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

Development Application for _____
Name of Applicant

Address of site 6B Trentwood Park, Avalon Beach

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 10/02/25 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 **6B Trentwood Park, Avalon Beach**

Report Date: 10/2/25

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 MScGEOL AIG., RPGeo

Membership No. 10306

Company **White Geotechnical Group Pty Ltd**

REGISTERED PROFESSIONAL GEOSCIENTIST
AUSTRALIAN INSTITUTE OF GEOSCIENTISTS
BENJAMIN WHITE
RPGeo No: 10306

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 6B Trentwood Park, Avalon Beach

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 **6B Trentwood Park, Avalon Beach**

Report Date: 10/2/25

Author: BEN WHITE

Author's Company/Organisation: **White Geotechnical Group Pty Ltd**

Please mark appropriate box

☒ Comprehensive site mapping conducted **6/2/25**
(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 **6/2/25**

☒ 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 MScGEOL AIG., RPGeo

Membership No. 222757

Company **White Geotechnical Group Pty Ltd**

GEOTECHNICAL INVESTIGATION:

New Pool at **6B Trentwood Park, Avalon Beach**

1. Proposed Development

1.1 Install a pool and landscape the area NE of the house by excavating to a maximum depth of ~3.2m.

1.2 Details of the proposed development are shown on 11 drawings prepared by Hot House Architects, drawings numbered DA 001 to 002, DA 010, DA 020, DA 100, DA 200 to 201, DA 300 to 302 and DA 600. All Issue 01. All dated 30 January 2025.

2. Site Description

2.1 The site was inspected on the 4th February, 2025.

2.2 This residential property is accessed by a shared driveway off the downhill side of Trentwood Park and has a SE aspect. It is located on the moderately graded middle reaches of a hillslope. The natural slope falls across the property at an average angle of ~10°. The slope above the property continues at similar moderate angles. The slope below the property gradually decreases in grade.

2.3 The property is accessed by a shared concrete driveway. The driveway continues to a brick parking area on the uphill side of the house (Photo 1). On the uphill side of the driveway, sandstone boulders were observed to be embedded in stable positions (Photo 2). A steeply graded fill batter provides a level platform for the driveway (Photo 3). The upper portion of the fill is densely vegetated and currently considered stable. The fill batter is supported at the base by two stable low sandstone flagging retaining walls which step up to a combined ~1.0m in height (Photo 4). These walls will be demolished as part of the proposed works. A cut for the

house on the uphill side has been taken through a thin band of Low to Medium Strength Sandstone which outcrops across the slope in this location (Photo 5). The observable portions of the rock face were seen to be free from significant geological defects that could affect its stability. The part two-story timber clad house is supported on brick walls and brick piers. No significant signs of movement were observed in the visible supporting walls, and the supporting piers stand vertical. Stable timber decking extends off the NE face off the house, the timber posts of the deck stand vertical (Photo 6).

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 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 weathered rock. The locations of the tests are shown on the site plan attached. It should be noted that a level of caution should be applied when interpreting DCP test results. The test will not pass through hard buried objects so in some instances it can be difficult to determine whether refusal has occurred on an obstruction in the profile or on the natural rock surface. This is not expected to have been an issue for this site. But due to the possibility that the actual ground conditions vary from our interpretation there should be allowances in the excavation and foundation budget to account for this. We refer to the appended “Important Information about Your Report” to further clarify. The results are as follows:

AUGER HOLE 1 (~RL30.6) **–** AH1 (Photo 7)

Depth (m)	Material Encountered
0.0 to 0.2	**FILL**, sandy clayey texture, derived from local natural material, dark brown, Medium Dense, dry, fine to medium grained.
0.2 to 0.5	**TOPSOIL**, clayey sandy texture, grey, Soft, dry, fine to medium grained.
0.5 to 0.8	**SANDY CLAY**, derived from weathered Extremely Low to Very Low Strength Rock, mottled orange, maroon and grey, Firm, dry.

End of test @ 0.8m in sandy clay. No water table encountered.

DCP TEST RESULTS – Dynamic Cone Penetrometer					
Equipment: 9kg hammer, 510mm drop, conical tip.				Standard: AS1289.6.3.2 - 1997	
Depth(m) Blows/0.3m	**DCP 1** (~RL28.9)	**DCP 2** (~RL29.0)	**DCP 3** (~RL29.0)	**DCP 4** (~RL30.5)	**DCP 5** (~RL30.6)
0.0 to 0.3	8	5	4	5	6
0.3 to 0.6	5	6	5	9	6
0.6 to 0.9	8	17	8	8	7
0.9 to 1.2	14	#	#	7	27
1.2 to 1.5	15			#	15
1.5 to 1.8	36				#
1.8 to 2.1	#				
	End of Test @ 1.8m	Refusal on Rock @ 0.8m	Refusal on Rock @ 0.8m	Refusal on Rock @ 1.0m	Refusal on Rock @ 1.4m

#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 @ 1.8m, DCP still very slowly going down, brown sandy clay on damp tip, mottled maroon and grey sandy clay in collar above tip.

DCP2 – Refusal on rock @ 0.8m, DCP thudding on rock surface, clean dry tip, maroon sandy clay in collar above tip.

DCP3 – Refusal on rock @ 0.8m, DCP thudding on rock surface, maroon impact dust on dry tip.

DCP4 – Refusal on rock @ 1.0m, DCP bouncing off rock surface, clean dry tip, mottled maroon and brown clay in collar above tip.

DCP5 – Refusal on rock @ 1.4m, DCP bouncing off rock surface, maroon impact dust on dry tip, yellow sandy clay in collar above tip.

5. Geological Observations/Interpretation

The natural slope materials are colluvial at the near surface and residual at depth. In the location of the proposed works, the ground materials consist of shallow clayey soils over clays. Filling has been placed across the slope in the location of the proposed pool. The clays merge into the weathered zone of the underlying Extremely Low to Very Low Strength Rock at depths of ~1.4m to ~1.5m below the current surface, being deeper due to the presence of filling and a variable weathering profile. The weathered zone is interpreted as Extremely Low to Very Low Strength Rock. It is to be noted that this material can appear as a mottled stiff clay when it is cut up by excavation equipment. A band of sandstone immediately above the house can be seen outcropping through the otherwise shale-dominated profile. From our previous experience in the Narrabeen Group, it is likely any sandstone bands will be limited in thickness and extent but may be located below the footprint of the pool as 4 of the 5 tests in this location hit refusal indicating rock of Medium Strength or better. 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 denser and less permeable clay and weathered Extremely Low to Very Low Strength Rock layers, as well as the buried surface of the sandstone. 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

Apart from the channelling observed below the house, no evidence of significant surface flows were observed on the property during the inspection. It is expected that normal sheet wash will move onto the site from above the property during heavy down pours.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed below or beside the property. The moderately graded slope that falls across the property and continues above is a potential hazard (**Hazard One**). Vibrations generated from the proposed excavation are a potential hazard (**Hazard Two**). The proposed excavation is a potential hazard until retaining structures are in place (**Hazard Three**). Surcharge loads on the driveway upslope form the proposed excavation are a potential hazard while the pool excavation is open (**Hazard Four**).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two
TYPE	The moderate slope that falls across the property and continues above failing and impacting on the proposed works.	Potential vibrations produced during the proposed excavation impacting on the surrounding structures.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (12%)	'Minor' (10%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (5×10^{-4})
RISK TO LIFE	8.3×10^{-7}/annum	5.3×10^{-7}/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.

RISK ANALYSIS SUMMARY CONTINUED ON THE NEXT PAGE

HAZARDS	Hazard Three	Hazard Four
TYPE	The excavation collapsing onto the work site and undercutting the concrete driveway and timber deck (Photos 1 & 6) before retaining structures are in place.	Surcharge loads from vehicles and construction materials on the driveway upslope causing damage or failure while the excavation for the pool is open.
LIKELIHOOD	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (10%)
RISK TO PROPERTY	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	5.9×10^{-5}/annum	8.3×10^{-5}/annum
COMMENTS	This level of risk to life and property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 13 and 14** are to be followed.	This level of risk to life and property is '**UNACCEPTABLE**'. To move the risk levels to acceptable levels, the recommendations in **Section 14** 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

No significant additional stormwater runoff will be created by the proposed development.

11. Excavations

An excavation to a maximum depth of ~3.2m is required to install the proposed pool and landscape the area around it.

The excavation is expected to be through fill, soil and clay, with Extremely Low to Very Low Strength Rock expected at depths of between ~1.4m to ~1.5m in the location of the proposed

works. It is envisaged that excavations through soil, clay, and Extremely Low to Very Low Strength Rock can be carried out with an excavator and toothed bucket. If encountered, excavations through Medium Strength Rock will require grinding or rock sawing and breaking.

12. Vibrations

Possible vibrations generated during excavations through fill, soil, clay, and Extremely Low to Very Low Strength Rock will be below the threshold limit for building damage utilising a domestic-sized excavator up to 16 tonnes.

Excavations through Medium Strength Rock or better, if encountered, should be carried out to minimise the potential to cause vibration damage to the subject and NE neighbouring houses, and a sewer main that cuts through the property NE of the proposed pool. Allowing ~0.5m for backwall drainage where necessary, the setbacks from the proposed excavation to the existing structures are as follows:

- ~2.0m from the sewer main.
- ~4.3m from the supporting brick walls of the subject house.
- ~7.3m from the NE neighbouring house.

Dilapidation reporting carried out on the NE neighbouring property is recommended prior to the excavation works commencing to minimise the potential for spurious building damage claims.

Close controls by the contractor over rock excavation are recommended so excessive vibrations are not generated.

Excavation methods are to be used that limit peak particle velocity to 5mm/sec at the house walls and sewer main. Vibration monitoring will be required to verify this is achieved. Vibration monitoring must include a light/alarm so the operator knows if vibration limits have been exceeded. The equipment is to 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, as well as reducing hammer size as necessary.
- Use of rock grinders (milling head).

Should excavation induced vibrations exceed vibration limits after the recommendations above have been implemented, excavation works are to cease immediately and our office is to be contacted.

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

13. Excavation Support Requirements

The excavation for the proposed pool and landscaping will reach a maximum depth of ~3.2m. Allowing 0.5m for back wall drainage where necessary, the setbacks are as follows:

- ~0.6m from the supporting timer posts of the decking which extends off the NE side of the house (Photo 6)
- ~4.1m from the concrete driveway uphill from the proposed excavation (Photo 1).

As such, the supporting posts of the deck as well as a portion of the concrete driveway will lie within the zone of influence of the proposed excavation. In this instance, the zone of influence is the area above a theoretical 45° line (from horizontal) from the base of the excavation

towards the surrounding structures and boundaries. This line reduces to 30° through the fill and soil.

To prevent any damage or failure of the driveway during the proposed works it is recommended excavation spoil, construction materials and vehicles be sufficiently set back from the Zone of Influence of the excavation. In this case, vehicles on the driveway will need to be diverted a minimum of 5.0m from the edges of this excavation while the cut is open until the retaining structures are installed. The driveway is to be barricaded/taped off so no vehicles can go within the zone of influence of the cut until it is supported by retaining walls. See 'Swimming Pool Level' on the site plan attached for the minimum area of exclusion.

Prior to the commencement of the excavation, the deck will need to be propped with the props supported beyond the zone of influence of the proposed excavation. Alternatively, the supporting posts of the deck can be underpinned to below the zone of influence of the cut prior to the excavation commencing. See the site plan attached for the minimum extent of the required propping/underpinning.

The excavation will require the removal of the two low sandstone flagging retaining walls which step up to a combined ~1.0m in height (Photo 4). The walls are to be demolished from the top down in an orderly manner with the fill behind the walls being systematically lowered at the same time. The soil batter slope is not to exceed 1.0 Vertical to 1.7 Horizontal (30°) as the walls are demolished.

After the previous advice is carried out, the pool excavation may commence. Due to the depth of the excavation, as well as the proximity to the driveway and grade of the slope, we recommend the uphill side of the excavation be temporarily supported with typical pool shoring such as braced sacrificial form ply, until retaining structures are in place. The remaining sides of the cut are expected to stand at near-vertical angles for short periods of time until the pool structures is installed provided the cut batters are kept from becoming saturated. If the unsupported cut batters remain unsupported for more than a day before

pool construction commences, they are also to be supported with typical pool shoring until the pool structure is in place. The support will need to be designed by the structural engineer. See site plan attached for extent of minimum required shoring shown in blue.

During the excavation process, the geotechnical consultant is to inspect the cut in 1.5m intervals as it is lowered, while the machine/excavation equipment is on site, to ensure the ground materials are as expected and that the shoring is adequate.

Upslope runoff is to be diverted from the cut faces by sandbag mounds or other diversion works. All 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 cannot blow off in a storm. The materials and labour to construct the pool structure/retaining walls 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 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/m³)	**'Active' K_a**	**'At Rest' K_0**
Fill and Topsoil	20	0.40	0.55
Residual Clays	20	0.35	0.45
Extremely Low Strength Rock	22	0.25	0.38
Very Low Strength Rock	22	0.22	0.35
Medium Strength Rock	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 (from slope or driveway immediately above) 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 full hydrostatic pressures are to be accounted for in the retaining structure design.

15. Foundations

The proposed pool excavation is expected to be partially seated in Extremely Low to Very Low Strength Rock or better. This is a suitable foundation material. It is expected to be exposed across a majority of the base of the proposed excavation. Where it is not exposed, shallow/bucket piers taken to Extremely Low to Very Low Strength Rock or better will be required to maintain a uniform foundation material across the structure. The piers for the shallow portion of the pool are expected to encounter this material at depths of between ~1.4m to ~1.5m below the current surface.

A maximum allowable bearing pressure of 600kPa can be assumed for footings on Extremely Low to Very Low Strength Rock or better. It should be noted that this material is a soft rock and a rock auger will cut through it so the builders should not be looking for refusal to end the footings.

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 and inspected by the geotechnical consultant.

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 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.

17. 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 Occupation Certificate or the owner if the following inspections have not been carried out during the construction process.

- During the excavation process, the geotechnical consultant is to inspect the cut in 1.5m intervals as it is lowered, while the machine/excavation equipment is on site, to ensure the ground materials are as expected and that the shoring is adequate.

- 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.)
AIG., RPGeo Geotechnical & Engineering.
No. 10307
Engineering Geologist & Environmental Scientist.

Reviewed By:

Ben White M.Sc. Geol.,
AIG., RPGeo Geotechnical & Engineering.
No. 10306
Engineering Geologist.

REGISTERED PROFESSIONAL GEOSCIENTIST
AUSTRALIAN INSTITUTE OF GEOSCIENTISTS
BENJAMIN WHITE
RPGeo No:
10306

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7 – AH1 – downhole is Top to Bottom

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.

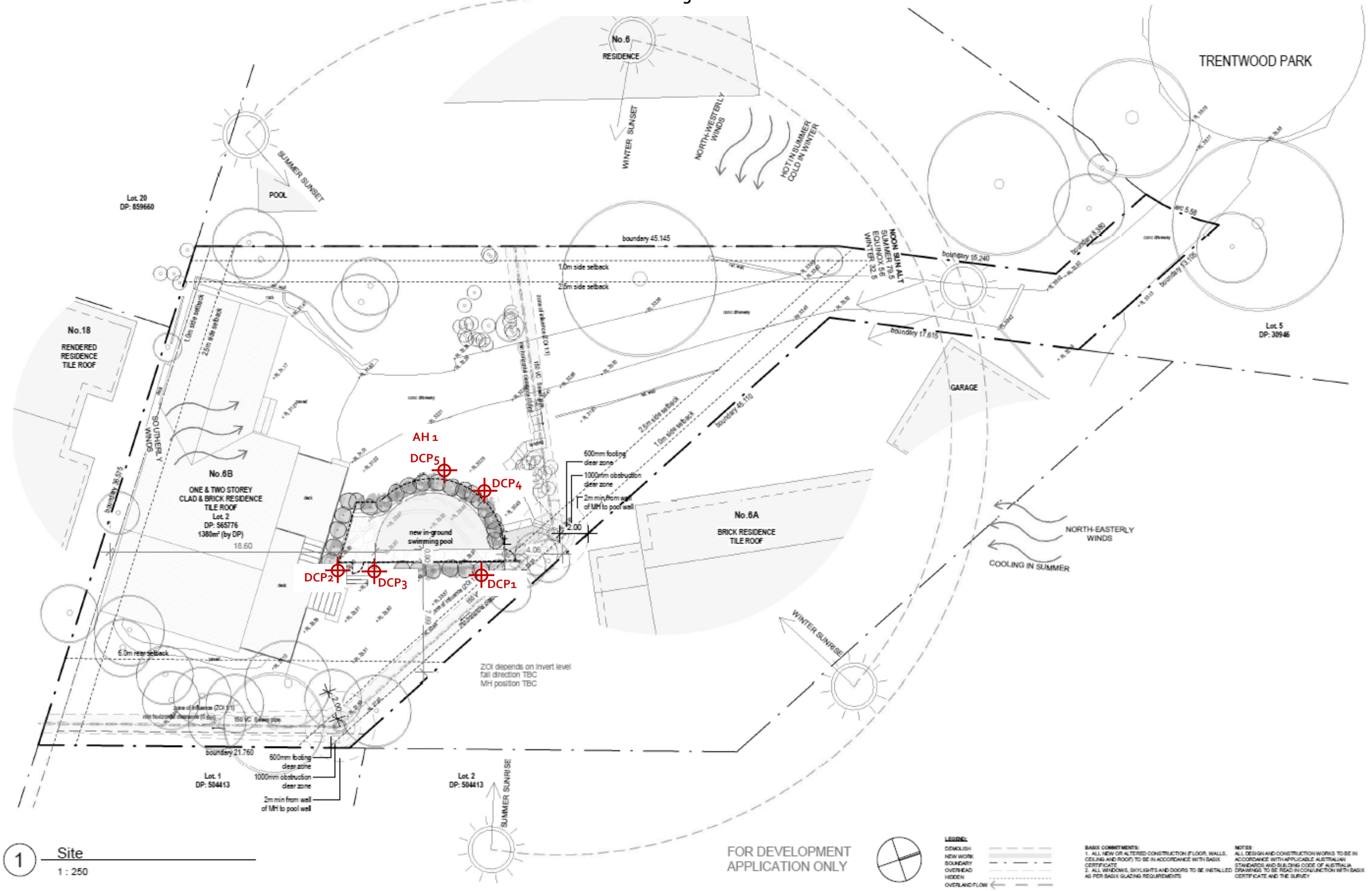
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.

- 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
1 : 250

FOR DEVELOPMENT APPLICATION ONLY

LEGEND:
DEMOLISH
NEW WORK
BOUNDARY
OVERHEAD
HIDDEN
OVERLAND FLOW

BASIX COMMITMENTS:
1. ALL NEW OR ALTERED CONSTRUCTION (FLOOR, WALLS, CEILING AND ROOF) TO BE IN ACCORDANCE WITH BASIX CERTIFICATE
2. ALL WINDOWS, SKYLIGHTS AND DOORS TO BE INSTALLED AS PER BASIX GLAZING REQUIREMENTS

NOTES:
ALL DESIGN AND CONSTRUCTION WORKS TO BE IN ACCORDANCE WITH APPLICABLE AUSTRALIAN STANDARDS AND BUILDING CODE OF AUSTRALIA
DRAWINGS TO BE READ IN CONJUNCTION WITH BASIX CERTIFICATE AND THE SURVEY

HOT HOUSE ARCHITECTS
Nominated Architect: Wade Stewart Cogle
NSW ARB Registration #: 10971
m: 0433 775 480
info@hothousestudio.com
p.o. box 26 newport nsw 2106
abn: 355 0579 1074

PRINT DATE: 30/01/2025 4:31:17 PM PRINT SIZE: A3

NOTES: Builder is to examine the site and verify conditions and dimensions. Any discrepancies must be brought to the architects attention. Use figured dimensions only. Do not scale drawings. All work shall comply with the Building Code of Australia and relevant Australian Standards.

ISSUE	DESCRIPTION	DATE
01	DA - Issue	30-01-25

CLIENT: Owner

PROJECT: ALTERATIONS AND ADDITIONS

ADDRESS: 6B TRENTWOOD PARK, AVALON BEACH

SITE ANALYSIS

PROJECT NO. -

DATE 30 January 2025

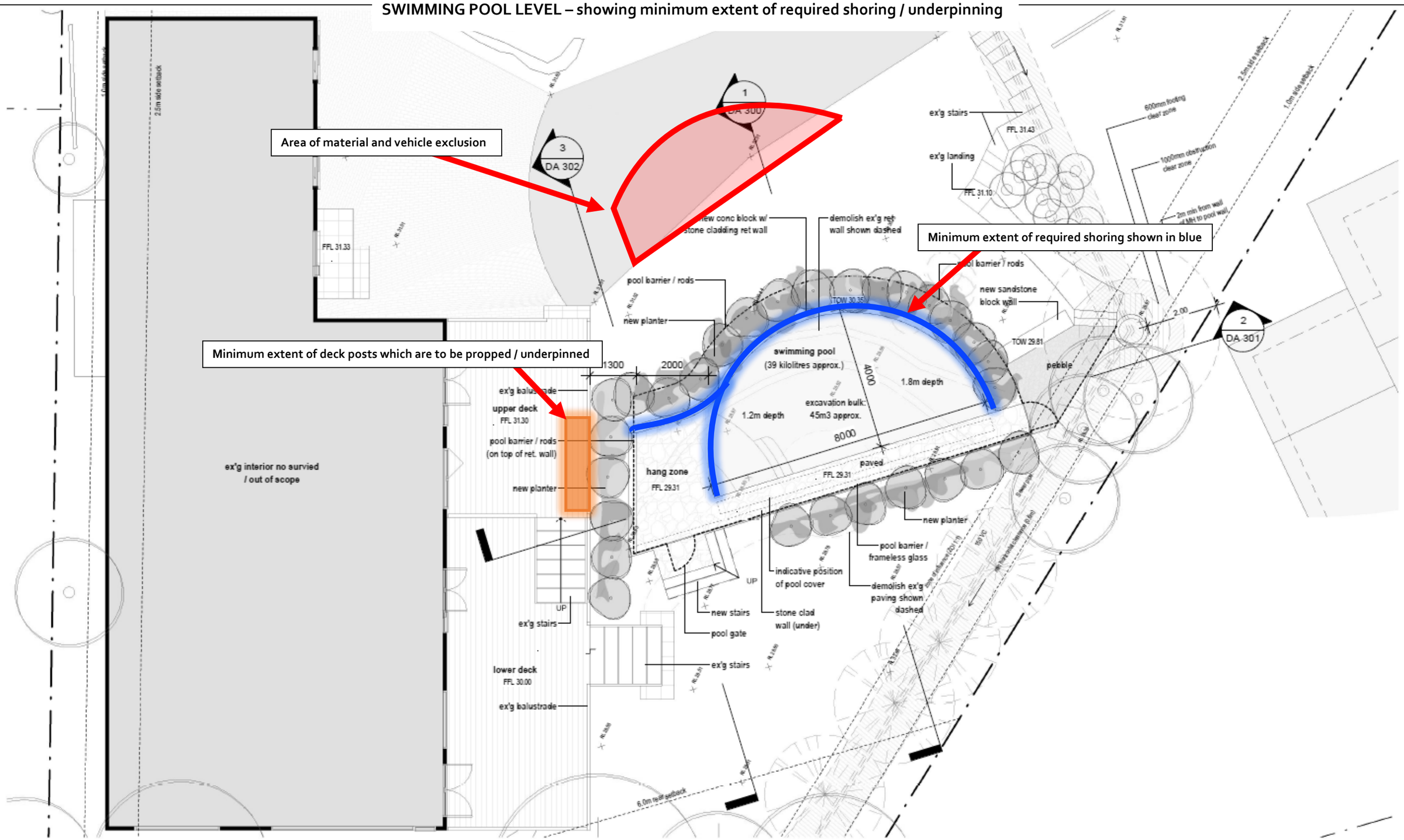
LOT: 2 DRAWN BY: MS

DP: 565776 CHECKED BY: WC

SCALE: As Indicated

DA 010

SWIMMING POOL LEVEL – showing minimum extent of required shoring / underpinning



1 Pool Level

1 : 100

FOR DEVELOPMENT APPLICATION ONLY

LEGEND:
DEMOLISH
NEW WORK
BOUNDARY
OVERHEAD
HIDDEN
OVERLAND FLOW

BASIX COMMITMENTS:
1. ALL NEW OR ALTERED CONSTRUCTION (FLOOR, WALLS, CEILING AND ROOF) TO BE IN ACCORDANCE WITH BASIX CERTIFICATE
2. ALL WINDOWS, SKYLIGHTS AND DOORS TO BE INSTALLED AS PER BASIX GLAZING REQUIREMENTS

NOTES:
ALL DESIGN AND CONSTRUCTION WORKS TO BE IN ACCORDANCE WITH APPLICABLE AUSTRALIAN STANDARDS AND BUILDING CODE OF AUSTRALIA
DRAWINGS TO BE READ IN CONJUNCTION WITH BASIX CERTIFICATE AND THE SURVEY

HOT HOUSE ARCHITECTS
Nominated Architect: Wade Stewart Cogle
NSW ARB Registration #: 10971
m: 0433 776 490
info@hothousestudio.com
p.o. box 26 newport nsw 2106
abn: 355 0579 1074

PRINT DATE: 30/01/2025 4:31:22 PM PRINT SIZE: A3

NOTES: Builder is to examine the site and verify conditions and dimensions. Any discrepancies must be brought to the architects attention. Use figured dimensions only. Do not scale drawings. All work shall comply with the Building Code of Australia and relevant Australian Standards.

ISSUE	DESCRIPTION	DATE
01	DA - Issue	30-01-25

CLIENT: Owner

PROJECT: ALTERATIONS AND ADDITIONS

ADDRESS: 6B TRENTWOOD PARK, AVALON BEACH

SWIMMING POOL LEVEL

PROJECT NO. -

DATE 30 January 2025

LOT: 2 DRAWN BY: MS

DP: 565776 CHECKED BY: WC

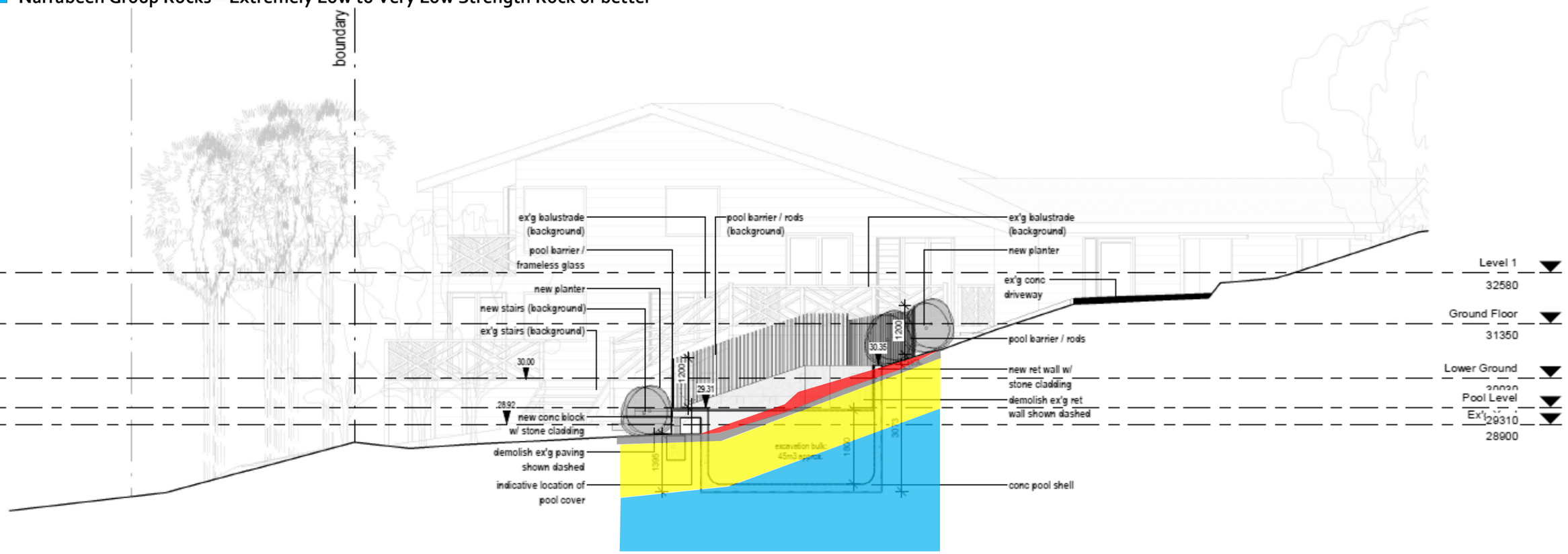
SCALE: As Indicated

DA 100

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials

Expected Ground Materials

- Fill
- Topsoil
- Clay
- Narrabeen Group Rocks – Extremely Low to Very Low Strength Rock or better



1 Section 1
1 : 100

FOR DEVELOPMENT APPLICATION ONLY

LEGEND:
DEMOLISH
NEW WORK
BOUNDARY
OVERHEAD
HIDDEN

BASIX COMMITMENTS:
1. ALL NEW OR ALTERED CONSTRUCTION (FLOOR, WALLS, CEILING AND ROOF) TO BE IN ACCORDANCE WITH BASIX CERTIFICATE.
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HOT HOUSE ARCHITECTS
Nominated Architect: Wade Stewart Cogle
NSW ARB Registration #: 10871
m: 0433 776 480
info@hothousestudio.com
p.o. box 26 newport nsw 2106
abn: 355 0579 1074

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NOTES: Builder is to examine the site and verify conditions and dimensions. Any discrepancies must be brought to the architects attention. Like figured dimensions only. Do not scale drawings. All work shall comply with the Building Code of Australia and relevant Australian Standards.

ISSUE	DESCRIPTION	DATE
01	DA - Issue	30-01-25

CLIENT: Owner

PROJECT: ALTERATIONS AND ADDITIONS

ADDRESS: 6B TRENTWOOD PARK, AVALON BEACH

SECTIONS

PROJECT NO. -

DATE 30 January 2025

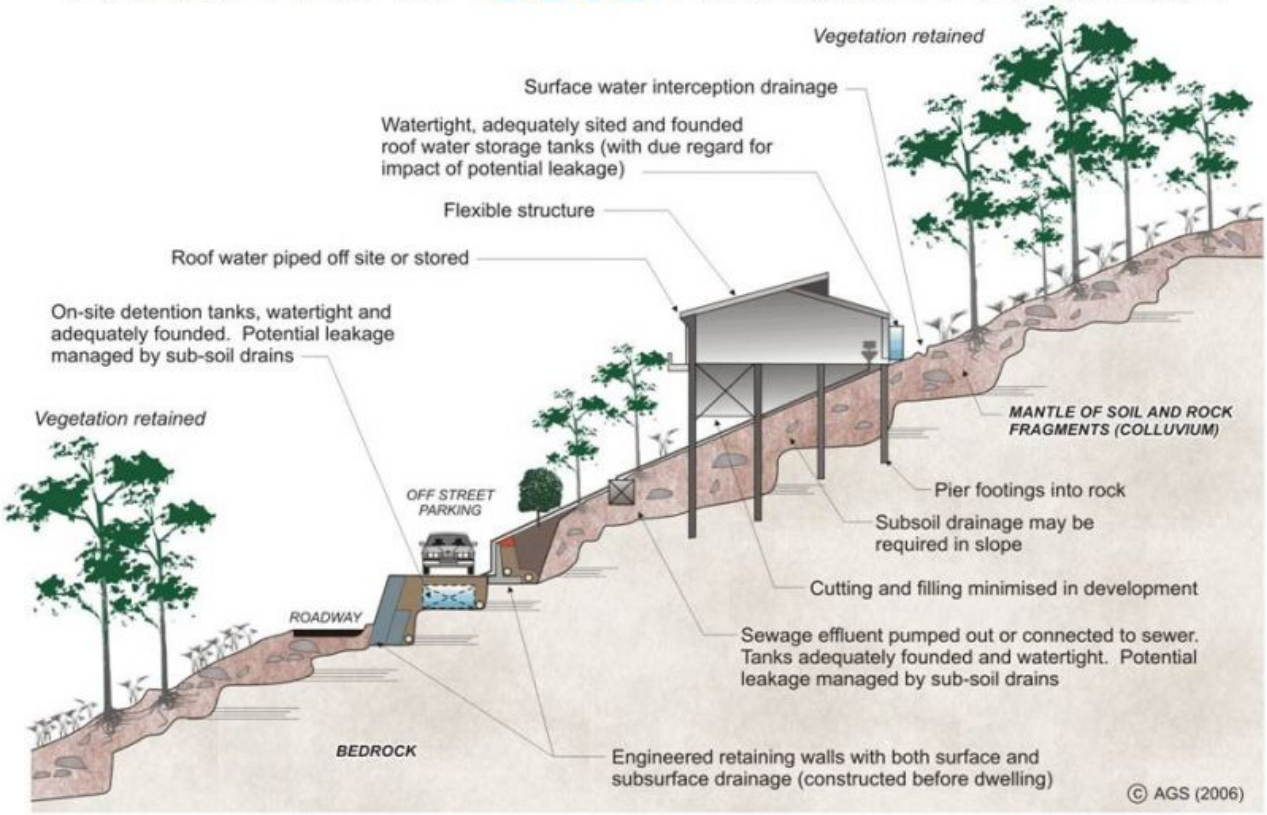
LOT: 2 DRAWN BY: MS

DP: 565776 CHECKED BY: WC

SCALE: As Indicated

DA 300

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE