74 Grandview Drive, Newport

Geotechnical Comments for Section 4.55

We have reviewed the existing geotechnical report, the original plans, and the 6 amended plans by Jamie King Landscape Architect, Project number 21060, drawings numbered Sht-101 to Sht-106, Issue H, dated 20/4/22.

The changes are as follows:

- Construct a new addition to the uphill side of the house.
- Various other minor modifications to the house and external areas.

The changes are considered minor from a geotechnical perspective and do not alter the recommendations or the risk assessment in the original report carried out by this firm numbered J3242 and dated the 17th March, 2021.

White Geotechnical Group Pty Ltd.

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

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

Development Application for _____
Name of Applicant

Address of site 74 Grandview Drive, Newport

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 17/3/21 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least $10million.

I:
Please mark appropriate box

☒ have prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009

☒ am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009

☐ have examined the site and the proposed development in detail and have carried out a risk assessment in accordance with Section 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm that the results of the risk assessment for the proposed development are in compliance with the Geotechnical Risk Management Policy for Pittwater - 2009 and further detailed geotechnical reporting is not required for the subject site.

☐ have examined the site and the proposed development/alteration in detail and I am of the opinion that the Development Application only involves Minor Development/Alteration that does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements.

☐ have examined the site and the proposed development/alteration is separate from and is not affected by a Geotechnical Hazard and does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements.

☐ have provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report

Geotechnical Report Details:

Report Title: Geotechnical Report **74 Grandview Drive, Newport**
Report Date: 17/03/21

Author: BEN WHITE

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

Documentation which relate to or are relied upon in report preparation:

Australian Geomechanics Society Landslide Risk Management March 2007.

White Geotechnical Group company archives.

I am aware that the above Geotechnical Report, prepared for the abovementioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council as the basis for ensuring that the Geotechnical Risk Management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature _____

Name Ben White

Chartered Professional Status MScGEOLAusIMM CP GEOL

Membership No. 222757

Company White Geotechnical Group Pty Ltd

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1(a) - Checklist of Requirements for Geotechnical Risk Management Report for Development Application

Development Application for _____
Name of Applicant

Address of site 74 Grandview Drive, Newport

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 **74 Grandview Drive, Newport**

Report Date: 17/3/21

Author: BEN WHITE

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

Please mark appropriate box

☒ Comprehensive site mapping conducted **24/2/21**
(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 **24/2/21**

☒ 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 Pool at **74 Grandview Drive, Newport**

1. Proposed Development

1.1 Install a new pool in the SE corner of the property by excavating to a maximum depth of ~1.2m.

1.2 Various other minor external alterations.

1.3 Details of the proposed development are shown on 7 drawings prepared by Jamie King Landscape Architect, project number 21060, drawings numbered Sht-101 to 106 and 201, Issue C, dated 12/3/21.

2. Site Description

2.1 The site was inspected on the 24th February, 2021.

2.2 Grandview Drive wraps around the uphill, W, and downhill sides of this residential property (Photo 1). The property has a SE aspect. It is located on the moderate to steeply graded upper middle reaches of a hillslope. The natural surface rises across the property at an average angle of ~20°. The slope above the property continues at decreasing angles. The slope below the property continues at increasing angles.

2.3 At the road frontage, a concrete driveway runs to a stable carport attached to the uphill side of the house (Photo 2). The cut for the driveway is supported by a mortared sandstone block retaining wall reaching ~1.2m high (Photo 3). The wall displays some cacking through the mortar but no signs of deflection and is considered stable. The part two-storey brick house is supported on brick walls (Photo 4). The supporting walls display no significant signs of movement. A large cut and fill encompasses the entire NE side of the property to create a level platform for the house and surrounding lawns and gardens. The cut is supported by a stable mortared

sandstone block retaining wall reaching ~2.0m high (Photo 5). The fill is supported by a concrete crib retaining wall reaching ~4.0m high (Photo 6). The condition of this retaining wall was difficult to determine as it has a thick covering of vegetation at the time of the inspection. However, from what could be seen of the wall and its surrounds, it appears stable.

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

GROUND TEST RESULTS ON NEXT PAGE

AUGER HOLE 1 (~RL99.9) **–** AH1 (Photo 7)

Depth (m)	Material Encountered
0.0 to 0.6	**FILL**, disturbed sandy soil, dark brown and brown, loose to medium dense, dry, fine to coarse grained with fine trace organic matter and trace clay.
0.6 to 0.9	**FILL**, disturbed clay, brown, firm, damp, fine to coarse grained with fine trace organic matter.
0.9 to 1.1	**FILL**, disturbed sandy soil, dark brown and brown, loose to medium dense, dry, fine to coarse grained with fine trace organic matter and trace clay.

Refusal @ 1.1m on unknown obstruction. 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 (~RL98.7)	DCP 2 (~RL99.9)
0.0 to 0.3	6	4F
0.3 to 0.6	11	7
0.6 to 0.9	16	8
0.9 to 1.2	47	22
1.2 to 1.5	39	21
1.5 to 1.8	32	19
1.8 to 2.1	#	25
2.1 to 2.4		22
2.4 to 2.7		19
2.7 to 3.0		30
3.0 to 3.3		53
3.3 to 3.6		#
	End of Test @ 1.8m	End of Test @ 3.3m

#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, clean dry tip.
DCP2 – End of test @ 3.3m, DCP still very slowly going down, brown dust on dry tip.

5. Geological Observations/Interpretation

The surface features of the block are controlled by the underlying sandstone bedrock that steps down 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. The rock is overlain by a manmade fill between the house and the lower road frontage over sandy soils and sandy clays that fill the bench step formation. In the test locations, the depth to rock ranged between 1.8 to 3.3m below the current surface, being slightly deeper due to the presence of fill, the stepped nature of the underlying bedrock, and what is interpreted to be a variable weathering profile.

We note solid refusal on rock did not occur in any of the tests so Medium Strength Rock or stronger is not confirmed to underly the property. However, the property is mapped as Hawkesbury Sandstone and Medium Strength Sandstone was observed to be outcropping above and below the property. Thus, it is interpreted that the sandstone continues under the property. As the DCP was still very slowly going down at the end of the tests, the underlying sandstone on the property is estimated to be Very Low to Low Strength Sandstone that becomes progressively stronger with depth. 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. Normal sheet wash from the slope above will be intercepted by the street drainage system for Grandview Drive above.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed beside the property. The moderate to steeply graded land surface that falls across the property and continues above and below is a potential hazard (**Hazard One**). The excavation for the proposed pool is a potential hazard until the retaining walls are in place (**Hazard Two**). The proposed excavation undercutting the footings for the house is a potential hazard (**Hazard Three**).

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	The moderate to steep slope that falls across the property and continues above and below failing and impacting on the property.	The excavation for the proposed pool collapsing onto the work site before retaining walls are in place.	The proposed excavation undercutting the footings of the house causing failure.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (20%)	'Medium' (15%)	'Medium' (35%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	8.3×10^{-7}/annum	3.5×10^{-5}/annum	5.0×10^{-5}/annum
COMMENTS	'ACCEPTABLE' level of risk to life & property.	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.	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 Grandview Drive. Roof water from the development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

11. Excavations

An excavation to a maximum depth of ~1.2m is required to construct the proposed pool. The excavation is expected to be taken entirely through manmade fill.

It is envisaged that excavations through fill can be carried out with an excavator and bucket.

12. Vibrations

Possible vibrations generated during excavations through fill will be below the threshold limit for building damage.

13. Excavation Support Requirements

The proposed excavation for the pool will be taken to a maximum depth of ~1.2m and will be positioned within the footprint of an existing timber deck (that will partially remain). Additionally, the excavation will be set back 0.8m from a tile-paved patio that extends off the downhill side of the house. Thus, the timber deck and patio will be within the zone of influence of the proposed excavation. Before any excavation commences, the foundations of the timber deck and patio adjacent to the pool excavation are to be underpinned to below the zone of influence of the proposed excavation if they are not already supported below this line.

Exploration pits along the deck and patio 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 discovered to be supported below the zone of influence, the excavation may commence. If they are not below the zone of influence of the excavation, in this instance, the area above a theoretical 30° line from horizontal (1.0V to 1.7H) extending from the base of the pool excavation towards the footings, the deck footings will need to be underpinned prior to the excavation commencing.

The remaining sides of the cut will stand at near-vertical angles for short periods of time until the pool structure is installed provided the cut batters are kept from becoming saturated. If the cut batters through soil and clay remain unsupported for more than a few days before the commencement of the pool construction, they are to be supported with typical pool shoring, such as sacrificial form ply, until the pool 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 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 pool structure are to be organised so on completion of the excavation it 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 IS ON THE NEXT PAGE

Table 1 – Likely Earth Pressures for Retaining Structures

Unit	Earth Pressure Coefficients		
	Unit weight (kN/m^3)	'Active' K_a	'At Rest' K_0
Fill	20	0.4	0.55

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

It is to be noted that the earth pressures in Table 1 assume a level surface above the structure, do not account for any surcharge loads and assume retaining structures are fully drained. Rock strength and relevant earth pressure coefficients are to be confirmed on site by the geotechnical consultant.

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

15. Foundations

Due to the steep grade of the slope, piers taken to and embedded at least 0.8m into the underlying Very Low Strength Sandstone are suitable footings for the proposed pool. If the proposed pool is pre-cast fibreglass or similar, it can be seated on a piered concrete slab. This material is expected at depths of between 1.5 to 3.0m below the current surface. Thus, the expected footings depths will be between 2.3 to 3.8m below the current surface, taken from the downhill side of the footing. Assume a maximum allowable bearing pressure of 600kPa for footings supported off Very Low 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. Inspections

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

- The geotechnical consultant is to inspect any test pits dug by the builder to verify foundation depth and material of the existing footings.

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

White Geotechnical Group Pty Ltd.

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

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7: AH1 – Downhole is from 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.

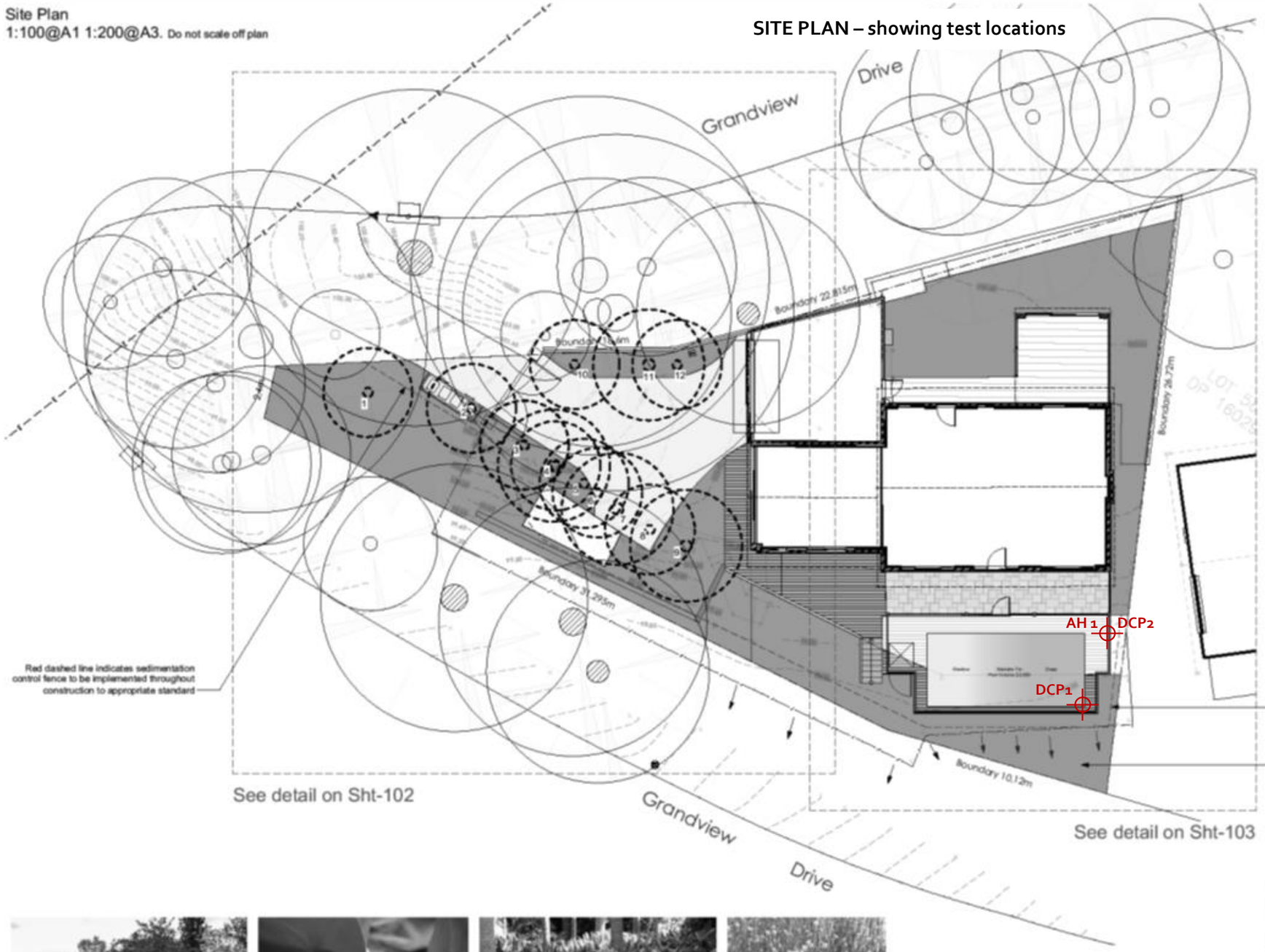
- This report should not be applied to any other project other than that outlined in section 1.0.

- 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
1:100@A1 1:200@A3. Do not scale off plan

SITE PLAN – showing test locations



Red dashed line indicates sedimentation control fence to be implemented throughout construction to appropriate standard

Red dashed line indicates sedimentation control fence to be implemented throughout construction to appropriate standard

Green shaded area indicates compliant landscape area

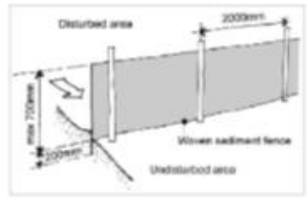
AREA CALCULATION		
	AREA (m2)	PERCENTAGE
Site	549.37	
Existing Landscape total	222.44	40.49%
Proposed Landscape total	213.28	38.82%

Existing Tree Table

Number	Name	Size (H X W)	Action
1	Cocus Palm	10 X 4	Remove
2	Cocus Palm	10 X 4	Remove
3	Cocus Palm	10 X 4	Remove
4	Cocus Palm	10 X 4	Remove
5	Cocus Palm	10 X 4	Remove
6	Cocus Palm	10 X 4	Remove
7	Cocus Palm	10 X 4	Remove
8	Cocus Palm	10 X 4	Remove
9	Cocus Palm	10 X 4	Remove
10	Cocus Palm	10 X 4	Remove
11	Cocus Palm	10 X 4	Remove
12	Cocus Palm	10 X 4	Remove

Legend

MULCH AREA
TURF AREA
TIMBER DECKING
CONCRETE PAVING
UNIT PAVING
STAIRS
PEBBLE
GRAVEL
COBBLESTONE
TIMBER
WATER
MASONRY RETAINING WALL
STONE RETAINING WALL
TIMBER RETAINING WALL
BOULDER RETAINING WALL
SITE OR WORKS BOUNDARY
PROPOSED LEVEL
TOP OF WALL LEVEL
MATERIAL NAME
SURFACE FALL DIRECTION
SURFACE DRAINS
SURVEY (SOIS GREY LINES)
EXISTING TREE TO RETAIN
EXISTING TREE TO REMOVE
EXISTING ROCK OUTCROP



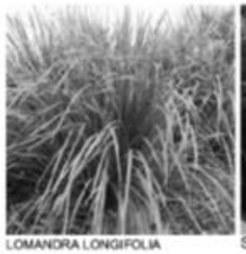
Sedimentation Control Fence
Not to scale.
Source: www.yourhome.gov.au

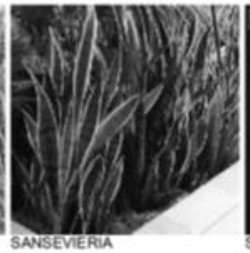

ACER


ALPINIA


CLIVIA


ISOLEPIS


LOMANDRA LONGIFOLIA


SANSEVIERIA


SYZYGIUM


TRACHELOSPERMUM


WESTRINGIA

PLANT LIST (FOR WHOLE SITE)

ID	Quantity	Latin Name	Common Name	Scheduled Size	Mature Height	Mature Spread
9	106	9	9	9	9	9
Acer	1	Acer palmatum	Japanese Maple	100lt	5 - 10m	2.0 - 3.5m
Alp cae	10	Alpinia caerlea	Ginger	200mm	0.9 - 1.5m	0.9 - 1.2m
Cli min	13	Clivia miniata	Bush Lily	200mm	0.45 - 0.6m	0.3 - 0.6m
Isol nod	17	Isolepis nodosa	Knobby Club-rush	150mm	0.6 - 0.75m	0.3 - 0.6m
Loma lon	11	Lomandra longifolia	Spiny-headed Mat-Rush	150mm	0.75 - 0.9m	0.9 - 1.2m
SansTri	15	Sansevieria trifasciata	Mother in law toung	200mm	0.3m	0.8m
Syzy aus	11	Syzygium australe 'Resilience'	Lilly Pilly	200mm	5 - 10m	3.5 - 6m
Tra tri	15	Trachelospermum 'Tricolour'	Star Jasmine	100mm / Tube	3 - 5m	3.5 - 6m
West fru	13	Westringia fruticose	Coastal Rosemary	150mm	0.9 - 1.5m	0.9 - 1.2m

Notes:
- Do not scale off plan.
- Contractors to check all measurements onsite before quoting or commencing work.
- If discrepancies arise, contact the Landscape Architect.
- This design is copyright and is not to be reproduced in anyway without written consent of Jamie King Landscape Architect.
- This plan is not based on a registered survey and is therefore not guaranteed accurate in scale or dimension. All dimensions are indicative and may be adjusted onsite within the bounds of the approved document and the relevant standards and codes.

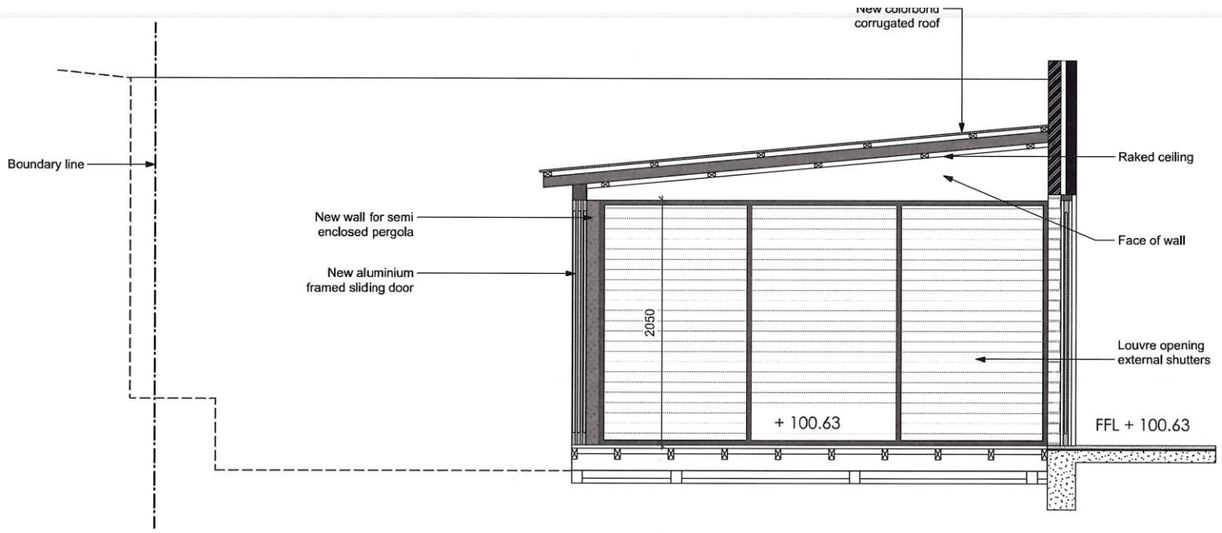
ISSUE	DATE	REVISION
C	12/03/21	Issue C for DA
B	28/02/21	DRAFT issue for review
A	05/02/21	DRAFT issue for review

JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE

PROJECT: 74 Grandview Drive, Newport
PROJECT #: 21060
CLIENT: HSU
DWG: Master Landscape Plan
DATE: See above
SCALE @ A1: See Plan
DRAWN: WPS
CHKD: JK
DWG #: Sht-101
REVISION:

Jamie King Landscape Architect
84 Palmgrove Rd, Avalon, NSW, 2107 T: 0421 517 991 E: jamie@jamieking.com.au
W: www.jamieking.com.au

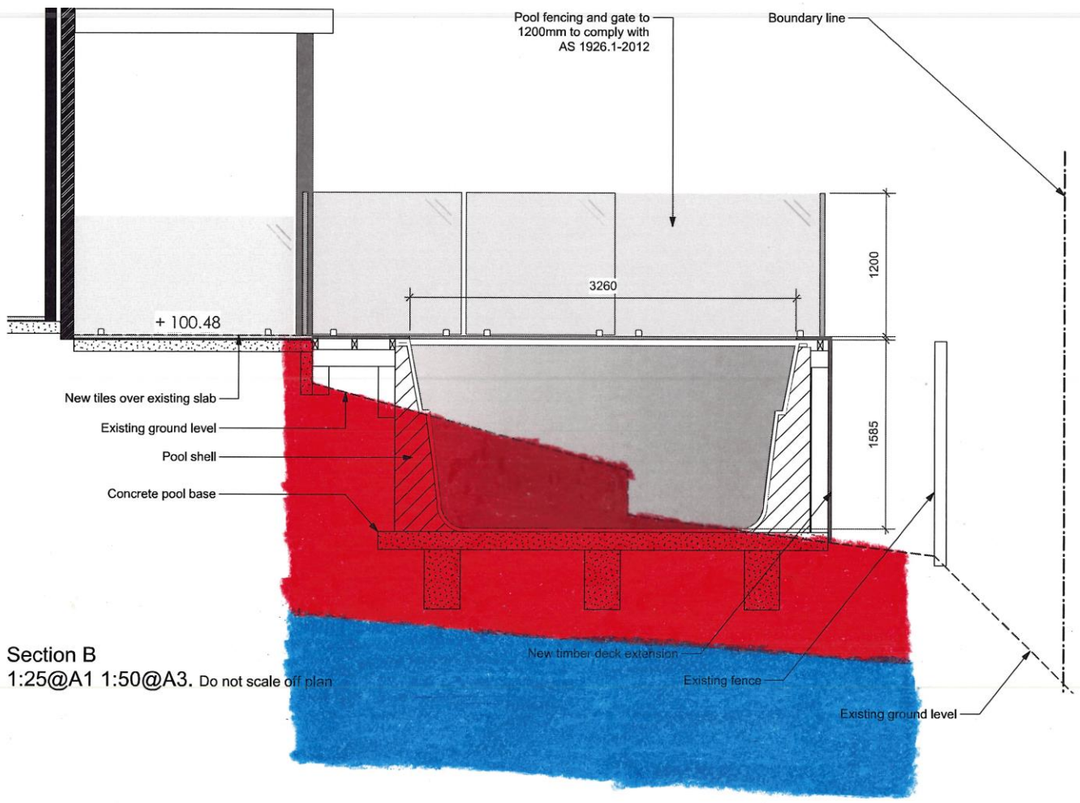
TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



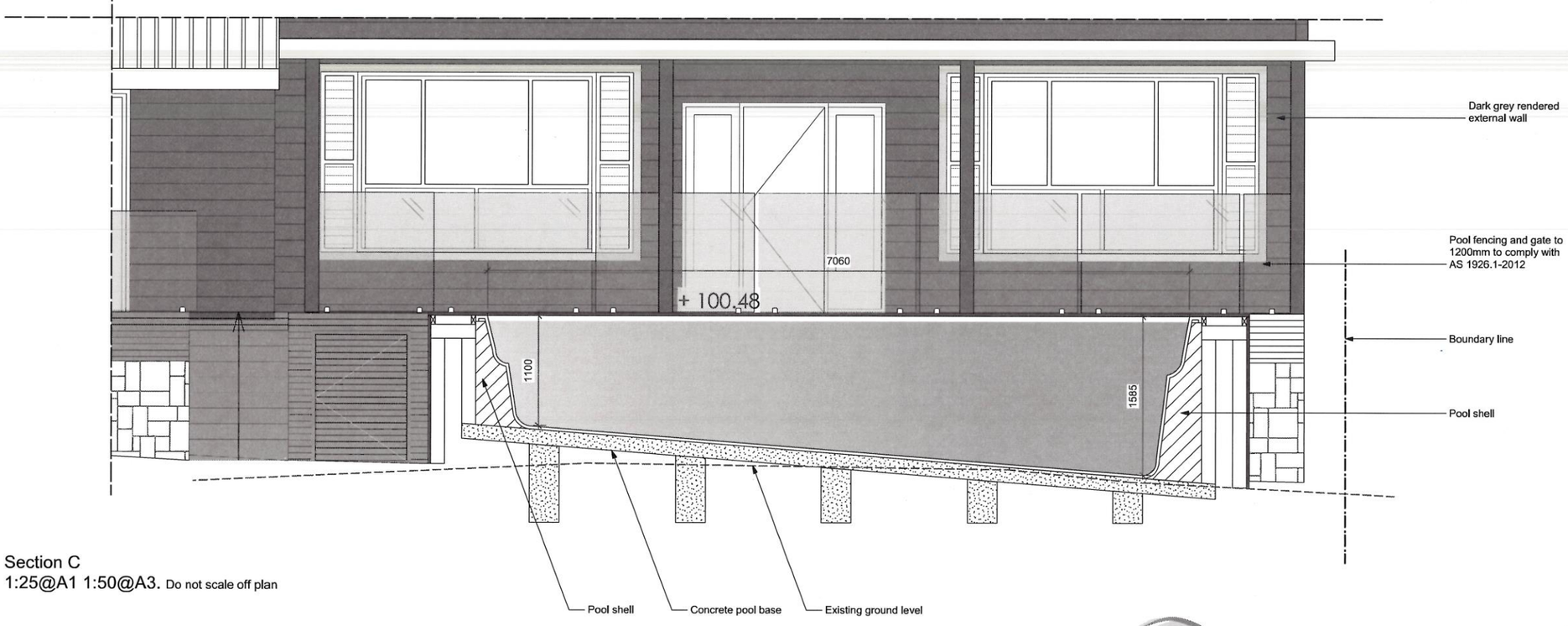
Section A
1:25@A1 1:50@A3. Do not scale off plan

Fill

Hawkesbury Sandstone – Very Low Strength. Rock is expected to become progressively stronger with depth.



Section B
1:25@A1 1:50@A3. Do not scale off plan



Section C
1:25@A1 1:50@A3. Do not scale off plan

Notes:
>Do not scale off plan.
>Contractors to check all measurements onsite before quoting or commencing work.
>If abnormalities arrise, contact the Landscape Architect.

>This plan is not based on a registered survey and is therefore not guaranteed accurate in scale or dimension. All dimensions are indicative and may be adjusted onsite within the bounds of the approved document and the relevant standards and codes.

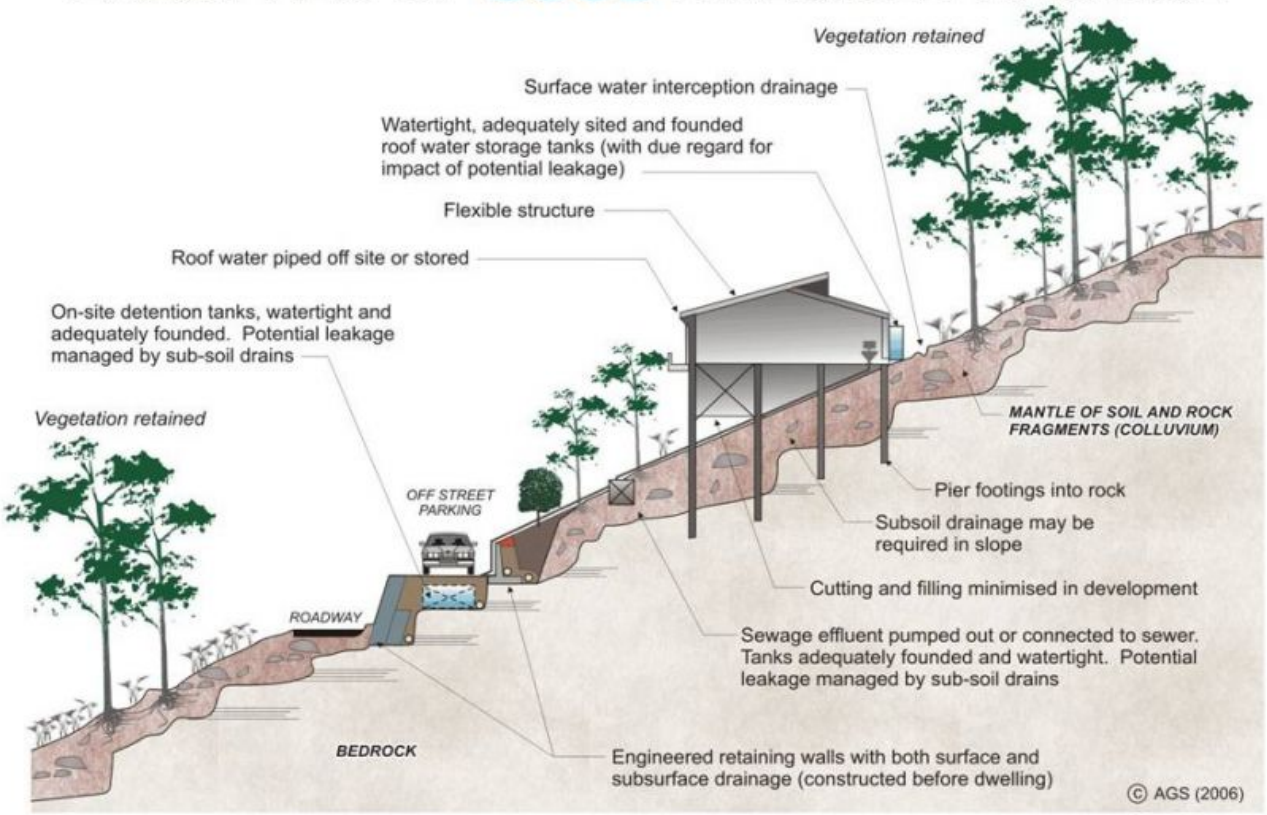
ISSUE	DATE	REVISION
C	12/03/21	Issue C for DA
B	28/02/21	DRAFT issue for review
A	05/02/21	DRAFT issue for review

PROJECT: 74 Grandview Drive, Newport — PROJECT # 21060
CLIENT: HSU — DATE # See above — DWG # Sht-106
DWG: Section — SCALE @ A1 See Plan — DRAWN WPS — CHKD JK — REVISION

JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE

Jamie King Landscape Architect
84 Palmgrove Rd, Avalon, NSW, 2107 **T:** 0421 517 991 **W:** www.jamieking.com.au **E:** jamie@jamieking.com.au

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE