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

Development Application for _____
Name of Applicant

Address of site 25 York Terrace, Bilgola Plateau

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 23/1/23 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 **25 York Terrace, Bilgola Plateau**
Report Date: 23/1/23

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 25 York Terrace, Bilgola Plateau

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 **25 York Terrace, Bilgola Plateau**

Report Date: 23/1/23

Author: BEN WHITE

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

Please mark appropriate box

- ☒ Comprehensive site mapping conducted **11/1/23** (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 **11/1/23**
- ☒ 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:

New House and Pool at **25 York Terrace, Bilgola Plateau**

1. Proposed Development

1.1 Demolish the existing house and garage and construct a new part two-storey house.

1.2 Construct a new carport on the E side of the property by excavating to a maximum depth of ~2.1m into the slope.

1.3 Install a new pool on the W side of the property by excavating to a maximum depth of ~1.1m.

1.4 Details of the proposed development are shown on 14 drawings prepared by Blue Sky Building Designs, Project number 2022-004, drawings numbered A100 to A113, dated 9/1/2023.

2. Site Description

2.1 The site was inspected on the 11th January, 2023.

2.2 This residential property is on the high side of the road and encompasses the crest and flanks of a N-S trending ridge. The slopes below the property gradually increase in grade.

2.3 At the road frontage, a concrete driveway runs up and across the slope to a carport attached to the S side of the house and to a free-standing garage on the W side of the property (Photos 1 & 2). The slope between the road frontage and the house is terraced with a series of low stable retaining walls. A gently sloping lawn extends off the W side of the house to the W common boundary (Photo 3). The house,

garage, and any landscaping across the property will be demolished as part of the proposed works.

3. Geology

The Sydney 1:100 000 Geological sheet indicates the site is underlain by Hawkesbury Sandstone. It is described as a medium to coarse grained quartz sandstone with very minor shale and laminite lenses.

4. Subsurface Investigation

One hand Auger Hole (AH) was put down to identify the soil materials. Five Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and the depth to bedrock. 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:

AUGER HOLE 1 (~RL144.0) **–** AH1 (Photo 4)

Depth (m)	**Material Encountered**
0.0 to 0.3	**FILL**, disturbed gravelly soil, dark brown, medium dense, dry, fine to coarse grained, with fine trace organic matter.
0.3 to 0.6	**SANDY CLAY**, dark orange, stiff, dry, fine to medium grained with fine trace organic matter.

Refusal @ 0.6m. Auger grinding on buried rock surface. 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** (~RL143.2)	**DCP 2** (~RL143.7)	**DCP 3** (~RL144.0)	**DCP 4** (~RL143.8)	**DCP 5** (~RL144.0)
0.0 to 0.3	4	3	2	3	7
0.3 to 0.6	7	4	4	10	14
0.6 to 0.9	30	4	4	#	9
0.9 to 1.2	#	35	12		#
1.2 to 1.5		41	23		
1.5 to 1.8		#	21		
1.8 to 2.1			17		
2.1 to 2.4			21		
2.4 to 2.7			18		
2.7 to 3.0			20		
3.0 to 3.3			30		
3.3 to 3.6			#		
	Refusal on Rock @ 0.8m	End of Test @ 1.4m	End of Test @ 3.3m	Refusal on Rock @ 0.6m	Refusal on Rock @ 0.7m

#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 thudding, orange sandstone fragments on dry tip.
DCP2 – End of test @ 1.4m, DCP still very slowly going down, maroon clay fragments on dry tip, maroon clay in collar above tip.
DCP3 – End of test @ 3.3m, DCP still very slowly going down into possible joint, maroon clay fragments on dry tip, maroon clay in collar above tip, maroon clay streaking up rod.
DCP4 – Refusal on rock @ 0.6m, DCP bouncing off rock surface, orange and maroon sandstone on dry tip.
DCP5 – Refusal on rock @ 0.7m, DCP bouncing off rock surface, orange and maroon sandstone on dry tip.

5. Geological Observations/Interpretation

The surface features of the block are controlled by the underlying sandstone bedrock that steps up the property forming sub-horizontal benches between the steps. Where the grade is steeper, the steps are larger and the benches narrower. Where the slope eases, the opposite is true. Where the rock is not exposed, it is overlain by a thin sandy soil over sandy clays that fill the bench step formation. In the test locations, the depth to rock ranged between 0.6 to 1.4m below the current surface, being slightly deeper due to the stepped nature of the underlying bedrock. DCP3 was most likely taken through a joint in the rock as it reached a much greater depth than the other tests. The sandstone underlying the property is estimated to be Medium Strength or better as most of the DCP tests encountered refusal at the end of the tests. A similar strength rock is expected to underlie the entire site. 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 excavations.

7. Surface Water

No evidence of surface flows were observed on the property during the inspection. As the property encompasses the crest of the hill, any surface flows will be generated on the property and will flow away from the property.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed above or beside the property. The gently graded slope that rises across the property and continues below at increasing angles is a potential hazard (**Hazard One**). The vibrations from the proposed excavations are a potential hazard (**Hazard Two**). A loose boulder, wedge, or similar geological defect toppling onto the work site during the excavation process is a potential hazard (**Hazard Three**).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	The gentle slope that rises across the site and continues below at increasing angles failing and impacting on the proposed works.	The vibrations produced during the proposed excavations impacting on the surrounding structures.	A loose boulder, wedge, or similar geological defect toppling onto the work site during the excavation process.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (12%)	'Medium' (15%)	'Medium' (20%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	5.5×10^{-7}/annum	5.3×10^{-7}/annum	4.3×10^{-5}/annum
COMMENTS	This level of risk is 'ACCEPTABLE'.	This level of risk to property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 12** are to be followed.	This level of risk to life and property is 'UNACCEPTABLE'. 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 York Terrace below. Roof water 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

An excavation to a maximum depth of ~2.1m is required to construct the proposed carport. The excavation is expected to be through a shallow sandy soil and stiff sandy clay with Medium Strength Sandstone expected at a maximum depth of ~0.7m below the current surface.

Another excavation to a maximum depth of ~1.1m is required to install the proposed pool. This excavation is expected to be taken through a shallow sandy soil and stiff sandy clay. Medium Strength Sandstone may be encountered near the base of the proposed excavation.

It is envisaged that excavations through sandy soil and sandy clays can be carried out with an excavator and toothed bucket and excavations through rock will require grinding or rock sawing and breaking.

12. Vibrations

Possible vibrations generated during excavations through sandy soils and sandy clays will be below the threshold limit for building damage.

The majority of the excavation for the proposed carport is expected to be taken through Medium Strength Sandstone or better. Excavations through rock should be carried out to minimise the potential to cause vibration damage to the N neighbouring house. Allowing for back-wall drainage, the N neighbouring house will be as close as ~3.5m from the edges of the excavation. Close controls by the contractor over rock excavation are recommended so excessive vibrations are not generated.

Dilapidation reporting carried out on the N neighbouring property is recommended prior to the excavation works commencing to minimise the possibility of spurious building damage claims.

Excavation methods are to be used that limit peak particle velocity to 5mm/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 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.
- Use of rock grinders (milling head).

It is worth noting that vibrations that are below thresholds for building damage may be felt by the occupants of the neighbouring houses.

13. Excavation Support Requirements

Bulk Excavation for Proposed Carport

The excavation will reach a maximum depth of ~2.1m and allowing for back-wall drainage, will be set back ~0.8m from the N common boundary. The depth to the rock in this location was found to be 0.6m. Over the boundary, the N neighbouring property steps down to the driveway. As such, the proposed excavation will be sufficiently set back from any structures

on the N neighbouring property and only the N common boundary will be within the zone of influence of the proposed excavation. In this instance, the zone of influence is the area above a theoretical 45° line through clay from the top of Medium Strength Rock towards the surrounding structures and boundaries. This line reduces to 30° through soil.

The common boundary fence along the N boundary is to be braced before the excavation commences.

The cut is to be permanently or temporarily supported along the N side before the excavation through rock commences. The support is to be installed systematically as the excavation progresses to ensure the integrity of the neighbouring property into the future. If the support is temporary, it is to remain in place until the retaining wall is built as a sacrificial-type system. See the site plan attached for the minimum required extent of the shoring.

Along its uphill and S sides, the cut batters are to be temporarily battered at no steeper than 1.0 vertical to 1.7 horizontal (30°) for the short period of time until the retaining walls are installed. Medium Strength Sandstone or better will stand at vertical angles unsupported subject to approval by the geotechnical consultant.

During the excavation process, the geotechnical consultant is to inspect the excavation as it is lowered in 1.5m intervals to ensure the ground materials are as expected and no wedges or other geological defects are present that could require additional support. Should additional ground support be required, this will likely involve the use of mesh, sprayed concrete, and rock bolts.

Upon completion of the excavation, it is recommended all cut faces be supported with retaining walls to prevent any potential future movement of joint blocks in the cut faces that can occur over time, when unfavourable jointing is obscured behind the excavation faces. Additionally, retaining walls will help control seepage and to prevent minor erosion and sediment movement.

Bulk Excavation for Proposed Pool

No structures or boundaries will be within the zone of influence of the excavation for the proposed pool.

The soil and clay portions of the cut for the pool are expected to 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. Excavations through Medium Strength Sandstone or better will stand at vertical angles unsupported subject to approval by the geotechnical consultant.

Advice Applying to Both Excavations

Upslope runoff is to be diverted from the cut faces by sandbag mounds or other diversion works. Unsupported cut batters through soil and clay 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 cannot blow off in a storm. The materials and labour to construct the retaining walls/pool structure are to be organised so on completion of the excavations they can be constructed as soon as possible. The excavations are to be carried out during a dry period. No excavations are to commence if heavy or prolonged rainfall is forecast.

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 IS ON THE NEXT PAGE

Table 1 – Likely Earth Pressures for Retaining Structures

Unit	Earth Pressure Coefficients		
	Unit weight (kN/m^3)	'Active' K_a	'At Rest' K_0
Sandy Soil and Residual Clay	20	0.40	0.55
Medium Strength Sandstone	24	0.00	0.01

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. 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 concrete slab and shallow piers supported directly off Medium Strength Sandstone are suitable footings for the proposed carport. This ground material is expected to be exposed across the majority of the base of the excavation. Where sandstone is not exposed, it is expected at a maximum depth of ~0.7m below the current ground surface.

The proposed house is to be supported on piers taken to the underlying Medium Strength Sandstone. This material is expected at variable depths of between 0.6 to 1.4m below the current surface.

The proposed pool is expected to be partially seated in Medium Strength Sandstone. Where sandstone is not exposed at the base of the excavation, the pool is to be supported on shallow piers taken to the underlying Medium Strength Sandstone.

A maximum allowable bearing pressure of 1000kPa can be assumed for footings on Medium Strength Sandstone.

Naturally occurring vertical cracks (known as joints) commonly occur in sandstone. These are generally filled with soil and are the natural seepage paths through the rock. They can extend to depths of several metres and are usually relatively narrow but can range between 0.1 to 0.8m wide. If a footing falls over a joint in the rock, the construction process is simplified if with the approval of the structural engineer the joint can be spanned or alternatively the footing can be repositioned so it does not fall over the joint.

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. Geotechnical Review

The structural plans are to be checked and certified by the geotechnical consultant 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.

17. Inspections

The client and builder are to familiarise themselves with the following required inspections as well as council geotechnical policy. We cannot provide geotechnical certification for the

owners or the regulating authorities if the following inspections have not been carried out during the construction process.

- During the excavation process for the proposed carport, the geotechnical consultant is to inspect the cut faces as they are lowered in 1.5m intervals to ensure ground materials are as expected and that there are no wedges or other defects present in the rock that may require additional support.

- 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.

Nathan Gardner
B.Sc. (Geol. & Geophys. & Env. Stud.)
Engineering Geologist and Environmental Scientist.

Reviewed By:

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

Photo 1

Photo 2

Photo 3

Photo 4: 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.

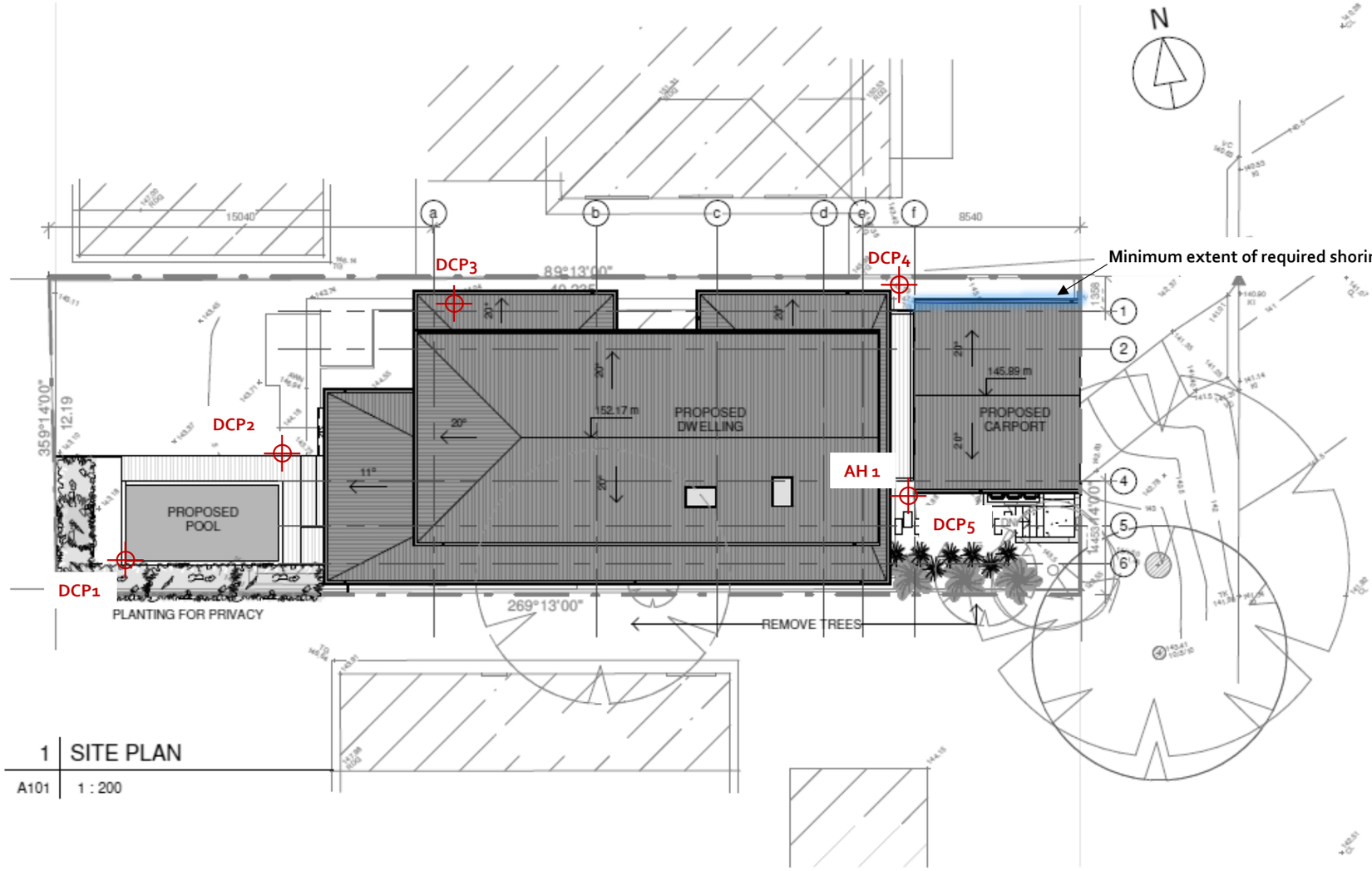
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.

- This report should not be applied to any other project other than that outlined in section 1.0.

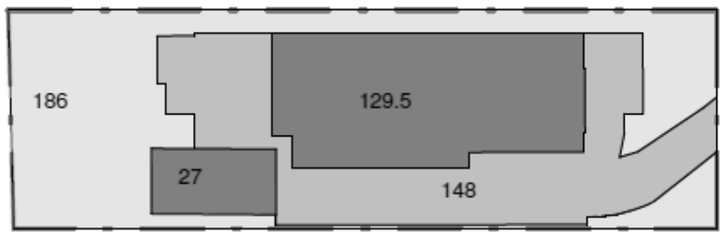
- This report is to be read in full and should not have sections removed or included in other documents as this can result in misinterpretation of the data by others.

- 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.

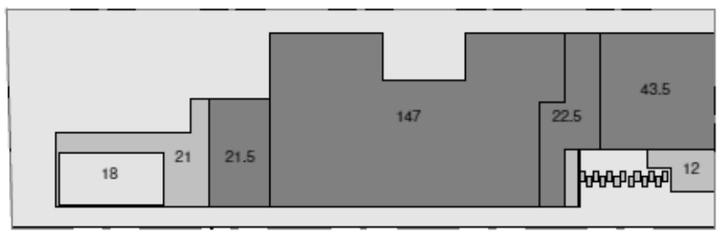
SITE PLAN – showing test locations



1 | SITE PLAN
A101 | 1 : 200



2 | SITE ANALYSIS - EXISTING
A101 | 1 : 350



3 | SITE ANALYSIS - PROPOSED
A101 | 1 : 350

CALCULATION TABLE		
TITLE:	LOT 215 DP 16327	
ZONE	C4 - ENVIRONMENTAL LIVING	
HAZARDS	-	
SITE AREA	490.5 m²	
MAX. BUILDING HEIGHT	Hmax = 8.5 m	
	EXISTING	PROPOSED
GROSS FLOOR AREA	122m²	140+100=240m²
GARAGE / CARPORT	25m²	40m²
SITE COVERAGE	156.5m² / 32%	234.5 m² / 48%
HARD SURFACE	148 m² / 30%	33 m² / 7%
POOL AREA	-	18 m² / 3.5%
SOFT LANDSCAPED AREA	186 m² / 38%	205 m² / 41.5%
LANDSCAPED AREA (TOTAL)	186 m² / 38%	223 m² / 45%
OUTDOOR LIVING	18+21+21.5=60.5m² (12.5%)	

Do not scale from plans. All dimensions and levels shown on plan are subject to confirmation on site.

ISSUE	DATE	DESCRIPTION	DRWN	CHKD
	28.02.2022	MEASURED DRAWINGS	TM	KM
	11.10.2022	CONCEPT 2	KM	
	9.01.2023	DA ISSUE	KM	

BLUE SKY BUILDING DESIGNS
www.blueskybuildingdesigns.com.au
E: info@bsbd.com.au

PROJECT TITLE:	DWELLING, CARPORT & POOL
PROJECT NO.:	2022-004
AT:	25 YORK TERRACE, BILGOLA PLATEAU, NSW 2107
FOR:	LISA MOODY & MATT ROBINSON
SHEET TITLE:	SITE PLAN
SHEET NO:	A101
SCALE A3:	As indicated

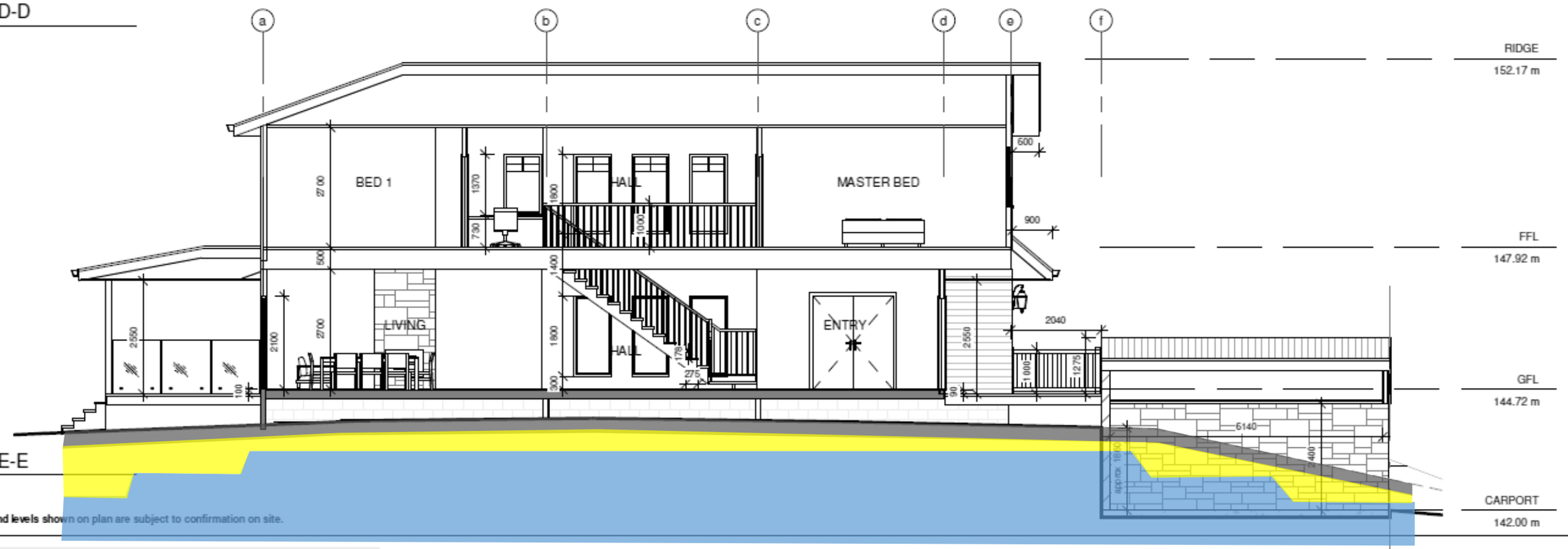
N

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials

- Topsoil
- Sandy Clay – Firm to Stiff
- Hawkesbury Sandstone – Medium Strength

1 | SECTION D-D

A111 | 1 : 100



2 | SECTION E-E

A111 | 1 : 100

Do not scale from plans. All dimensions and levels shown on plan are subject to confirmation on site.

ISSUE	DATE	DESCRIPTION	DRWN	CHKD
	28.02.2022	MEASURED DRAWINGS	TM	KM
	11.10.2022	CONCEPT 2	KM	
	9.01.2023	DA ISSUE	KM	

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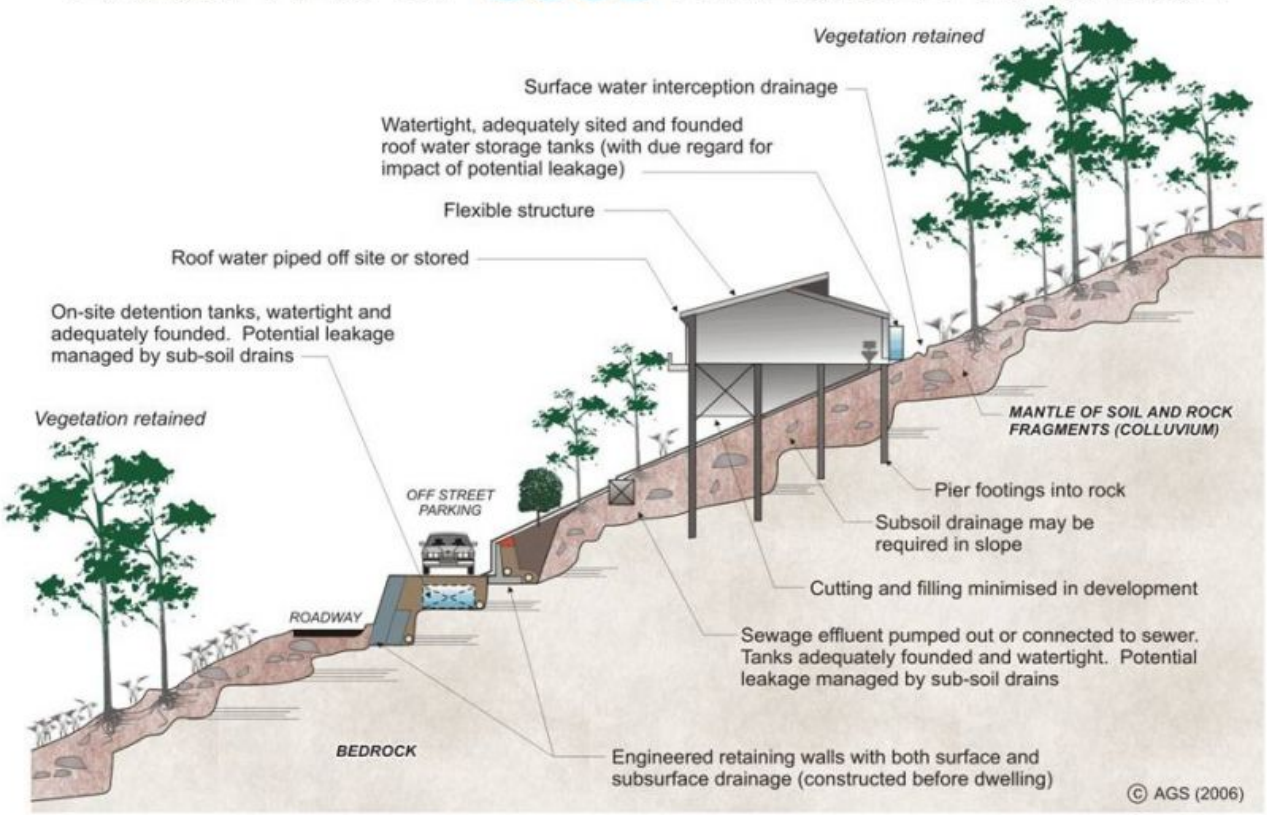
PROJECT TITLE:	DWELLING, CARPORT & POOL
PROJECT NO.:	2022-004
AT:	25 YORK TERRACE, BILGOLA PLATEAU, NSW 2107
FOR:	LISA MOODY & MATT ROBINSON
SHEET TITLE:	SECTIONS
SHEET NO:	A111
SCALE A3:	1 : 100

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE