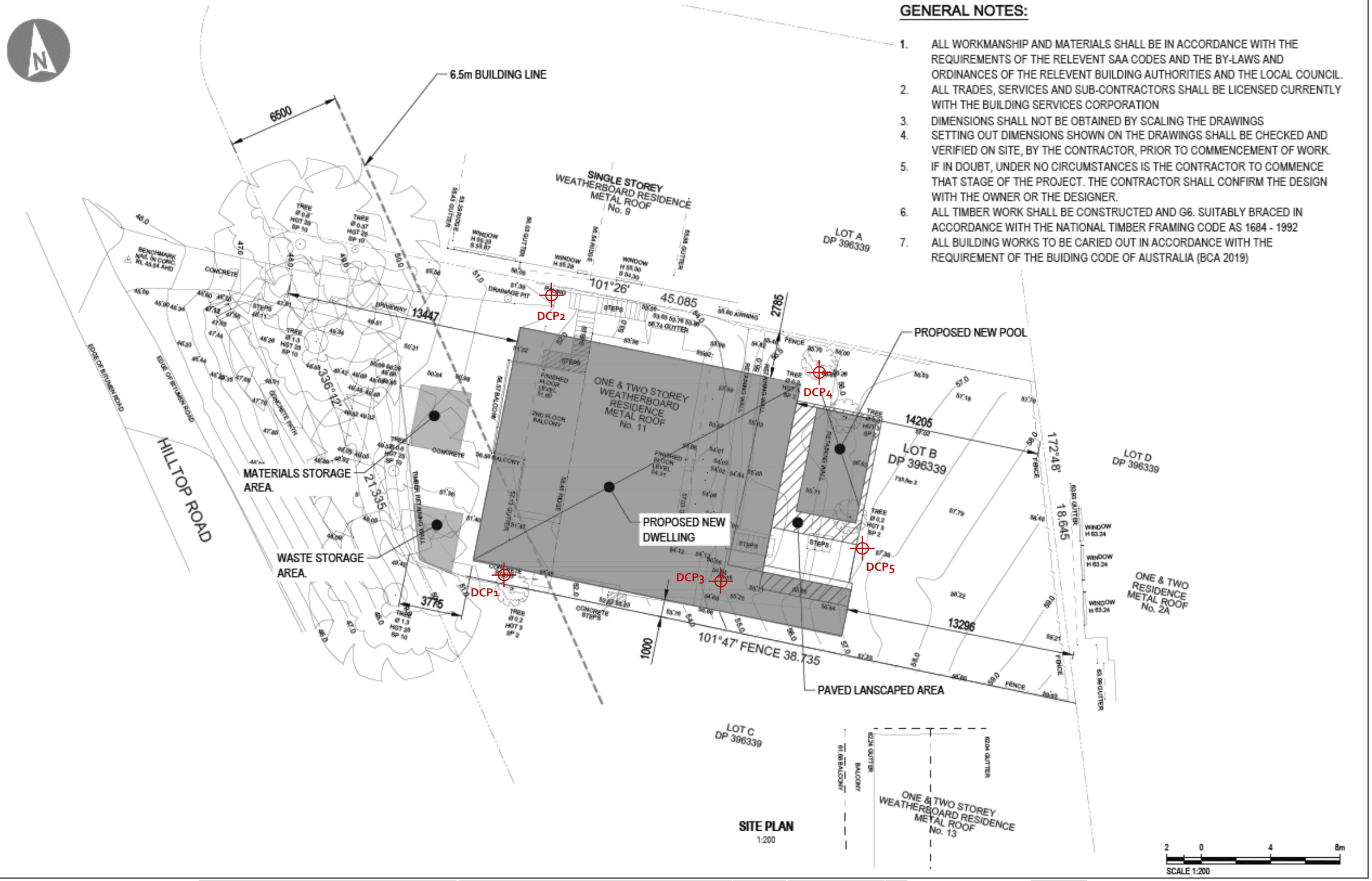
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.

- 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.

SITE PLAN – showing test locations



GENERAL NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVENT SAA CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVENT BUILDING AUTHORITIES AND THE LOCAL COUNCIL.
2. ALL TRADES, SERVICES AND SUB-CONTRACTORS SHALL BE LICENSED CURRENTLY WITH THE BUILDING SERVICES CORPORATION
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS
4. SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED AND VERIFIED ON SITE, BY THE CONTRACTOR, PRIOR TO COMMENCEMENT OF WORK.
5. IF IN DOUBT, UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO COMMENCE THAT STAGE OF THE PROJECT. THE CONTRACTOR SHALL CONFIRM THE DESIGN WITH THE OWNER OR THE DESIGNER.
6. ALL TIMBER WORK SHALL BE CONSTRUCTED AND G6. SUITABLY BRACED IN ACCORDANCE WITH THE NATIONAL TIMBER FRAMING CODE AS 1684 - 1992
7. ALL BUILDING WORKS TO BE CARIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF THE BUIDING CODE OF AUSTRALIA (BCA 2019)

P.A.BYRNE CONSTRUCTIONS

SIOBHAN & SHAWN TRANTER

REV	DATE	REVISION DETAILS
A	10.11.2020	FINAL DESIGN
B	25.04.2021	REVISED PLAN

APPROVED

SCALE: AS SHOWN | SIZE: A3

DRAWN: ARTS

DESIGNED

CHECKED

FINAL DESIGN

APPROVED

DATE

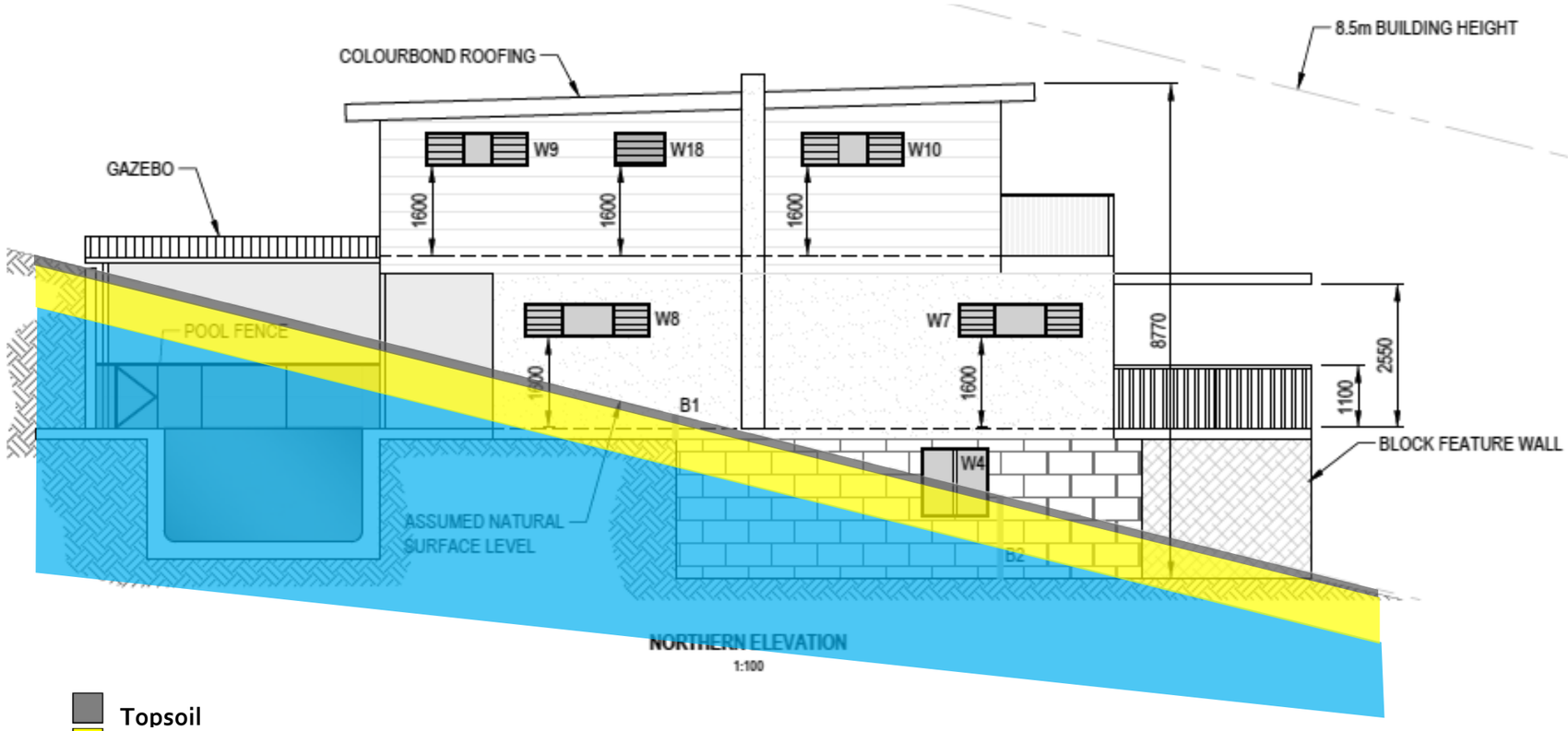
PROJECT: PROPOSED DWELLING 11 HILL TOP ROAD, AVALON

TITLE: SITE PLAN SITE PLAN & NOTES

DRAWING No. HT A01 – B

Plot Date: 26/5/2021 9:41:52 PM Office: AUSYD Filename: D:\PERSONAL\ASH-PJ\PHIL-BAYBE\ACH-HILLTOP\W01\HTA.DWG

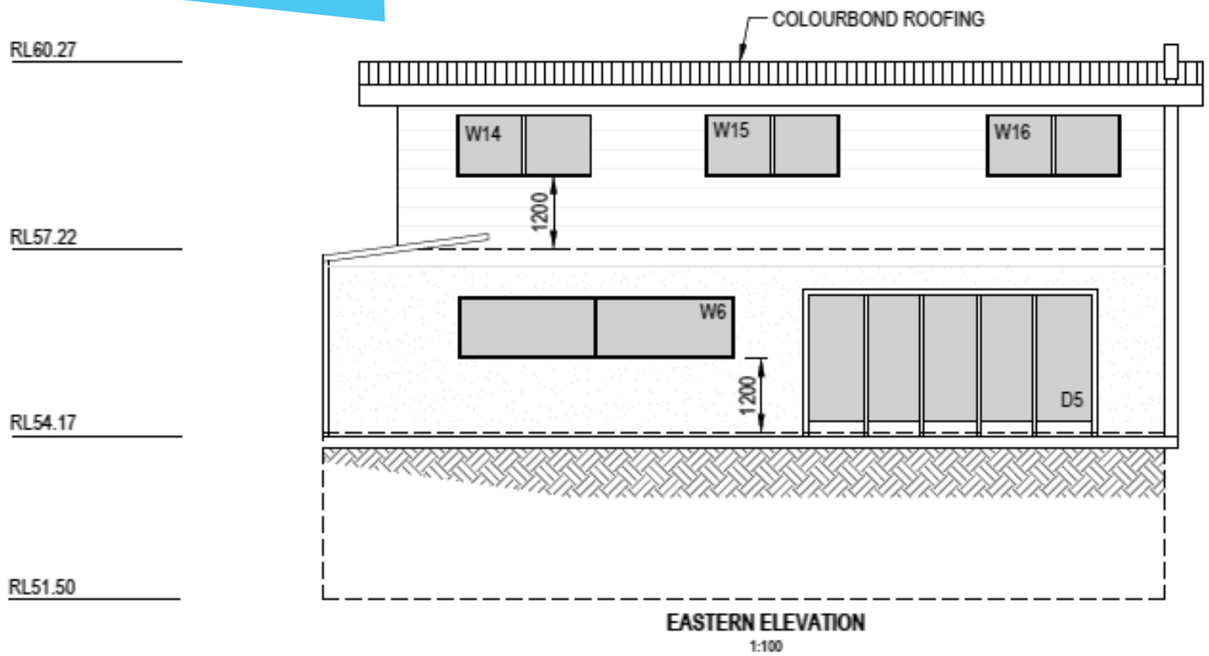
TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



Topsoil

Silty 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.



1 0 2 4m

SCALE 1:100

CLIENT	REV	DATE	REVISION DETAILS	APPROVED
P.A.BYRNE CONSTRUCTIONS	A	14.12.2020	FINAL DESIGN	
SIOBHAN & SHAWN TRANTER	B	25.04.2021	REVISED PLAN	

SCALE	SIZE
AS SHOWN	A3

DRAWN: ART5

DESIGNED:

CHECKED:

APPROVED:

DATE:

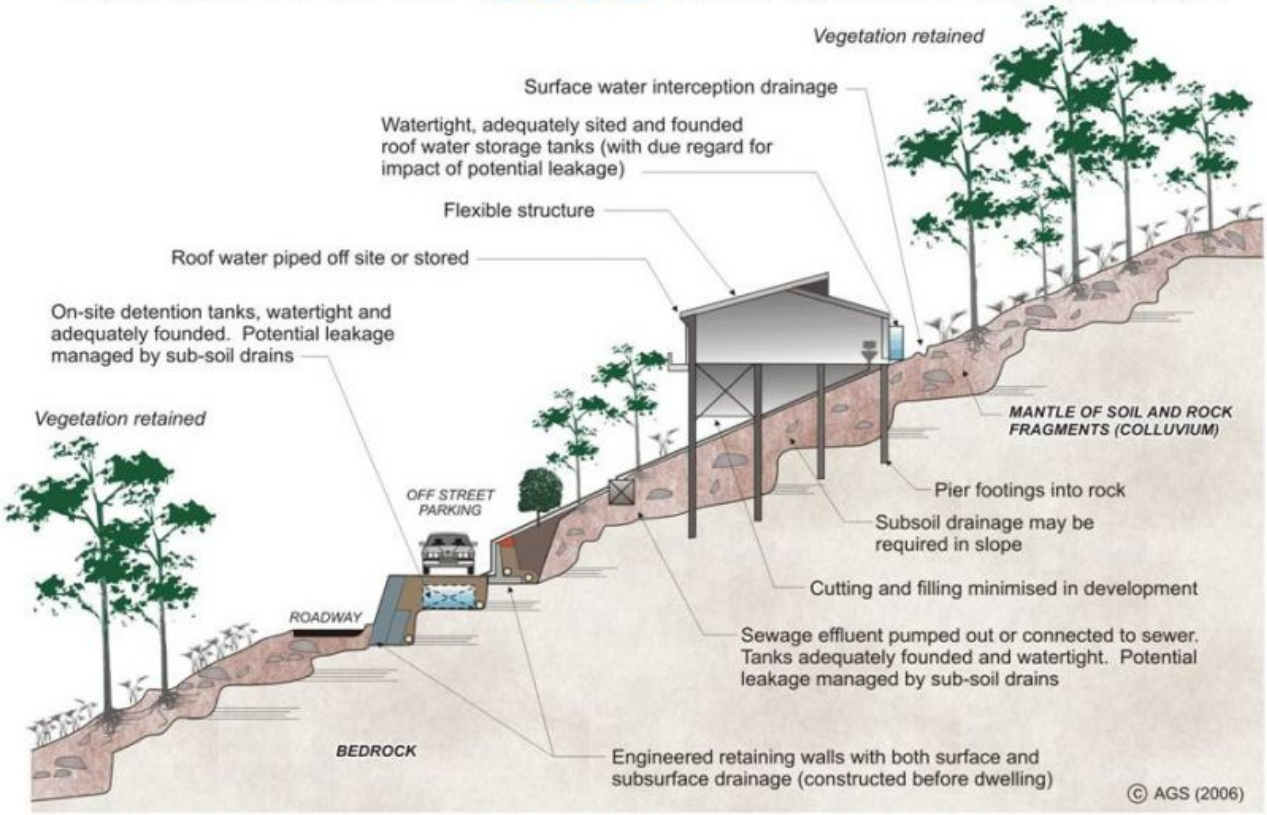
FINAL DESIGN

PROJECT: PROPOSED DWELLING
11 HILL TOP ROAD, AVALON

TITLE: ELEVATIONS
SHEET 1

DRAWING No.	PROJECT No.	NUMBER	REV
	HT	A05	- B

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE