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

Development Application for _____
Name of Applicant

Address of site 40 Tatiara Crescent, North Narrabeen

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

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

on this the 4/10/24 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 **40 Tatiara Crescent, North Narrabeen**

Report Date: 30/9/24

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 40 Tatiara Crescent, North Narrabeen

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 **40 Tatiara Crescent, North Narrabeen**

Report Date: 30/9/24

Author: BEN WHITE

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

Please mark appropriate box

☒ Comprehensive site mapping conducted **24/9/24**
(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 **24/9/24**

☒ 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 Granny Flat at **40 Tatiara Crescent, North Narrabeen**

1. Proposed Development

1.1 Construct a granny flat below the house by excavating to a maximum height of ~1.2m.

1.2 Other minor external additions and alterations.

1.3 Details of the proposed development are shown on 6 drawings prepared by RK Designs, Project number 24-28, sheets numbered 0, 0.1, and 2 to 5. All issue B. All dated 05/09/24.

2. Site Description

2.1 The site was inspected on the 24th September, 2024.

2.2 This residential property has dual access, it is on the high side of Tatiara Crescent, and accessed by a Right of Carriageway (ROW) off Powderworks Road. The property has an SW aspect. It is located on the steeply graded middle reaches of a hillslope. The natural slope rises from Tatiana Crescent across the property at an average angle of ~26°. The slope above and below the property continue at similar steep angles.

2.3 The steep slope between the road frontage and the downhill side of the house (Photo 1) is terraced in stable retaining walls of timber crib and dry stack sandstone composition reaching up to ~1.0m high (Photos 2 & 3). Where the slope is not supported by retaining walls, it is sufficiently covered in vegetation (Photo 4). Competent Medium Strength Sandstone outcrops and steps up the property in this location. The outcropping rock was observed to be free from significant geological defects that could affect its stability. Boulders and detached joint blocks across the

slope were observed to be resting/embedded in stable positions. The two-story house is supported on brick walls. Some of the supporting walls were observed to be supported on outcropping competent Medium Strength Sandstone. No significant signs of movement were observed in the visible supporting walls. A cut for the uphill side of the house and fill for the ROW is supported by a stable low timber sleeper retaining wall (Photo 5). The ROW runs to a stable concrete block garage on the uphill side of the property.

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. Four 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 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:

GROUND TEST RESULTS ON THE NEXT PAGE

AUGER HOLE 1 (~RL39.5) **–** AH1 (Photo 6)

Depth (m)	Material Encountered
0.0 to 0.5	**TOPSOIL**, brown, Medium Dense to Dense, dry, fine to medium grained, fine organic matter (roots) present.
0.5 to 0.6	**SOIL**, brown, Very Dense, dry, fine to coarse grained, maroon and yellow sandstone fragments included.

Refusal @ 0.6m on rock. Auger grinding. 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 (~RL36.0)	DCP 2 (~RL30.2)	DCP 3 (~RL39.5)	DCP 4 (~RL36.8)
0.0 to 0.3	Rock Exposed at Surface	10	7	14
0.3 to 0.6		9	30	25
0.6 to 0.9		4	13	22
0.9 to 1.2		#	#	#
		Refusal on Rock @ 0.7m	Refusal on Rock @ 0.7m	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 – Medium Strength Sandstone exposed at surface.
DCP2 – Refusal on Rock @ 0.7m, DCP bouncing off rock surface, white impact dust on dry tip.
DCP3 – Refusal on Rock @ 0.7m, DCP bouncing off rock surface, white impact dust on dry tip.
DCP4 – Refusal on Rock @ 0.7m, DCP bouncing off rock surface, white impact dust on dry tip.

5. Geological Observations/Interpretation

The surface features of the block are controlled by the outcropping and 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 shallow soils over

clays that fill the bench step formation. Filling has been placed across the property for landscaping. In the test locations, where the rock is not exposed, it was encountered at a depth of ~0.7m below the current surface, being slightly deeper due to the presence of fill and the stepped nature of the underlying bedrock. The outcropping sandstone on the property is estimated to be Medium Strength or better and similar strength rock is expected to underlie the entire site as all the DCP tests bounced at refusal. See Type Section attached for a diagrammatical representation of the expected ground materials.

6. Groundwater

Normal ground water seepage is expected to move over the buried surface of the rock and through the cracks. Due to the slope and elevation of the block, the water table is expected to be many metres below the base of the proposed excavation.

7. Surface Water

No evidence of significant surface flows were observed on the property during the inspection. The ROW above will provide only limited drainage diversion from surface flows as it is not guttered above the subject property.

Should the owners be aware, or if at a later time, become aware that overland flows enter the property during prolonged heavy rainfall, our office is to be contacted so appropriate drainage advice can be provided and drainage installed to intercept the flows. 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 rises across the property and continues above and below is a potential hazard (**Hazard One**). The vibrations from the proposed excavation are a potential hazard (**Hazard Two**). The proposed excavation is a potential hazard until retaining walls are in place (**Hazard Three**). The proposed excavation undercutting the footings for the W timber retaining wall is a potential hazard (**Hazard Four**).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two
TYPE	The steep slope that rises across the property and continues above and below failing and impacting on the proposed works.	The vibrations produced during the proposed excavation impacting on the surrounding structures.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (15%)
RISK TO PROPERTY	'Low' (2 x 10^{-5})	'Moderate' (2 x 10^{-4})
RISK TO LIFE	9.1 x 10^{-7}/annum	5.3 x 10^{-7}/annum
COMMENTS	This level of risk is 'ACCEPTABLE', provided the recommendations in **Section 7 & 16** are followed.	This level of risk to property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 12** are to be followed.

HAZARDS	Hazard Three	Hazard Four
TYPE	The excavation (to a depth of ~1.2m) collapsing onto the work site before retaining walls are in place.	The proposed excavation undercutting the W timber retaining wall (Photo 8) causing damage or failure.
LIKELIHOOD	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (35%)
RISK TO PROPERTY	'Moderate' (2 x 10^{-4})	'Moderate' (2 x 10^{-4})
RISK TO LIFE	8.3 x 10^{-6}/annum	5.3 x 10^{-5}/annum
COMMENTS	This level of risk 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 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 Tatiara Crescent. Roof water from the development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

11. Excavations

An excavation up to a maximum depth of ~1.2m is required to construct the proposed granny flat. The excavation is expected to be through topsoil and clay, with Medium Strength Sandstone, where it is not already exposed, expected at a depth of ~0.7m below the surface in the area of the proposed excavation.

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

12. Vibrations

Possible vibrations generated during excavations through fill, soil, and clay will be below the threshold limit for building damage utilising a domestic-sized excavator up to 16 tonnes. It is expected that the excavation will be through Medium Strength Sandstone or better.

Excavations through Medium Strength Rock or better should be carried out to minimise the potential to cause vibration damage to the subject and W neighbouring houses. Allowing ~0.5m for backwall drainage, the setbacks from the proposed excavation to the existing structures are as follows:

- ~3.5m from the W neighbouring residence.
- ~4.1m from the subject house.

Dilapidation reporting carried out on the W 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. 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 granny flat will reach a maximum depth of ~1.2m in the SE corner. Allowing 0.5m for back wall drainage, the excavation will come flush with a timber retaining wall which supports fill for the E neighbouring property (Photo 8).

As such, the timber retaining wall 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 or top of Medium Strength Rock, whichever is encountered first, towards the surrounding structures and boundaries. This line reduces to 30° through the fill and soil.

Given the shallow depth to rock, we think it is likely the wall is supported on rock. However, to be sure, where the wall falls within the zone of influence of the excavation, exploration pits along the wall will need to be put down by the builder to determine the foundation depth and material. These are to be inspected by the geotechnical consultant.

If the foundations are confirmed to be supported on rock, the excavation may commence. Otherwise, the W as well as the N side of the cut will need to be permanently supported prior to the commencement of the excavation through rock, or during the excavation process in a staged manner due to the steep grade of the slope, to protect the integrity of the timber retaining wall, and so cut batters are not left unsupported. The support will need to be designed by the structural engineer in consultation with the Geotechnical Consultant. See the site plan attached for the minimum extent of the required shoring shown in blue.

Medium Strength Sandstone or better is expected to stand at vertical angles unsupported subject to approval by the geotechnical consultant.

Upslope runoff is to be diverted from the cut faces by sandbag mounds or other diversion works. The materials and labour to construct the 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.

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 face that can occur over time, when unfavourable jointing is obscured behind the excavation face. Additionally, retaining walls will help control seepage and to prevent minor erosion and sediment movement.

All excavation spoil is to be removed from site following the current Environmental Protection Agency (EPA) waste classification guidelines.

14. Retaining Walls

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

Table 1 – Likely Earth Pressures for Retaining Walls

Unit	Earth Pressure Coefficients		
	Unit weight (kN/m^3)	'Active' K_a	'At Rest' K_0
Fill and Topsoil	20	0.40	0.55
Residual Clays	20	0.35	0.45
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 wall, do not account for any surcharge loads from the slope above and assume retaining walls are fully

drained. Rock strength and relevant earth pressure coefficients are to be confirmed on site by the geotechnical consultant.

All retaining walls are to have sufficient back-wall drainage and be backfilled immediately behind the wall 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 walls the full hydrostatic pressures are to be accounted for in the retaining wall design.

15. Foundations

Due to the steep grade of the slope below the location of the proposed works, piers socketed at least ~0.1m into Medium Strength Sandstone are suitable footings for the proposed granny flat. Where this material is not exposed, it is expected at a depth of ~0.7m below the current surface. Where footings are over an exposed sloping rock surface, they may be supported off level pads cut or formed on the rock surface and fixed with suitable bar grouted / epoxied 0.4m into the rock.

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. Site Maintenance/Remedial Works

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. 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.

- The exploration pits to determine the foundation material along the E timber retaining wall (Photo 8) are to be inspected by the geotechnical consultant to determine if permeant support prior to excavation is required. This is to occur before the bulk excavation for the granny flat commences.

- During the excavation process, the geotechnical consultant is to inspect the excavations as they approach no less than 1.0m horizontally from the foundations of the wall/underpins to confirm the stability of the cut to go flush with the footings.

- 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:

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REGISTERED PROFESSIONAL GEOSCIENTIST
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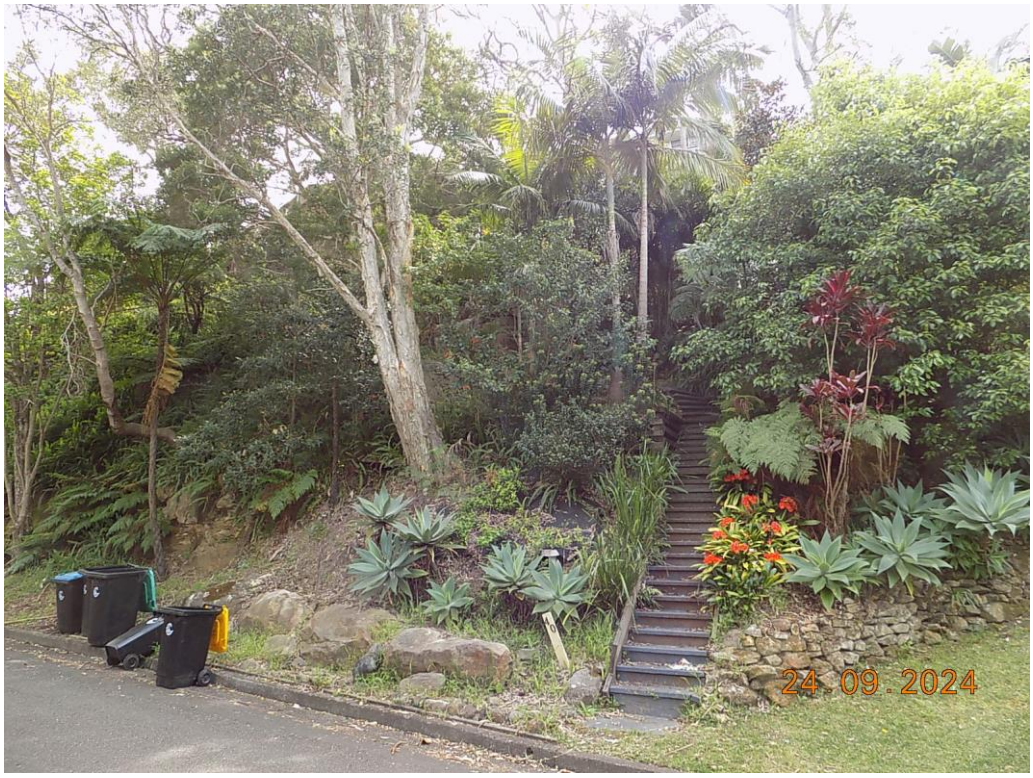


Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7 – downhole is left to right

Photo 8

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

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

1 SITE AND ROOF PLAN
1 : 200

DIAL BEFORE YOU DIG www.1100.com.au

GENERAL NOTES
. All dimensions are to be confirmed on site by the builder/subcontractor, any incongruencies must be reported to the Designer before commencement of any work.
. No Survey has been made on the boundaries, all bearings, distances and areas have been taken from the contour survey plan. A Survey must be carried out to confirm the exact boundary locations.
. No construction work shall commence until a site survey confirming the site boundaries has been completed. The contractor is to ensure that the boundary setbacks are confirmed and used, the boundary setbacks take precedence over all other dimensions. The Survey work must be performed by a registered Surveyor.
. In the event of encountering any discrepancies on these drawings, specification or subsequent instructions issued, the Builder/Subcontractor shall contact the designer before proceeding further with any work.
. All construction, control joints and expansion joints in the wall, floors, other locations shall be in strict accordance with the Structural Engineering details. No joints or breaks other than specified, are allowed without written permission from the Engineer.
. Measurements for the fabrication of secondary components such as, windows, doors, internal frames, structural steel components and the like, are not to be taken from these documents. Measurements must be taken on site to suit the work as constructed.
. All structural components shall be in strict accordance to details and specifications as prepared by a structural engineer.
. All existing structures need to be examined for structural adequacy, and it is the Contractor's responsibility to ensure that a certificate of structural adequacy is available prior to the start of any work.

drawn	date	issue	description
LS	02/09/24	A	ISSUE FOR DA
LS	05/09/24	B	ISSUE FOR DA

project
PROPOSED CONSTRUCTION OF A GRANNY FLAT AT 40 TATIARA CRESCENT NORTH NARRABEEN NSW 2101 LOT 311/-/DP238382

bdaa ACCREDITED BUILDING DESIGNER

6/7 Parkes Street, Parramatta NSW 2150
www.rkdesigns.com.au
admin@rkdesigns.com.au
02 9633 4797
abn. 68 659 200 389
spaces designed for life

client
ANDREW HERFT
Bungalow Homes

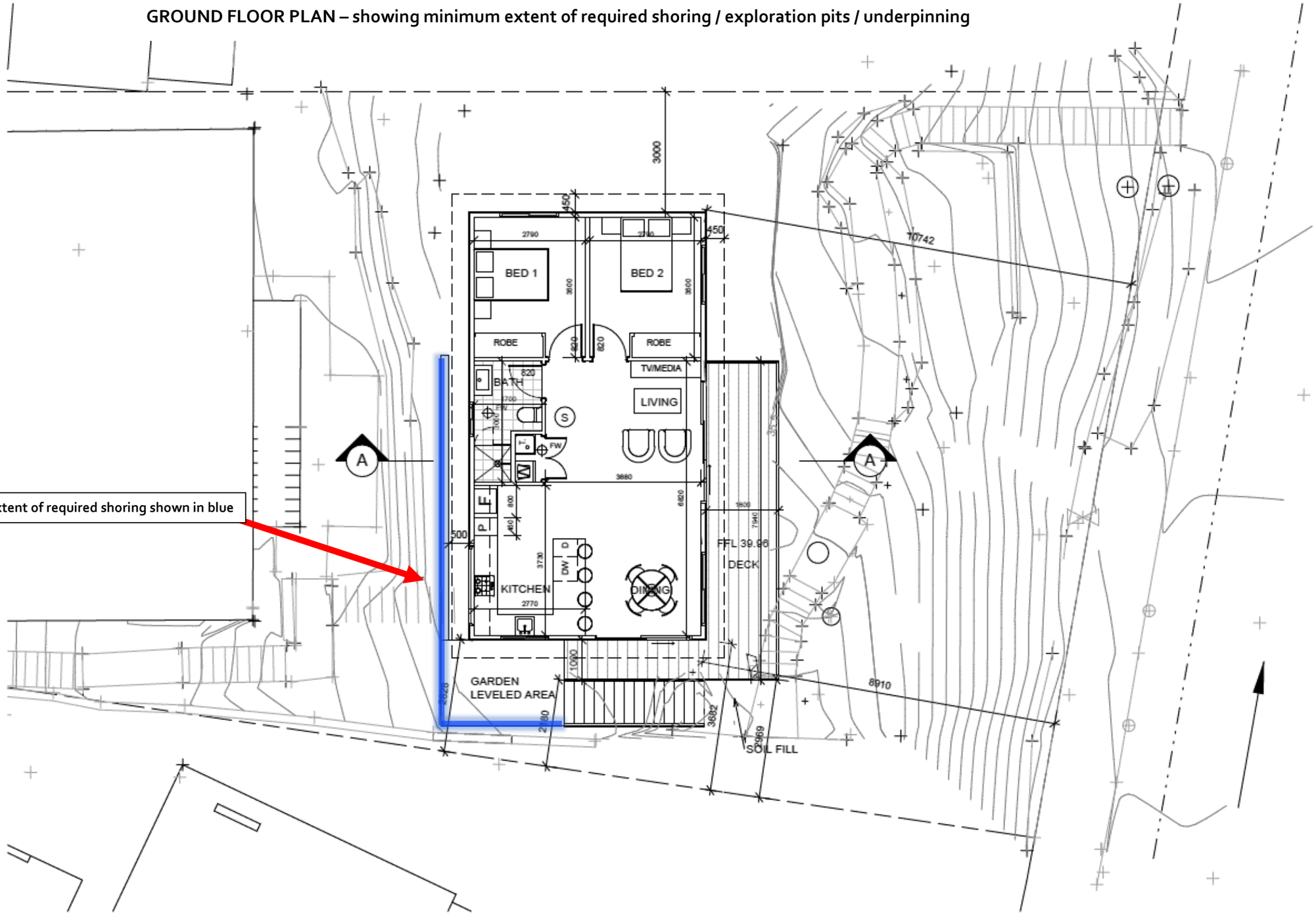
true north

drawing
SITE AND ROOF PLAN

project no	date	sheet no.	scale @ A3	issue	checked
24-28	02/09/24	2	1 : 200	A	?

RK DESIGNS

GROUND FLOOR PLAN – showing minimum extent of required shoring / exploration pits / underpinning



LEGEND

FLOOR WASTE fw

SMOKE ALARM (S)

(HARD WIRED PHOTO-ELECTRIC SMOKE ALARMS TO BE INSTALLED AS PER CLAUSE 9.5.4 OF THE HOUSING PROVISIONS 2022 & AS 3786)

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

1 GROUND FLOOR PLAN
1 : 100

DIAL BEFORE YOU DIG www.1100.com.au

GENERAL NOTES
. All dimensions are to be confirmed on site by the builder/subcontractor, any incongruencies must be reported to the Designer before commencement of any work.
. No Survey has been made on the boundaries, all bearings, distances and areas have been taken from the contour survey plan. A Survey must be carried out to confirm the exact boundary locations.
. No construction work shall commence until a site survey confirming the site boundaries has been completed. The contractor is to ensure that the boundary setbacks are confirmed and used, the boundary setbacks take precedence over all other dimensions. The Survey work must be performed by a registered Surveyor.
. In the event of encountering any discrepancies on these drawings, specification or subsequent instructions issued, the Builder/Subcontractor shall contact the designer before proceeding further with any work.
. All construction, control joints and expansion joints in the wall, floors, other locations shall be in strict accordance with the Structural Engineering details. No joints or breaks other than specified, are allowed without written permission from the Engineer.
. Measurements for the fabrication of secondary components such as, windows, doors, internal frames, structural steel components and the like, are not to be taken from these documents. Measurements must be taken on site to suit the work as constructed.
. All structural components shall be in strict accordance to details and specifications as prepared by a structural engineer.
. All existing structures need to be examined for structural adequacy, and it is the Contractor's responsibility to ensure that a certificate of structural adequacy is available prior to the start of any work.

drawn	date	issue	description
LS	02/09/24	A	ISSUE FOR DA
LS	05/09/24	B	ISSUE FOR DA

project
PROPOSED CONSTRUCTION OF A GRANNY FLAT AT 40 TATIARA CRESCENT NORTH NARRABEEN NSW 2101 LOT 311/-/DP238382

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spaces designed for life

client
ANDREW HERFT
Bungalow Homes

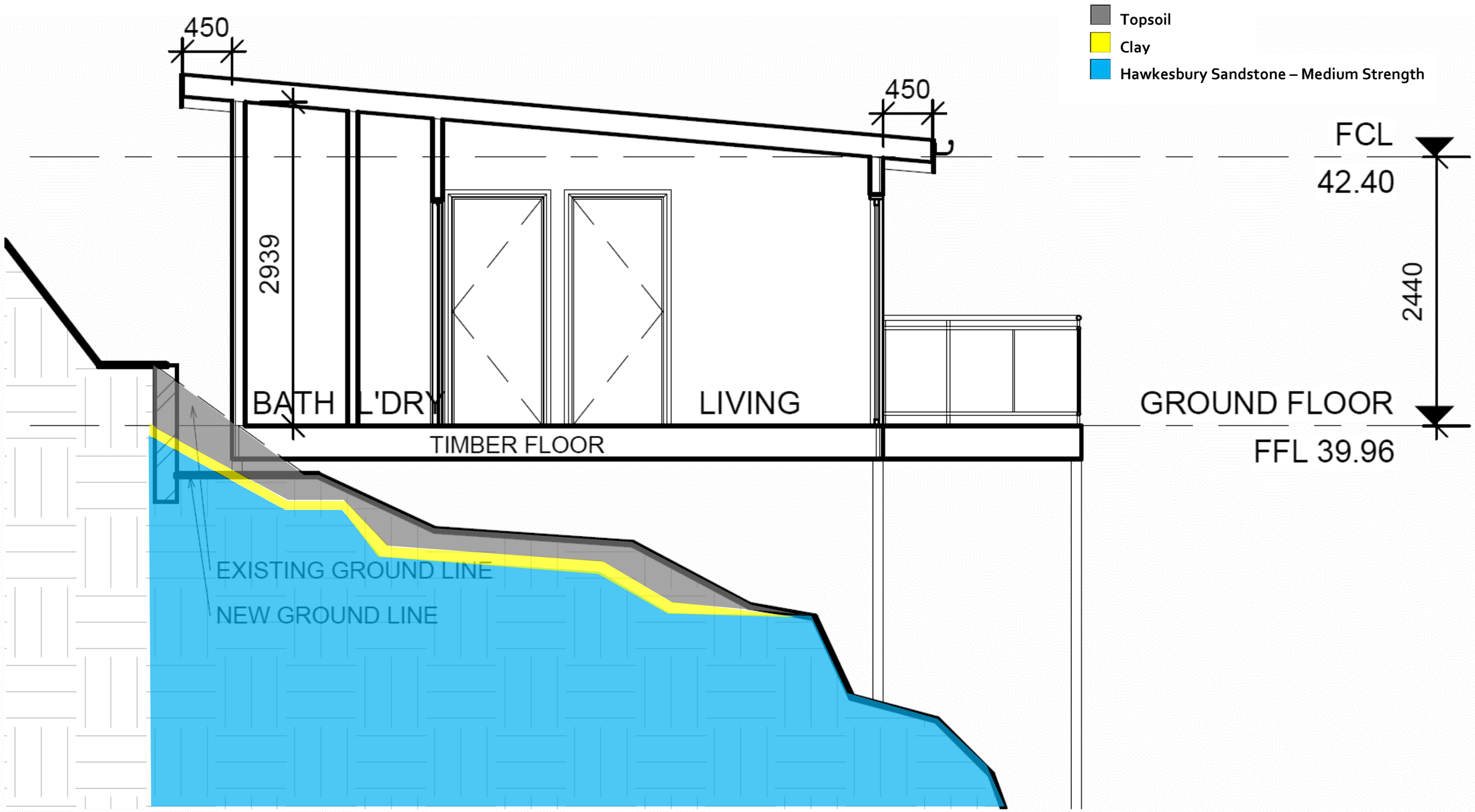
true north

drawing
GROUND FLOOR PLAN

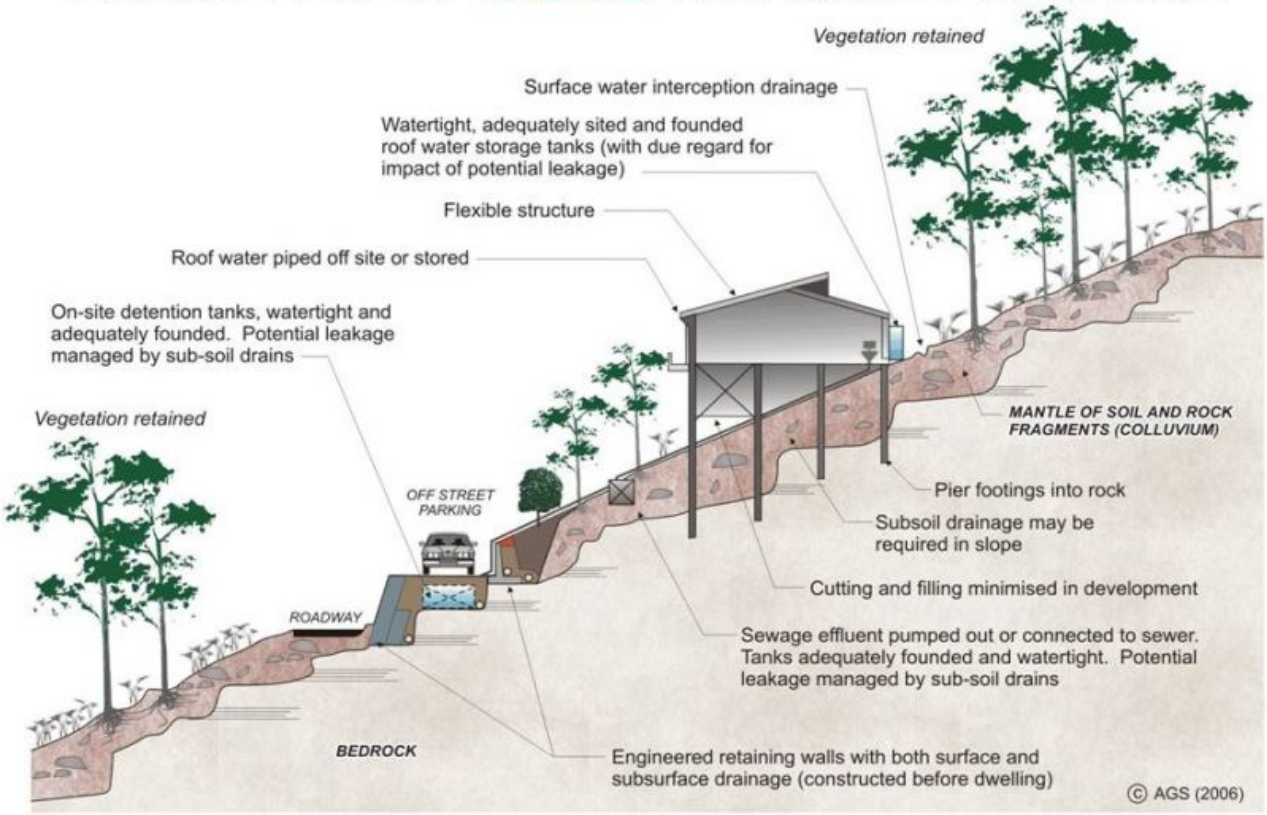
project no	date	sheet no.	scale @ A3	issue	checked
24-28	02/09/24	3	1 : 100	A	?

RK DESIGNS

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE