

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

Development Application for _____
Name of Applicant

Address of site 197 McCarrs Creek Road, Church Point

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 15/9/22 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 197 McCarrs Creek Road, Church Point
Report Date: 15/9/22

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>197 McCarrs Creek Road, Church Point</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>197 McCarrs Creek Road, Church Point</u>
Report Date: <u>15/9/22</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 18/5/22
(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 18/5/22
- ☒ 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 Extension, Deck, Swim Spa & Spa at **197 McCarrs Creek Road, Church Point**

1. Proposed Development

- 1.1** Construct a lower floor extension to the uphill side of the house.
- 1.2** Install a swim spa and a spa on the N side of the property by excavating to a maximum depth of ~1.2m.
- 1.3** Construct a deck off the downhill side of the house.
- 1.4** Various other minor internal alterations and additions.
- 1.5** Details of the proposed development are shown on 14 drawings prepared by Action Plans, drawings numbered DA03 to DA16, dated 15.6.22.

2. Site Description

- 2.1** The site was inspected on the 18th May, 2022.
- 2.2** This residential property is on the high side of the road and has an E aspect. It is located on the steeply graded middle reaches of a hillslope. The natural slope falls from the Right of Carriageway (ROW) at an average angle of ~22°. The slope above and below the property continues at similar angles.
- 2.3** The property is accessed by a ROW off the uphill side of the road. The cut for the ROW is supported by large dimensioned sandstone boulders (Photo 1). A concrete driveway diverts off the downhill side of the ROW to a suspended carport on the uphill side of the property (Photo 2). In between the ROW frontage and the house is a steeply sloping embankment (Photo 3). The toe of the slope has been cut vertically to heights of up to some ~0.8m. See **Section 16** for advice regarding this cut. The two-storey clad house is steel framed and supported on steel posts. The steel posts appear to stand

vertical. Several large boulders are embedded in the slope in stable positions (Photo 4). A level lawn area extends off the N side of the house to the N boundary. The fill for the level lawn area is supported by a stable ~1.2m high stack rock retaining wall and a stable ~1.2m high timber retaining wall (Photo 5). The retaining walls and lawn area are to be demolished as part of the proposed works. A steeply sloping lawn area extends from the downhill side of the house to the lower boundary (Photo 6). The lower two-thirds of the property is densely vegetated and was unable to be assessed in terms of stability (Photo 7 & 8).

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

One exposed cut batter was logged to identify soil materials. 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:

GROUNDTEST RESULTS ON THE NEXT PAGE

EXPOSED CUT BATTER (~RL66.2) – AH1 (Photo 9)

Depth (m)	Material Encountered
0.0 to 0.2	TOPSOIL , dark brown clayey soil, medium grained, loose, fine trace of organic matter, dry.
0.2 to 0.5	Colluvium , orange, fine grained, dry.
0.5 to 0.7	FLOATER , fine grained sandstone.

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 (~RL63.5)	DCP 2 (~RL63.5)	DCP 3 (~RL66.2)	DCP 4 (~RL66.2)	DCP 5 (~RL66.2)
0.0 to 0.3	1F	2	2	1	1
0.3 to 0.6	1	3	3	5	4
0.6 to 0.9	4	6	5	7	7
0.9 to 1.2	8	9	8	13	12
1.2 to 1.5	12	14	14	20	18
1.5 to 1.8	27	18	22	29	25
1.8 to 2.1	36	28	31	35	31
2.1 to 2.4	#	36	#	#	#
2.4 to 2.7		#			
	End of Test @ 2.1m	End of Test @ 2.4m	End of Test @ 2.1m	End of Test @ 2.1m	End of Test @ 2.1m

#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 @ 2.1m, DCP still going down slowly, orange and white clay on damp tip.

DCP2 – End of test @ 2.4m, DCP still going down slowly, orange and white clay on damp tip.

DCP3 – End of test @ 2.1m, DCP still going down slowly, orange clay on damp tip.

DCP4 – End of test @ 2.1m, DCP still going down slowly, brown clay on damp tip.

DCP5 – End of test @ 2.1m, DCP still going down slowly, orange clay on damp tip.

5. Geological Observations/Interpretation

The slope materials are colluvial to depths of at least ~0.8m under the driveway and house. This colluvium on the uphill side of the house is unsupported and battered at angles of 30°+. In the test locations, the ground materials consist of fill and soil over clays. The clay merges into the underlying weathered rock at depths of between ~1.5m to ~1.8m below the current surface. The weathered zone is interpreted to be Extremely Low Strength Shale. 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 works.

7. Surface Water

Minor scour channels had been cut into the topsoil above the drainage pipe below the house (Photo 10) and under the house.

As the weather on the east coast is modelled to become more extreme in the future, on steep slopes such as this, it is recommended that a dish drain at least 0.5m be installed. This is to be installed behind the proposed retaining wall across the uphill side of the house. Any pits and piping to direct flows to the stormwater system for the road are to be oversized (min. 150mm ø pipe) and designed to cope with extreme rainfall events. The drain is to be designed by a stormwater/civil engineer in consultation with the geotechnical consultant. It is a condition of the risk assessment in **Section 8** that this be done.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed beside the property. The steeply graded slope that falls across the property and continues above and below is a potential hazard (**Hazard One**). The proposed excavations are a potential hazard until retaining walls are in place

(Hazard Two). The unsupported fill batter under the driveway is a potential hazard (Hazard Three).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	The steep slope that falls across the property and continues above and below failing and impacting on the proposed works.	The excavation for the proposed swim spa and spa (up to a maximum depth of ~1.2m) collapsing onto the work site before retaining structures are in place.	The large unsupported colluvial slope under the driveway failing and impacting on the subject house.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (15%)	'Medium' (30%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (2×10^{-4})	'Moderate' (4×10^{-4})
RISK TO LIFE	9.1×10^{-7} /annum	8.3×10^{-6} /annum	8.3×10^{-6} /annum
COMMENTS	This level of risk is 'ACCEPTABLE', provided the recommendations in Section 7 & 16 are followed.	This level of risk to property is 'UNNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in Section 13 and 14 are to be followed.	This level of risk to property is 'UNNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in Section 16 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 McCarrs Creek Road. If the land between the subject property and the road is council land or owned by another government department, stormwater from the proposed and existing development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

If the land between the subject property and the road is privately owned, the stormwater from the proposed and existing development can be piped down the slope to a level spreader system located 3m above the lower boundary. The spreader system is to be at least ~6m in length and run perpendicular to the slope.

Pipe diameter for the stormwater should be oversized to cope with extreme rainfall events (minimum 150mm \varnothing).

11. Excavations

An excavation to a maximum depth of ~1.2m is required to install the proposed spa. The excavation is expected to be through shallow soil over clay with Extremely Low Strength Shale expected at depths of between ~1.5m and ~1.8m. It is envisaged that excavations through soil, clay, and Extremely Low Strength Shale can be carried out with an excavator and bucket.

12. Vibrations

No excessive vibrations will be generated by excavation through soil, clay, and Extremely Low Strength Shale. Any vibrations generated by a domestic machine and bucket up to 16 ton carrying out excavation works will be below the threshold limit for infrastructure or building damage.

13. Excavation Support Advice

The excavation for the proposed swim spa and spa will reach a maximum depth of ~1.2m. The setbacks are as follows:

- ~2.2m from the uphill boundary.

As such, no structures or boundaries are expected to lie within the zone of influence of the excavation.

The sides of the proposed swim spa and spa excavation are expected to stand at near-vertical angles for short periods of time until the swim spa and spa structures are installed, provided the cut batters are kept from becoming saturated. If the cut batters through fill, soil, and clay remain unsupported for more than a few days before swim spa construction commences, they are to be supported with typical swim spa shoring until the swim spa structure is in place.

Upslope runoff is to be diverted from the cut faces by sandbag mounds or other diversion works. Unsupported cut batters through fill, 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 can't blow off in a storm. The materials and labour to construct the swim spa/spa structures 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.

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 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
Soil, and Residual Clays	20	0.35	0.45
Extremely Low Strength Shale	22	0.3	0.25

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.

NOTE: If the proposed swim spa is not designed to retain the slope above, a retaining wall will need to be built.

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

As the proposed swim spa and spa are of fiberglass construction, it will be required that they be supported on a concrete slab with shallow piers taken to and embedded ~0.6m into the underlying Extremely Low Strength Shale.

The proposed deck and extension are also to be supported on piers taken to and embedded at least ~0.6m into the underlying Extremely Low Strength Shale from the downhill side of the foundation.

This material is expected at depths of between 1.5m to 1.8m below the current surface in the area of the proposed works. As such, the required depths of the piered foundations are expected to be between 2.1m and 2.4m below the current surface measured from the downhill side of the pier hole.

A maximum allowable bearing pressure of 600kPa can be assumed for footings on Extremely Low Strength Shale. 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.

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. Remedial Works / Site Maintenance

A) The steep unsupported fill batter underneath the driveway requires a retaining wall constructed across the toe of the slope to prevent and limit failure. This wall is to be built some ~0.4m higher than the slope level to 'catch' any localised soil movement. The wall is to be designed by a structural engineer to cope with surcharge loads from the steep slope above.

B) To reduce the likelihood of future slope failure, a dish drain at least 0.5m in diameter is to be installed. This is to be installed behind the retaining wall proposed above. Any pits and piping to direct flows to the stormwater system for the road are to be oversized (min. 150mm \varnothing pipe) and designed to cope with extreme rainfall events. The drain is to be designed by a stormwater/civil engineer in consultation with the geotechnical consultant.

C) Any stormwater from the proposed and existing development is to be piped to the street drainage system through council land. If the area is not council land, a level spreader system is to be used. See **Section 10** for more details. Pipe diameter for the stormwater should be oversized to cope with extreme rainfall events (minimum 150mm \varnothing).

D) Where slopes approach or exceed 20°, such as on this site, it is prudent for the owners to occasionally inspect the slope (say annually or after heavy rainfall events, whichever occurs first). Should any of the following be observed: movement or cracking in retaining walls, cracking in any structures, cracking or movement in the slope surface, tilting or movement in established trees, leaking pipes, or newly observed flowing water, or changes in the erosional process or drainage regime, then a geotechnical consultant should be engaged to assess the slope. We can carry out these inspections upon request. The risk assessment in **Section 8** is subject to this site maintenance being carried out.

17. 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.

18. 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 owners and 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.



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

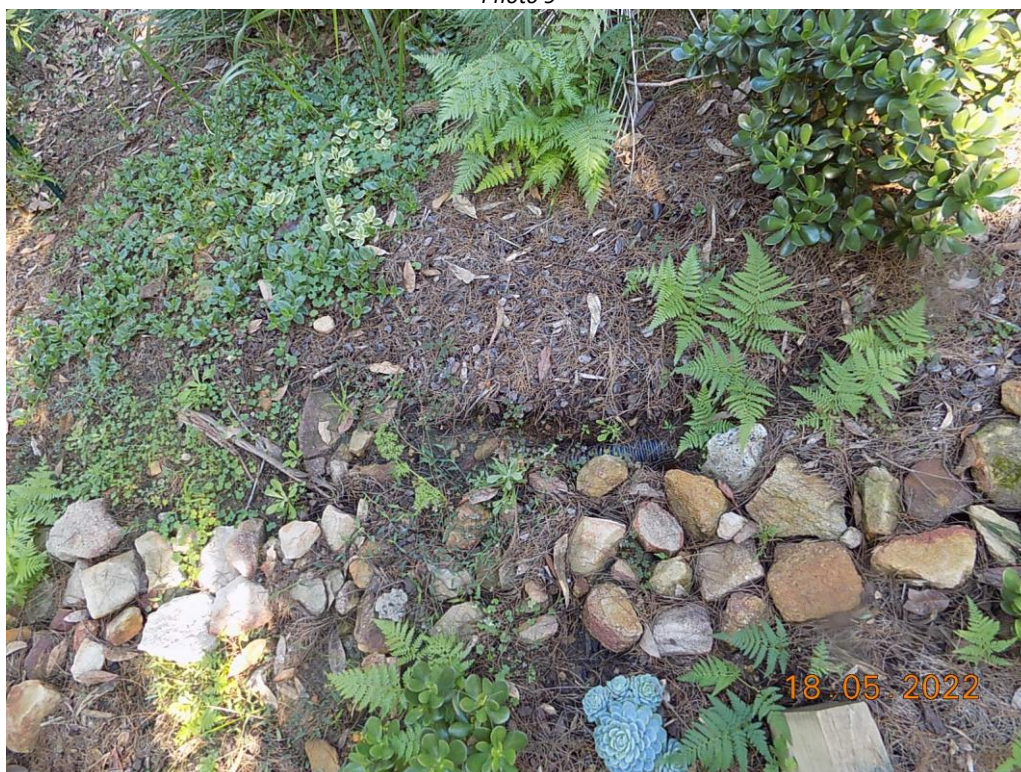


Photo 10

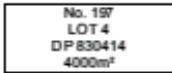
Important Information about Your Report

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.

60779

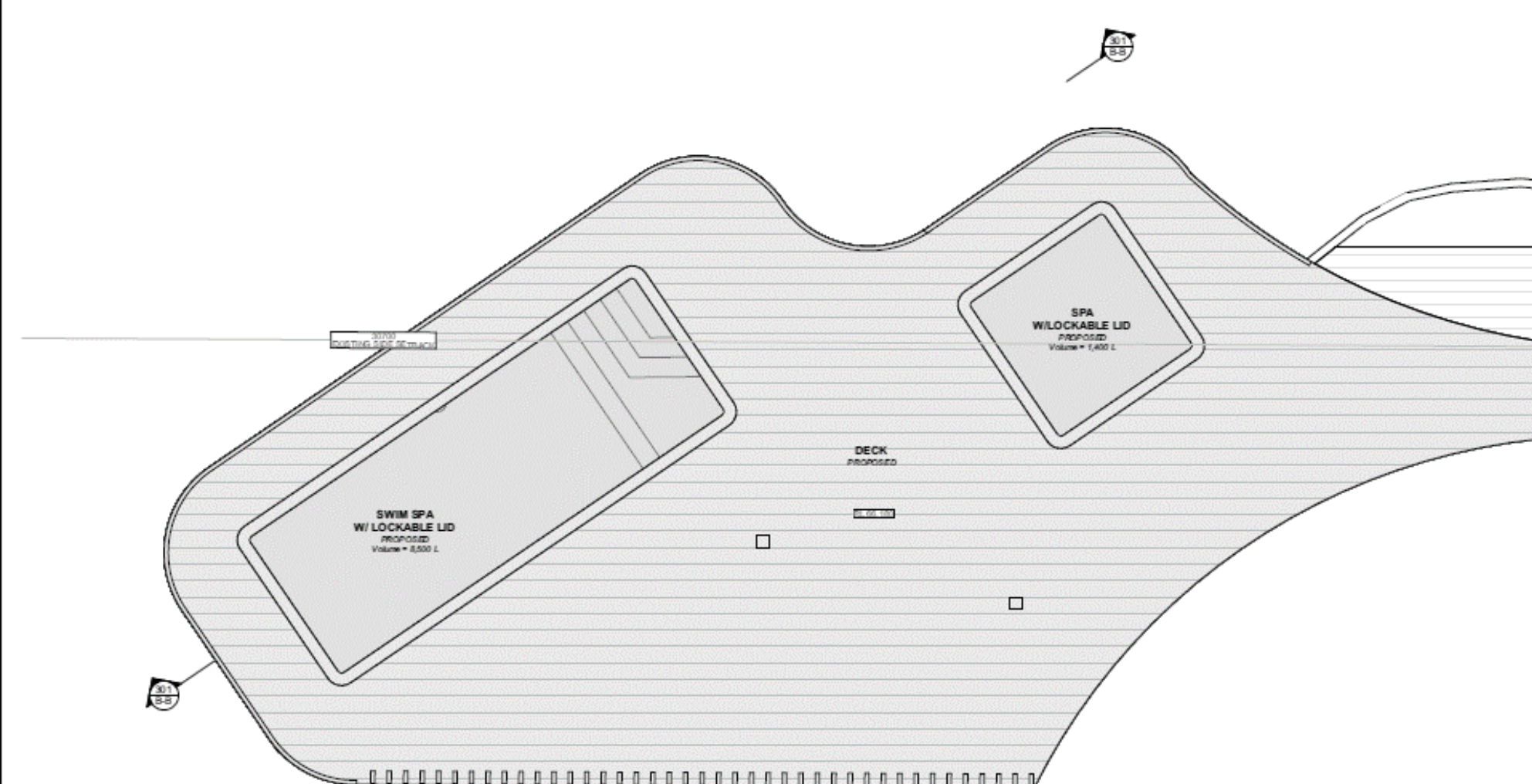
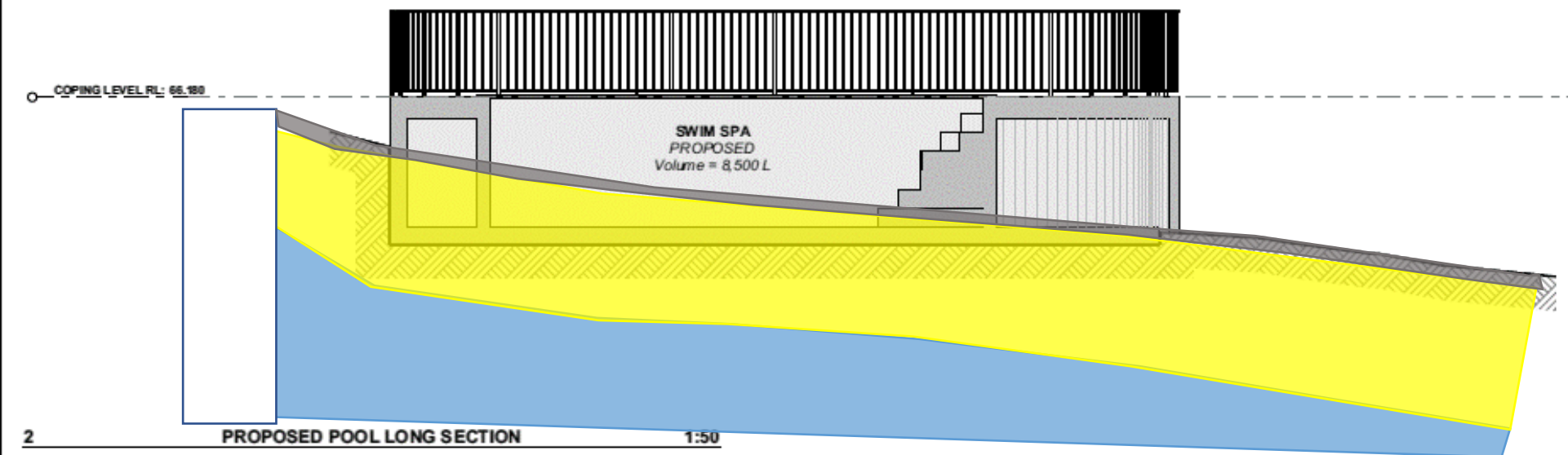


SITE PLAN – showing minimum extent of retaining wall underneath the house



1 EXISTING GROUND FLOOR PLAN - DEMOLITION 1:100

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



Expected Ground Materials

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

NOTE: SWIM SPA & SPATO INCLUDE LOCKABLE LIDS



ACTION PLANS

m: 0426 957 518
 operations@actionplans.com.au
 w: www.actionplans.com.au

REV.	DATE	COMMENTS	DRWN	NOTES
A	29/01/2022	DA - 19/01/2022	SLR	This drawing is the copyright of Action Plans and not be altered, reproduced or transmitted in any form or by any means, in part or in whole with the written permission of Action Plans.
				Do not scale measure from drawings. Ruled dimensions are to be used only.
				The Builder/Contractor shall check and verify all levels and dimensions on site prior to commencement of any work, caution of shop drawings, or fabrication of components.
				All errors and omissions are to be verified by the Builder/Contractor and referred to the designer prior to the commencement of works.

LEGEND
EXISTING
PROPOSED
DEMOLISHED

CLIENT
 KATHERINE & ANDREW
 SHERRARD

PROJECT ADDRESS
 197 MCCARRS CREEK
 ROAD, CHURCH POINT
 2105

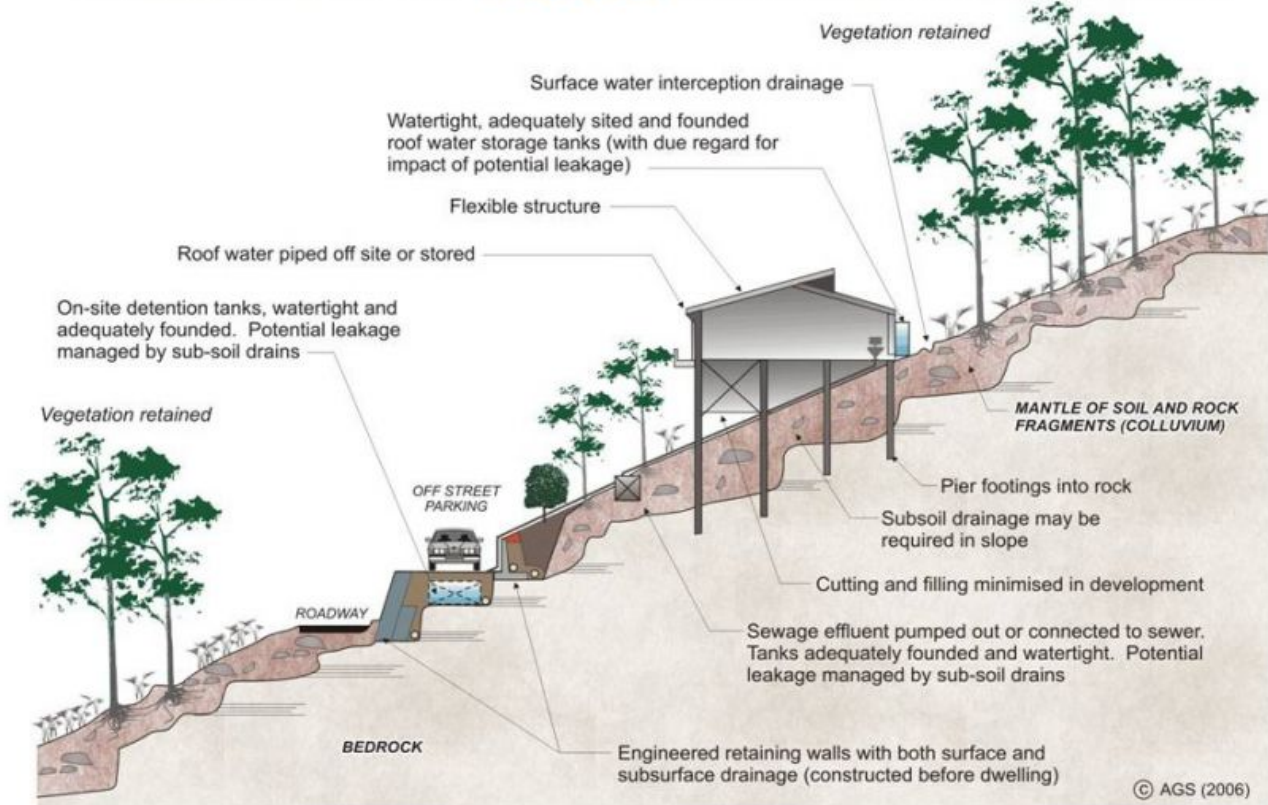
DRAWING NO.
DA12

DATE
 Wednesday, 15 June
 2022

DRAWING NAME
 POOL PLAN & LONG SECTION

SCALE
 1:50 @A2

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE

