COPY

175 Titania Road,
Oberon, NSW 2787

Development Application for subdivision of Lot L 1 DP 1089826

Statement of Environmental Effects

21 August 2014

fragar
planning & development

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Contents

Introduction

Fragar Planning & Development has been engaged by Chris and Vanessa O'Neill to prepare and submit a Development Application for the subdivision of Lot L 1 DP 1089826 into 49 portions (48 portions and a remainder). The proposed subdivision plan is illustrated in **Appendix 1**.

In order to appropriately address all the environmental and design issues that apply to the subject site and the proposed development, the Development Application has been formulated as follows:

- Project management and town planning by *Fragar Planning & Development*;
- Plans prepared by *CEH Survey- Consulting land, engineering and mining surveyors*;
- Geotechnical advice prepared by Macquarie Geotech, Geotechnical Engineers and Engineering Geologists.
- Intersection design by *CEH Survey- Consulting land, engineering and mining surveyors*;

This Statement of Environmental Effects (SoEE) includes:

- An analysis of the subject site and of the surrounding locality;
- A description of the proposed development;
- An analysis of the proposal against the provisions of the *Oberon LEP 2013*, *Oberon Development Control Plan*, relevant SEPPs and Deemed SEPPs, and other relevant statutory controls that apply to the site;
- Conclusion.

This SoEE is submitted in accordance with Schedule 1 of the *Environmental Planning and Assessment Regulation 2000* for the purposes of:

- Demonstrating that the environmental impact of the development has been considered; and
- Outlining the steps to be undertaken to protect the environment and to mitigate any potential harm, if necessary.

It is the conclusion of this SoEE that the proposal is consistent with the objectives and provisions of the *Oberon LEP 2013* and the *Oberon Development Control Plan 2001*, with the exception of the departure from the minimum lot size control applicable to the application site.

A concurrent planning proposal has been prepared and submitted to facilitate the departure from clauses 4.1A (3)(b) and (c) of the *Oberon Local Environmental Plan 2013* restricting the minimum lot size to 2 hectares on the property. Once approval has been received for the planning proposal, the minimum lot sizes as proposed in this Development Application will comply with the LEP requirement.

The Locality and Subject Site

The Site and Site Context

The site is located approximately 5 km south-east of Oberon. The total area of Lot 1 DP 1089826 is 178 hectares. The part of the site that is the subject of the planning proposal is shown outlined in blue in Diagram 1 and will be referred to as the *application site*. The application site is 101.61 hectares and will be subdivided into 48 portions. The application site contains a dwelling and a shed. The application site is shown highlighted in yellow and outlined in blue in **Diagram 1**.

Diagram 1: Arial photo showing Lot 1 DP 1089826 yellow and the application site outlined in blue.

The land to the south, east, and south-west of the site is zoned RU 1 – Primary Production and is rural in nature. The land to the north and west is zoned R5 – Large Lot Residential in terms of the *Oberon Local Environmental Plan 2013*. Directly to the west opposite Titania Road is Titania Estate, which is a large lot residential development. The minimum lot size of the land zoned RU1 – Primary Production is 100 hectares. The minimum lot size of the land zoned R5 – Large Lot Residential is 2 hectares.

The north-western part of 175 Titania Road, Oberon, NSW, 2787 is zoned R5 – Large Lot Residential and the south-eastern part is zoned RU1 – Primary Production, as shown on **Diagram 2**. A minimum and average lot size of 2 hectares applies to the application site in terms of *LEP 2013* as shown on **Diagram 3**. The site is not mapped as Flood Liable Land or Heritage Item.

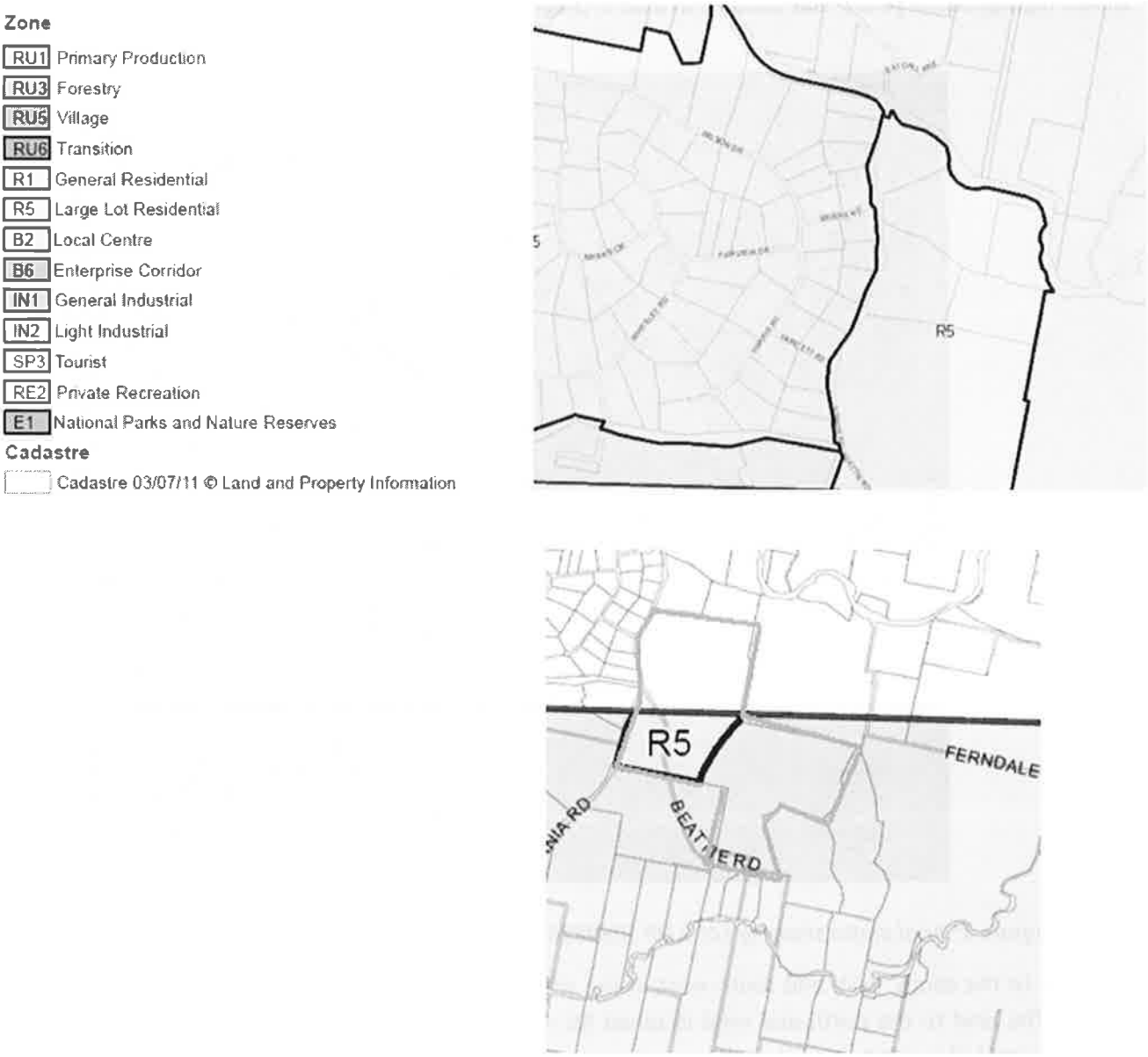
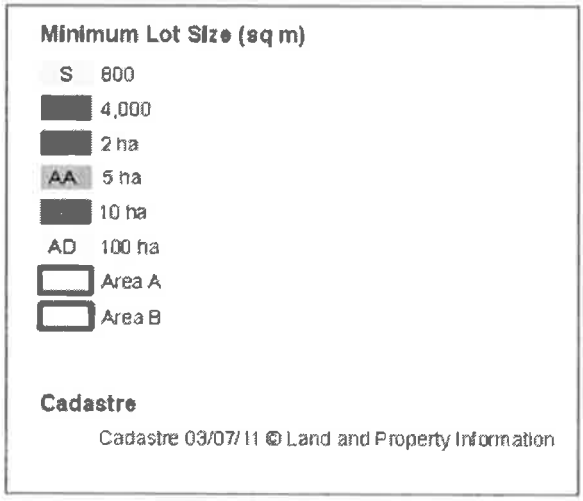


Diagram 2: The site is zoned R5 – Large Lot Residential and RU1 – Primary Production



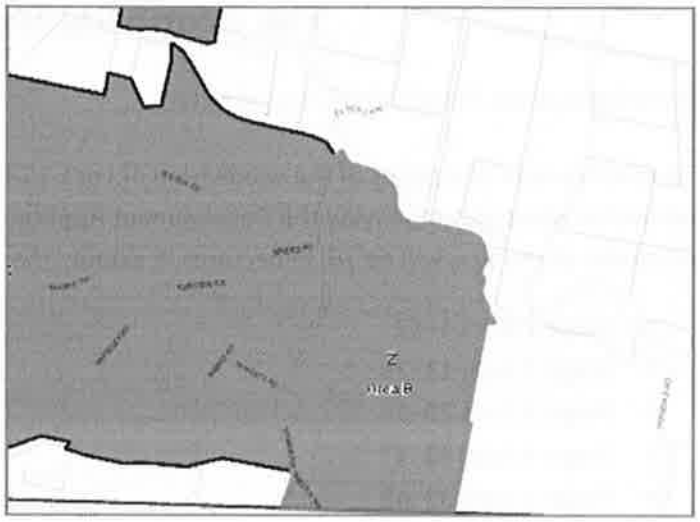


Diagram 3: The minimum and average lot size permissible on the site is 2 hectares within the area identified B. The minimum lot size of the area zoned RU1 – Primary Production is 100 hectares

The Proposed Development

Development Proposal Description

The development comprises of the subdivision of Lot L 1 DP 1089826 into 49 portions, as shown on the subdivision plans accompanying the Development Application and illustrated in **Appendix 1 to 4**. Lot 49, the remainder of the site, will be 76.39 hectares in extent. The development will be completed in 5 stages:

- Stage 1: Lots 1–12
- Stage 2: Lots 13–24
- Stage 3: Lots 25–36
- Stage 4: Lots 43–47
- Stage 5: Lots 37–42

Access and Traffic

The site is bounded by Titania Road to the west and will be accessed from this road onto Beattie Road. Titania Road intersects with Duckmaloi Road, which is the main access road to Oberon from the east. The existing intersection of Beattie Road onto Titania Road will be moved south as shown on the Drawing: Titania_ Intersection CEH REF 4/4634. **(Appendix 5 refers)** The existing intersection of the internal access road onto Beattie Road will be moved slightly south-east further away from the Beattie Road and Titania Road intersection. The realignment of these roads and intersections will result in an improved T intersection configuration.

Groundwater Pollution

Macquarie Geotechnical Pty Ltd. has undertaken a geotechnical investigation to evaluate the application site for on-site disposal of domestic effluent in accordance with AS1547 - 2012 "Disposal Systems for Effluent from Domestic Premises", and the combined NSW government departments Environmental Health Protection Guidelines (EHPG); "On-site Sewage Management for Single Households" (1998).

The recommendations in the letter received from Macquarie Geotechnical Pty Ltd dated 6 August 2014 is contained in **Appendix 6** and advises as follows:

- The disposal of domestic effluent on-site is feasible for the subject lots using a Wisconsin Mound such as an "ecomax" or "fujichem" system.
- The design of the Ecomax & Wisconsin Mound provided that it is designed and operated correctly, we would expect a zero overflow outside of the impervious membrane liner of the mound. Because of the impervious liner there would be no potential for drawdown of water which could contaminate a water supply, and even if there was the water quality is such that it would have minimal impact on the extractions, no more so than the existing rural land use.
- Table R1 of AS1547:2012 gives guidelines for horizontal and vertical setback distances for effluent disposal with the minimum range from a bore or well being 15 - 50m dependent on several factors. Even if we were to work on a "worst case" scenario then the setback from a bore to an effluent disposal system would be 50m.
- Based on the geotechnical investigation carried out a consistent soil profile of low to medium plasticity silty CLAY to a depth of 1.0m overlying silty GRAVEL was identified. Referring to Table R1 of

AS1547 2012 Items A & H, the good effluent quality produced using an Ecomax system and the category 4 soil identified on site would be classified at the lower end of the constraint scale when considering set back distances.

- Based on this, we see no reason for the setback distance to be 250m, and argue that it can be reduced to 50m.

Oberon Local Environmental Plan 2013

The *Oberon Local Environmental Plan 2013* (*LEP 2013*) is the primary environmental planning instrument that applies to this site. The proposed subdivision will only affect the part of the site that is zoned R5 – Large Lot Residential and will be referred to as *application site* in the table below. The development provisions of *LEP 2013* for consideration and comment relative to consistency are outlined in the table below.

Clause	Provisions	What is proposed and statement of compliance
1.2	Aims of the Plan	
	(2) The particular aims of this Plan are as follows: (a) to encourage sustainable economic growth and development in Oberon, (b) to encourage and provide opportunities for local employment growth and the retention of the population in Oberon, (c) to encourage the retention of productive rural land in agriculture, (d) to identify, protect, conserve and enhance Oberon's natural assets, (e) to identify and protect Oberon's built and cultural heritage assets for future generations, (f) to allow for the equitable provision of social services and facilities for the community, (g) to provide for future tourist and visitor accommodation in a sustainable manner that is compatible with, and will not compromise the natural resource and heritage values of, the surrounding area.	The proposal is consistent with the aims of the plan as set out under this clause.
2.3	**Zone objectives and Land Use Table** **Zone R5 Large Lot Residential**	The proposal is consistent with and will promote the achievement of the R5 – Large Lot Residential zone objectives.
	1 Objectives of zone	
	To provide residential housing in a rural setting while preserving, and minimising impacts on environmentally sensitive locations and scenic quality.	Consistent. The application site is not earmarked as an environmentally sensitive location. The site is largely clear of vegetation with only a small part of the site interspersed with existing trees. The proposed development has been designed to retain the majority of the existing trees on site. The proposed development will not change the zoning of the site and is therefore considered to be appropriate for this location.

	To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.	Consistent. The application site is appropriately zoned for large lot residential development. The proposed development is a logical extension of the existing large lot residential development at Titania Estate. The development will strengthen the existing land use pattern and therefore not hinder the proper and orderly development of Oberon in the future.
	To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.	Consistent. The application site is zoned R 5 – Large Lot Residential. Having regard to the average lot size of 2 hectares that will not be amended, the number of lots that can be provided on the application site will not change significantly. The proposal will therefore not result in any significant additional increase in the demand for public services. Suitable arrangements can be made for the provision of water and sewer to the development.
	To minimise conflict between land uses within this zone and land uses within adjoining zones.	The proposed development is a logical extension of the existing large lot residential development to the west. The development will strengthen the existing land use pattern and therefore not conflict with existing or proposed future land uses.
2.6	**Subdivision—consent requirements** Land to which this Plan applies may be subdivided, but only with development consent.	Consistent. The purpose of this development application is to obtain development consent for the subdivision of the lot into 49 portions.
4.1	**Minimum subdivision lot size** (1) The objectives of this clause are as follows: (a) to ensure subdivision of land occurs in a manner that promotes suitable land uses and development, (b) to ensure subdivision occurs in a staged manner that minimises the cost to the community from the provision of public infrastructure and services, (c) to ensure rural lands are not fragmented in a manner that threatens their future use for agriculture or primary production, (d) to ensure subdivision is not likely to result in inappropriate impacts on the natural environment, including native vegetation, natural watercourses and habitats for threatened species and populations and endangered ecological communities. (2) This clause applies to a subdivision of any land shown on the Lot Size Map that requires development consent and that is carried out after the commencement of this Plan. (3) The size of any lot resulting from a subdivision of land to which this clause applies is not to be less than the minimum size shown on the Lot Size Map	The application site is suitably zoned for large lot residential development. The proposed subdivision is therefore consistent with the objectives stated in this clause. A planning proposal has been submitted to change the minimum lot size from 2 hectares to 1 hectare in respect of the application site. The purpose of the planning proposal is to provide greater flexibility in the size of lots that can be provided on site and therefore meet market demand more efficiently. Once approval has been received for the planning proposal, the minimum lot sizes as proposed in this development application will comply with the LEP requirement as stated in this clause. Having regard to the average lot size of 2 hectares that will apply to the application site, the number of lots that can be developed on the site will not increase. The development will comprise of 5 stages, as shown on the staging plan, to ensure efficient delivery of infrastructure to the proposed new lots. Staging is indicative and may vary as economics of construction evolves.

in relation to that land.

4.1A	**Lot averaging subdivision in Titania Estate, Oberon** (1) The objective of this clause is to ensure that lot sizes and subdivision patterns for residential accommodation conserve and provide protection for the environmental values of the land by encouraging buildings to be appropriately sited. (2) This clause applies to the land identified as "Area B" on the Lot Size Map. (3) Despite clause 4.1, development consent may be granted to the subdivision of land to which this clause applies if: (a) the consent authority is satisfied that the land to be subdivided is proposed to be used for the purpose of residential accommodation, and (b) the area of each lot resulting from the subdivision will not be less than 2 hectares, and (c) the average size of all lots resulting from the subdivision will not be less than the minimum size shown on the Lot Size Map in relation to that land, and (d) the consent authority is satisfied that the development retains, and is complementary to, the environmental attributes of the land and its surrounds.	The application site is identified as Area B on the Lot Size Map. The minimum size shown on the Lot Size Map for the application site is 2 hectares. The average size applicable to the site is therefore 2 hectares. A planning proposal has been submitted to change the minimum lot size from 2 hectares to 1 hectare. The purpose of the planning proposal is to provide greater flexibility in the size of lots that can be provided on site and therefore meet market demand more efficiently. Once approval has been received for the planning proposal, the minimum lot sizes as proposed in this development application will comply with the LEP requirement. Having regard to the average lot size of 2 hectares that will remain unchanged, the number of lots that can be developed on the site will not change significantly. The proposed development will therefore not have any adverse impact on environment.
5.9	**Preservation of trees or vegetation** The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation. This clause applies to species or kinds of trees or other vegetation that are prescribed for the purposes of this clause by a development control plan made by the Council.	The site does not contain any threatened, rare, or endangered vegetation that would prevent the development as proposed. The owners have a record of additional tree planting and retention. The site is mainly clear of vegetation, with a small portion of the site containing existing trees. These trees are incorporated into the proposed site layout plan, as shown in **Appendix 1 and 3**. The boundaries of the proposed sites containing existing trees are such that the existing trees will be retained and integrated into future landscaping of individual sites. If required the trees on lots 18 to 23 can also be retained and preserved through the registration of a section 88 B instrument. It is envisaged that a fence line will be provided along the western boundary of the trees with a pedestrian gate for access from each lot to the treed area. There would be no dividing fence lines through the trees.
6.4	**Essential services** Development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required: (a) the supply of water, (b) the supply of electricity, (c) the disposal and management of sewage,	Consistent. Suitable arrangements can be made for the provision of essential services, as discussed earlier in this report.

(d) stormwater drainage or on-site conservation,
(e) suitable vehicular access

Development Control Plans- Oberon DCP 2001.

The part of the site zoned R5 – Large Lot Residential in terms of the *Oberon LEP 2013* was zoned Rural 1(a) in terms of the repealed *Oberon Local Environmental Plan 1998*. The *Oberon DCP 2001 (DCP)* refers to the Rural 1(a) zone. The equivalent zone for the R5 – Large Lot Residential is Rural 1(c). The equivalent zone for the RU1 – Primary Production zone was Rural 1(a). Compliance with the relevant sections in the DCP is stated below.

Clause	Provisions	What is proposed and statement of compliance
A.3.2	**Bush Fire** The whole of the Rural 1(a) zone in Oberon Shire is susceptible and or liable to bush fires and grass fires, the Council will have regard to: a) Whether it is feasible to require a perimeter road or fire radiation zone. b) Whether evacuation or on-site refuge measures are feasible. c) Whether any buildings are sited so as to minimise fire risk. d) Measures available to ensure the property can be managed to minimise the risk to it and to other land and buildings. e) Whether building materials and any proposed planting should be of a fire resistant type.	The site is largely clear of vegetation. The proposed lots are large enough to provide any future buffer zones and to site buildings so as to minimise any future fire risk. Building materials and proposed planting can be addressed at development application stage for individual dwellings.
A.4.3	**Building Setback from Roads** The Oberon LEP 1998 has significant boundary setback provisions for dwellings and should be referred to. To maintain rural aesthetic amenity and to minimise any potential traffic conflicts, a minimum building line of 20 m will apply to all land zoned rural (1a).	The equivalent zone for R5 – Large Lot Residential is Rural 1(c). The 10-metre building setback that applies to the lots in Titania Estate will be applicable.
A.4.4	**Development Fronting Main Roads** Development, which has the effect of creating ribbon development beside main roads, is generally discouraged on traffic safety grounds. Where there is no alternative to a main road location, particular consideration will be given to the number, location and design of access points to main roads. Generally, the number of accesses should be minimised, and all accesses proposed should be located and designed to avoid any conflict with other traffic. The designer and Council are required to consult with the Roads and Traffic Authority on all traffic	The site is bounded by Titania Road, which is not a main road. No additional access points to the proposed lots will be provided onto Titania Road. The development has been designed to provide access to individual lots via new internal roads to be constructed. The proposed development will therefore not have any adverse impact on traffic safety along Titania Road.

	generating developments fronting main roads and to seek the advice of the local Traffic Committee in many other cases.	
B.7	Design guidelines in Part B "Subdivision" provide the following relevant standards for compliance:	
B7.3	**Site Design** Subdivision layout should be designed in such a way so that it minimises the adverse effects of the natural elements. The selection of vegetation types and location of buffers and shelter belts can be used to ameliorate adverse climatic conditions on the site. The site layout and landscaping should avoid funnelling unfavourable winds.	Consistent. The subdivision has been designed to protect the existing trees on the application site. The subdivision plan illustrates in **Appendix 1** the location of a covenant that will be registered over lots 18 to 21 to protect the existing trees located on these sites. The trees located along the eastern boundary of proposed lots 31 to 36 will be located within lot 48 and will be retained as part of the development.
B7.4	**Climate Control** Design of the proposed subdivision should gain the most advantage of reducing the impact of adverse winds in winter by effective site layout and use of landscaping. Topographical features such as valleys and ridges can serve to channel or block prevailing winds.	Consistent. The proposed development does not contravene this clause. The layout is sensitive to the topography of the site. The proposed new internal roads are allocated along contours in a manner to reduce cut and fill and facilitate natural drainage.
B7.5	**Aspect** Lots with a main North-South axis give the most flexibility in the siting of dwellings and reduce problems of overshadowing. Lots with a main East-West axis may need to be wider than normal. On a South facing slope, shadow length is increased so dwelling sites should be further apart. Lots with a NW-SE or NE-SW axis are less favourable and may need to be specially designed or larger than normal to allow the siting of a house which is not parallel to the boundaries. These guidelines should be considered integrally with the particular topography and vegetation of the site, to achieve a layout that optimises solar access and site characteristics together.	Consistent. A large number of lots are proposed with a north–south axis. Due to the size of lots proposed larger than 1 hectare, the lots with an east–west axis will be wide enough to allow orientation of dwellings to optimise solar access.
B 7.6	**Drainage** Designs for stormwater drainage, which is harmonious with natural drainage patterns, soils and other relevant site conditions, are more likely to reduce both construction and maintenance costs. Therefore, the natural drainage pattern of the site should be a basic element in subdivision layout and road design. Open spaces and other unsealed surfaces should be used to contain drainage surcharge.	Consistent. The proposed subdivision has been designed to facilitate natural drainage within the application site.
B.7.7	**Landscaping** Part B.7.7 is to be read as a guideline only. The effective use of landscaping can make a	Consistent. Existing vegetation along Titania Road will substantially screen future development along this road.

	significant contribution to climate control, to the overall appearance of the subdivision and to the residential environment, which is ultimately created. Screen planting may be required adjacent to arterial roads. The applicant may be required to carry out and maintain planting until it is established to Council's standards. Council will generally require plantings to be completed prior to registration of the plan of subdivision	The subdivision design incorporates existing trees along proposed internal roads.
B8.4	**Lot Size** The Council wishes to encourage a range of all allotment sizes to meet the needs, affordability and preferences of different household types. Therefore this plan provides for a range of lot sizes in each subdivision to be integrated throughout the development.	Consistent. A large variety of lots sizes are provided within the proposed subdivision development ranging from 1.01 hectares to 24.92 hectares. This will contribute to meeting the needs, affordability, and preferences of different household types.
B8.5	**Shape of Lot** Conventional practice has concentrated on wide street frontages which result in larger block sizes, increased road lengths and servicing requirements, and this results in higher costs per lot. With increasing diversity in housing preferences, there can be more flexibility in lot shapes to optimise the use of each lot in terms of aspect, house siting and private open space. This policy provides controls over the shape of lots rather than specifying a minimum frontage, consideration will be given to the orientation of each lot and its ability to provide a suitable house site with good aspect, useable private open space, adequate vehicle access, and maintenance of the rural amenity and/or rural village amenity.	Consistent. The proposed subdivision plan provide for a variety of lot shapes, with narrow street frontage to reduce servicing costs.
B8.6	**Storm water Drainage** The subdivision designer will need to prepare an appropriate stormwater design. Conventional practice requires the maximum stormwater flow to be contained within the road pavement and kerb area. Greater use of the reserves as a defined overland floodway can have some advantages in cost savings, maintenance and environmental impact. Greater use of retarding basins will lower peak stormwater flows and can be integrated with open space for efficient land use. Slower run off means lower velocity, less siltation and less downstream erosion. Less reliance on pipes reduces the possibility of localised flooding through pipe failure or blockage.	Consistent. The subdivision layout is sensitive to the topography of the site. The proposed new internal roads are allocated along contours in a manner to reduce cut and fill and facilitate natural drainage.
B.11.1	**ROADS** **General** The planning, location and the design of each new road shall conform with the Civil Engineering AUSSPEC specifications in order to provide a simple,	Consistent. This can be conditioned as part of a development approval.

logical and safe road network which enables users to find their way readily to any destination.

B.11.2 Road Widths

The roads shall be in accordance with the Council's standards for roads as shown in the Table B.11.2. Any submission to vary road standards will be considered on its merits and should be accompanied by full supporting information. No minor access road or access way shall provide a through traffic distribution function.

Consistent. The proposed development complies with the required road widths.

TABLE B11.2 Road Standards for Subdivision in the Rural Zones

Type of Subdivision and Road	Reserve Width in metres	Gravel Pavement Width in metres	Bitumen Seal	Compacted gravel Depth	Design Standard	Design Speed
1. Dedicated Easements or Right of Carriageway						
ROW serving 1 or 2 lots	10	4	In Environmentally Sensitive Areas	100 mm	Design to be submitted to and approved by Council	60kph
ROW Serving 3, 4 or 5 lots	20	6	In Environmentally Sensitive Areas	150mm	Design to be submitted to and approved by Council	80kph
ROW Serving 6 or more Lots	20	8	In Environmentally Sensitive Areas	200 mm minimum	Design to be submitted to and approved by Council	80kph
Type of Subdivision and Road	**Reserve Width in metres**	**Seal Width In metres**	**Bitumen Seal**	**Compacted gravel Depth**	**Design Standard**	**Design Speed**
2. Gazetted Roads (Public Roads) to be maintained by Council						
Local Road serving 1 or 2 lots	10	4	If coming off a sealed road or road to be sealed within 25 years, subject to Council's program.	100mm	Design to be submitted to and approved by Council	60kph
Local Road serving 3, 4 or 5 lots	20	6	If coming off a sealed road or road to be sealed within 25 years, subject to Council's program.	150mm	Design to be submitted to and approved by Council	80kph
Local Road serving 6 or more lots	20	8	If coming off a sealed road or road to be sealed within 25 years, subject to Council's program.	200mm	Design to be submitted to and approved by Council	80kph

B.11.3 Footpath, Nature Strip, Kerb And Gutter

Council wishes to encourage footpath and nature strip treatment that reflects the particular road function and provides a safe and pleasant people orientated environment for pedestrians and cyclists. The alignment of footpaths should be designed to serve the needs of safety and pedestrian access to dwellings, open space and other facilities to retain existing vegetation and to contribute to the overall landscape planning of the subdivision.
In the case of local access roads, minor access roads or access ways, the provision of a footpath on one side of the road only may be approved where it is demonstrated to Councils satisfaction that the

Consistent. No footpaths are proposed having regard to the rural nature of the proposed development for large lot residential.

	proposal enhances the residential environment and provides adequate safety and convenience for pedestrians.	
B.11.5	**Turning Areas** Where a turning area is required, the applicant is to provide an area with a minimum radius of 9 metres.	Consistent. The proposed development will not be serviced by heavy vehicles. The lots will be large enough to enable on-site reversing movements for the forwards direction entry and exit of all vehicles.
B.11.6	**Road Shoulders** Road shoulders shall be sealed for the full length of the road frontage of the subdivision, from the edge of the existing seal to the lip of the kerb and gutter, at the applicants cost.	Consistent. This requirement can be conditioned as part of a development consent, if required.
B 11.7	**Corner Splays** Council requires the provision and dedication of corner splays at existing road intersections in accordance with the following: a) at the junction of a local road with a main road – as determined by the Roads and Traffic Authority, and b) cross roads (6 metres). c) At "T" intersections (5 metres).	Consistent. Corner splays have been provided in the subdivision plan.
B.11.8	**Service Conduits** Where required by a service authority, the applicant shall provide service conduits or sub mains in road crossings prior to construction of the kerb and gutter.	Consistent. This requirement can be conditioned as part of a development consent, if required.
B.11.9	**Road works** Roads should be located and designed to minimise interference with natural drainage and reduce risk of soil erosion.	Consistent. The subdivision layout is sensitive to the topography of the site. The proposed new internal roads are allocated along contours in a manner to reduce cut and fill and facilitate natural drainage.
B.11.10	**Property** **Access In The Rural Zones** Multiple accesses will be discouraged on all major roads including Shooters Hill Road, Edith Road, Abercrombie Road, O'Connell Road, Lowes Mount Road and Hazelgrove Road. The designer should seek concurrence of the RTA if access is proposed off a main road. Council requires that public road access be provided to all allotments that can on the plan of subdivision. Where the natural surface slopes steeply to or from the road, the access to an allotment shall be given special consideration. Council may consider access via rights of way or dedicated easements for access that service one or two lots only in total. The designer should, by consultation with Council Engineering Department, determine if special	Consistent. The site is bounded by Titania Road, which is not a main road. No additional access points to the proposed lots will be provided onto Titania Road. The development is designed to provide access to individual lots via new internal roads to be constructed. The proposed development will therefore not have any adverse impact on traffic safety along Titania Road.

	treatment of access points are required. Construction of culverts or special treatment table drain crossings are often required in the rural area. Where necessary, applicants will be required to clear vegetation or other visual obstructions at points of access to ensure adequate driver sight distances.	
B.12.3	**Stormwater And Surface Water Drainage** The applicant shall construct stormwater and surface water drains as required and provide all easements and where necessary, transfer to Council any necessary drainage reserve.	Consistent. This can be addressed as a condition of approval.
B.12.4	**Common Drainage** The applicant shall provide common drainage lines and easements to Councils specifications. Easements shall be created in favour of those lots served by the drainage line and burdening those so affected by the drainage line. The point of disposal for common drainage lines shall be as determined by Council. The purpose of such lines is for the carriage of roof stormwater only, not inter allotment drainage.	Consistent. This can be addressed as a condition of approval.
B.12.5	**Public Reserves** Public open space areas should be functional, well located and distributed appropriately throughout the subdivision to maximise usage and provide for a variety of leisure opportunities. Public open space shall be provided at the rate of 3 hectares per 1000 EP (Equivalent People), as calculated by the maximum servicing requirement of the subdivision, by transfer to Council by dedication as public reserve; or, where it is not possible or reasonable to dedicate land as public reserve, be a monetary contribution for the acquisition to embellishment of public reserves within the village or release area.	Consistent. Having regard to the rural location and proposed large lots sizes, no public reserve areas are proposed.
B.12.8	**Electricity Supply** Applicants are required to consult the appropriate Energy Authority to ascertain the cost and availability of reticulation of power supply.	Consistent. Overhead power is proposed.
B.12.9	**Telephone** Written evidence shall be submitted, indicating that the proposed subdivision can be served by underground telephone cabling.	Consistent. This can be addressed as a condition of approval.
B.12.11	**Common Trenching** Subdivision design shall provide for the common trenching where possible of services to reduce the number of trenches and the amount of land required and to reduce costs and disruption due to maintenance.	Consistent. This can be achieved.

B.12.12	**Geotechnical Report** The designer will need to verify: - 1) that a building site of adequate size and shape exists on each lot and is not subject to slip or subsidence and: 2) that each Lot is suitable for sewer connection via a gravity line or alternatively it is suitable for on-site waste-water disposal. For any Lot less than 4 hectares a report in accordance with A.S.1547 "Disposal Systems for Domestic Effluent from Premises" IS REQUIRED. NB. Council will reserve the right to refuse to accept any report, which does not comply with this policy and may, under special circumstances, require a second report or an alternative opinion on the technical detail of a report. Every designer preparing reports for the consideration of Council should hold an insurance policy to the value of $2 Million indemnifying him / her against professional negligence. Council may require written evidence of this insurance.	Suitable arrangements can be made to provide water and sewer to the application site. Macquarie Geotechnical Pty Ltd. has undertaken a geotechnical investigation to evaluate the application site for on-site disposal of domestic effluent in accordance with AS1547 - 2012 "Disposal Systems for Effluent from Domestic Premises", and the combined NSW government departments Environmental Health Protection Guidelines (EHPG); "On-site Sewage Management for Single Households" (1998). The recommendations in the letter received from Macquarie Geotechnical Pty Ltd dated 6 August 2014 advises as follows: • the disposal of domestic effluent on-site is feasible for the subject lots using a Wisconsin Mound such as an "ecomax" or "fujichem" system. • the design of the Ecomax & Wisconsin Mound provided that it is designed and operated correctly, we would expect a zero overflow outside of the impervious membrane liner of the mound. Because of the impervious liner there would be no potential for drawdown of water which could contaminate a water supply, and even if there was the water quality is such that it would have minimal impact on the extractions, no more so than the existing rural land use. • Table R1 of AS1547:2012 gives guidelines for horizontal and vertical setback distances for effluent disposal with the minimum range from a bore or well being 15 - 50m dependent on several factors. Even if we were to work on a "worst case" scenario then the setback from a bore to an effluent disposal system would be 50m. • Based on the geotechnical investigation carried out a consistent soil profile of low to medium plasticity silty CLAY to a depth of 1.0m overlying silty GRAVEL was identified. Referring to Table R1 of AS1547 2012 Items A & H, the good effluent quality produced using an Ecomax system and the category 4 soil identified on site would be classified at the lower end of the constraint scale when considering set back distances. • Based on this, we see no reason for the setback distance to be 250m, and argue that it can be reduced to 50m.
B.14.12.8	**Disposal of Domestic Wastewater** For any site or proposed Lot less than 4 hectares that proposes on-site waste-water disposal a design report in accordance with AS1547 verifying that the site is suitable for the erection of a dwelling. A wastewater envelope, separate to the dwelling envelope must be clearly shown on the plan.	Consistent. Suitable arrangements can be made to provide waste water treatment to the individual sites. Installation and general requirements for the installation of individual units can be dealt with at development application stage for each individual dwelling.

B.14.12.11	**Allotment Sizes** 4) Maintenance of the Rural vista. Larger than minimum lot sizes should be provided: a) Where topographical or geographical features limit the amount of useable land; b) Where increased area is required to meet setbacks from adjacent land use or boundaries. c) Where it is necessary to preserve or enhance the rural vista.	Consistent. Various lot sizes are provided in the subdivision plan. Larger lots are provided to accommodate the location of existing trees on the site, for example, lots 18 to 23 and 48. Larger lots are located along the eastern boundary of the site adjoining the land zoned RU1 – Primary Production.

SEPPs and Deemed SEPPs (REPPs)

All SEPPs and deemed SEPPs (REPPs) have been perused for relevance.

Conclusion/Summary

Fragar Planning & Development is pleased to submit this Statement of Environmental Effects accompanying the Development Application for the subdivision of Lot L 1 DP 1089826 into 49 portions.

This Statement of Environmental Effects for the proposed development has considered:

- The circumstances of the case;
- The public benefit of the development;
- An analysis of the subject site and of the surrounding locality;
- An analysis of the proposal against the provisions of the *Oberon LEP 2013*, *Oberon DCP*, relevant SEPPs and Deemed SEPPs, and other relevant statutory controls that apply to the site.

Suitability of the Site for the Development

Previous sections of this report demonstrated the suitability of the site for the proposed development, particularly in terms of:

- The proposed development will provide a variety of feasible lots in close proximity to Oberon.
- The proposed lot sizes will provide adequate space for the development of a future dwelling and ancillaries.
- All essential services can be provided to the development.
- The proposal is considered to satisfy the objectives of the relevant development standards contained in the LEP and DCP with the exception of the departure from the minimum lot size control applicable to the application site. A planning proposal has been prepared and submitted to justify the departure from clauses 4.1A (3) (b) and (c) of the *Oberon Local Environmental Plan 2013* restricting the minimum lot size to 2 hectares on the property. Once approval is received for this planning proposal, the proposed development will comply with the minimum lot size requirement.
- The proposed development will not have any adverse impact on the surrounding environment.

Public Interest

The proposal is considered to accord with the wider public interest in that:

- It provides an appropriate use of the site;
- It is consistent with all relevant LEP aims and objections.

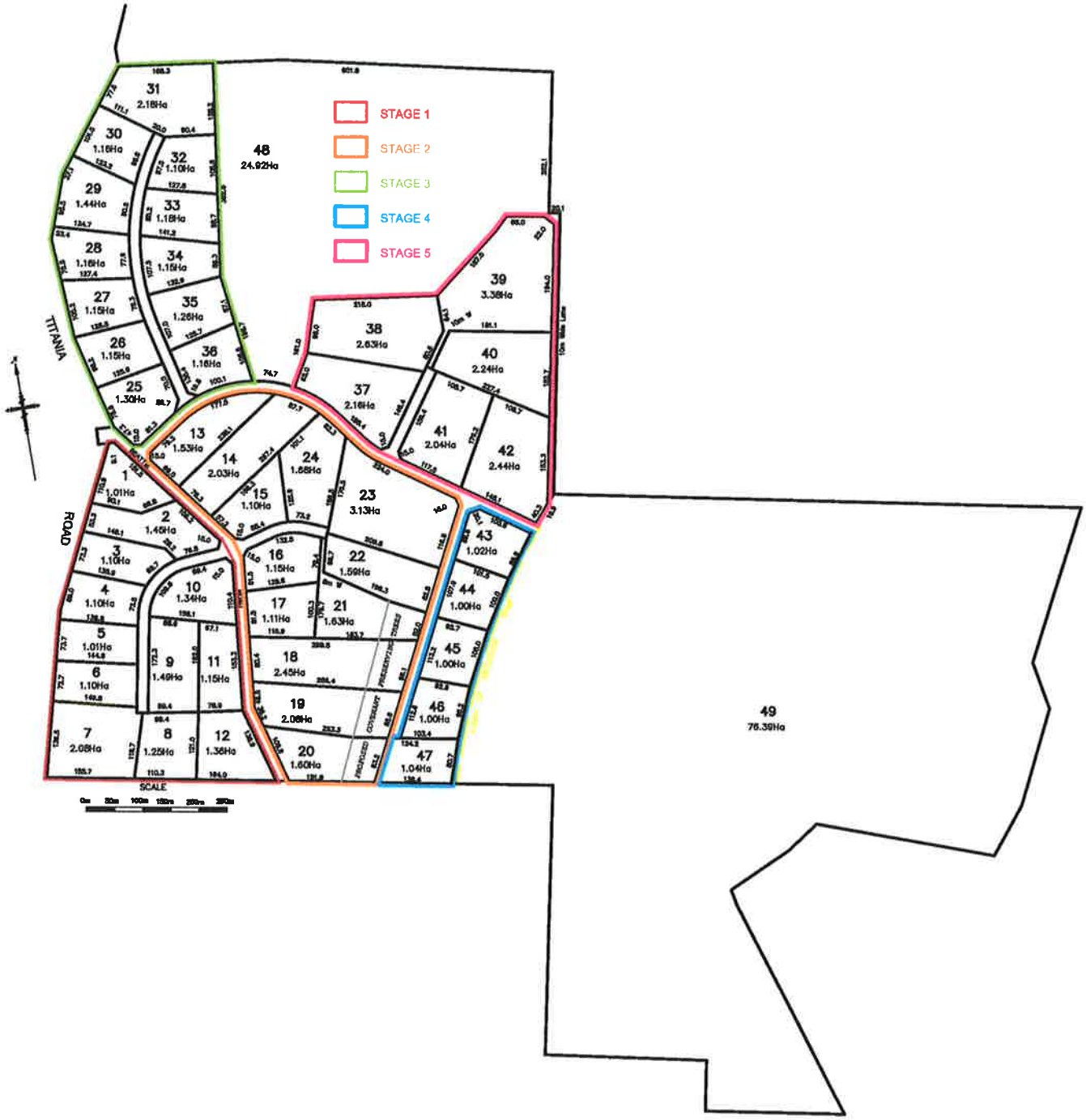
Having regard to the issues raised and discussed in this report, it is considered that the proposal is not contrary to the public interest.

Recommendation

Accordingly, the proposed development is recommended for approval subject to appropriate conditions of consent.

Appendix 1 – Proposed Subdivision Lot Dimensions and Staging Plan

Appendix 1- Lot dimensions and staging showing lot 49

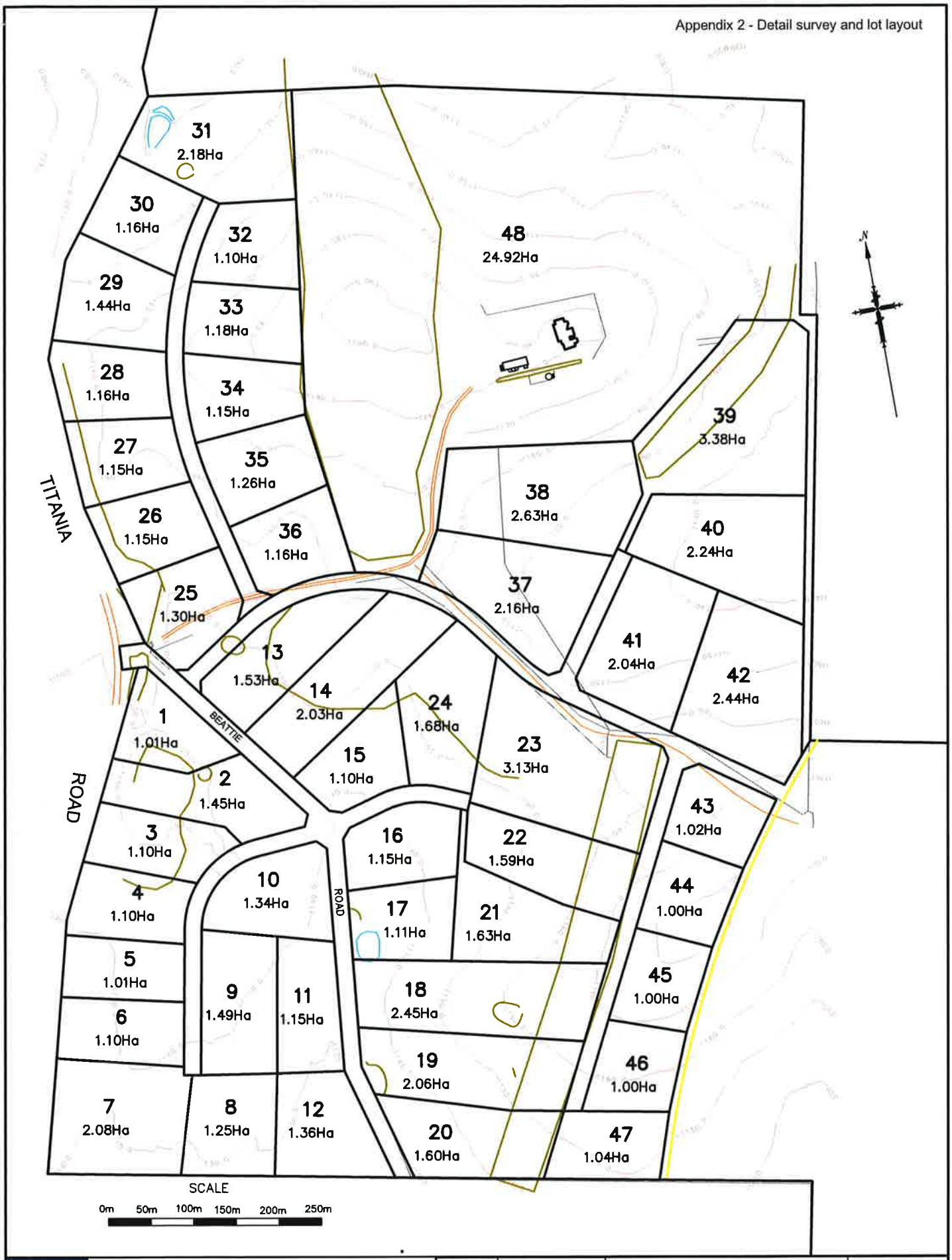


CEH SURVEY	DATE	07-08-14	OBERON - TITANIA ROAD LOT 1 DP 1089826 PROPOSED SUBDIVISION LOT DIMENSIONS & STAGING SHOWING LOT 49 - RESIDUE
	AMENDED	06-08-14	
	SURVEYOR	T.H./CEH	
	DRAWN	K.L.F.	
	CHECKED		SCALE - 1 : 7500 (A3 SHEET)

DWG No
TITANIA8_
LOTS2
CEH REF 4/4634

Appendix 2- Proposed Subdivision Detail Survey and Lot Layout Plan

Appendix 2 - Detail survey and lot layout

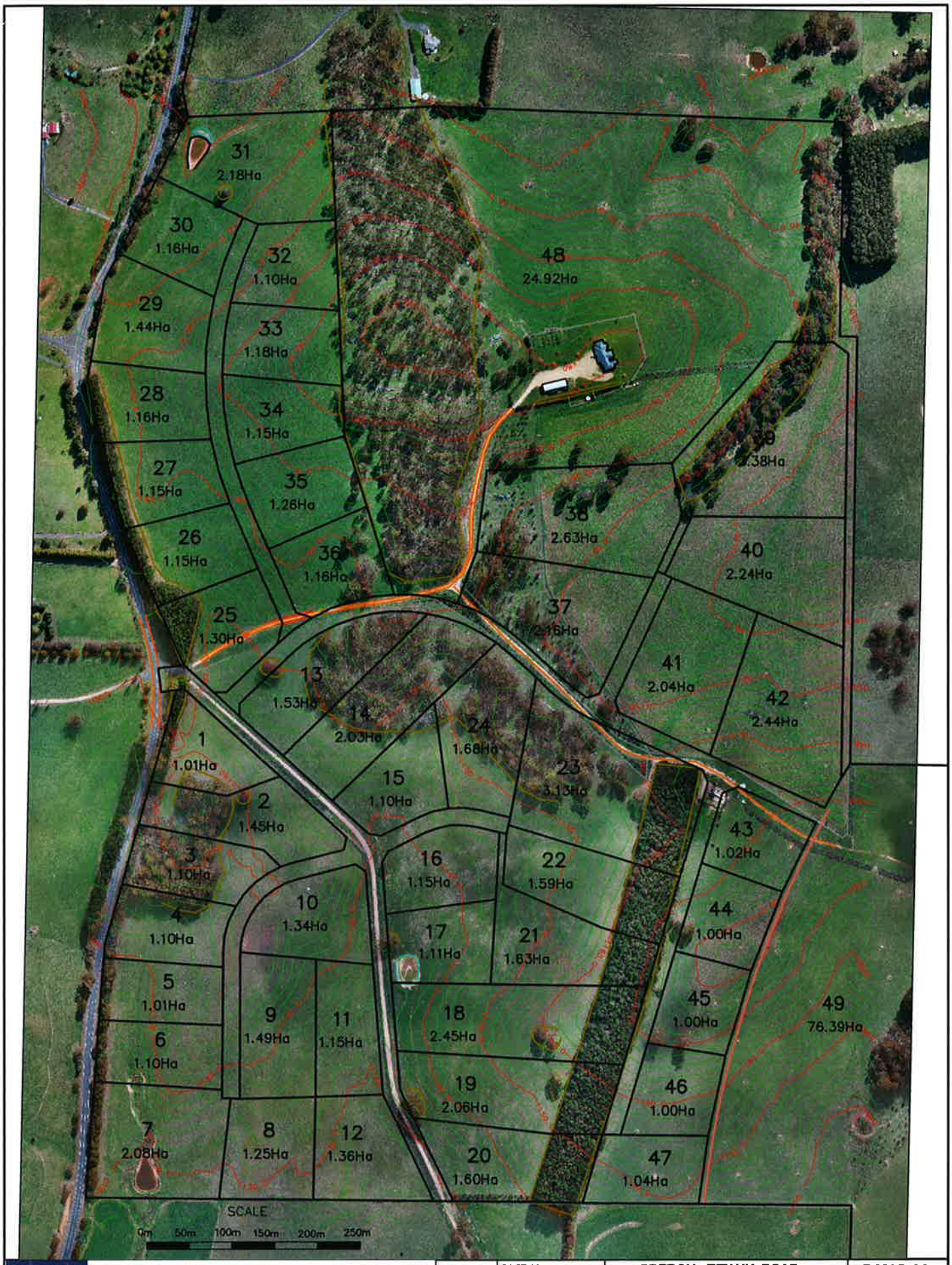


DATE	31-07-14
AMENDED	
SURVEYOR	T.H./CEH
DRAWN	K.L.F.
CHECKED	

OBERON - TITANIA ROAD
LOT 1 DP 1089826
PROPOSED SUBDIVISION
DETAIL SURVEY AND LOT LAYOUT
SCALE - 1 : 4000 (A3 SHEET)

DWG No
TITANIA8_
DETAIL
CEH REF 4/4634

Appendix 3- Proposed Subdivision Photo Overlay



CEH SURVEY
CONSULTING AND ENGINEERING AND MINING SURVEYORS

DATE	31-07-14
AMENDED	06-08-14
SURVEYOR	T.H./CEH
DRAWN	K.L.F.
CHECKED	

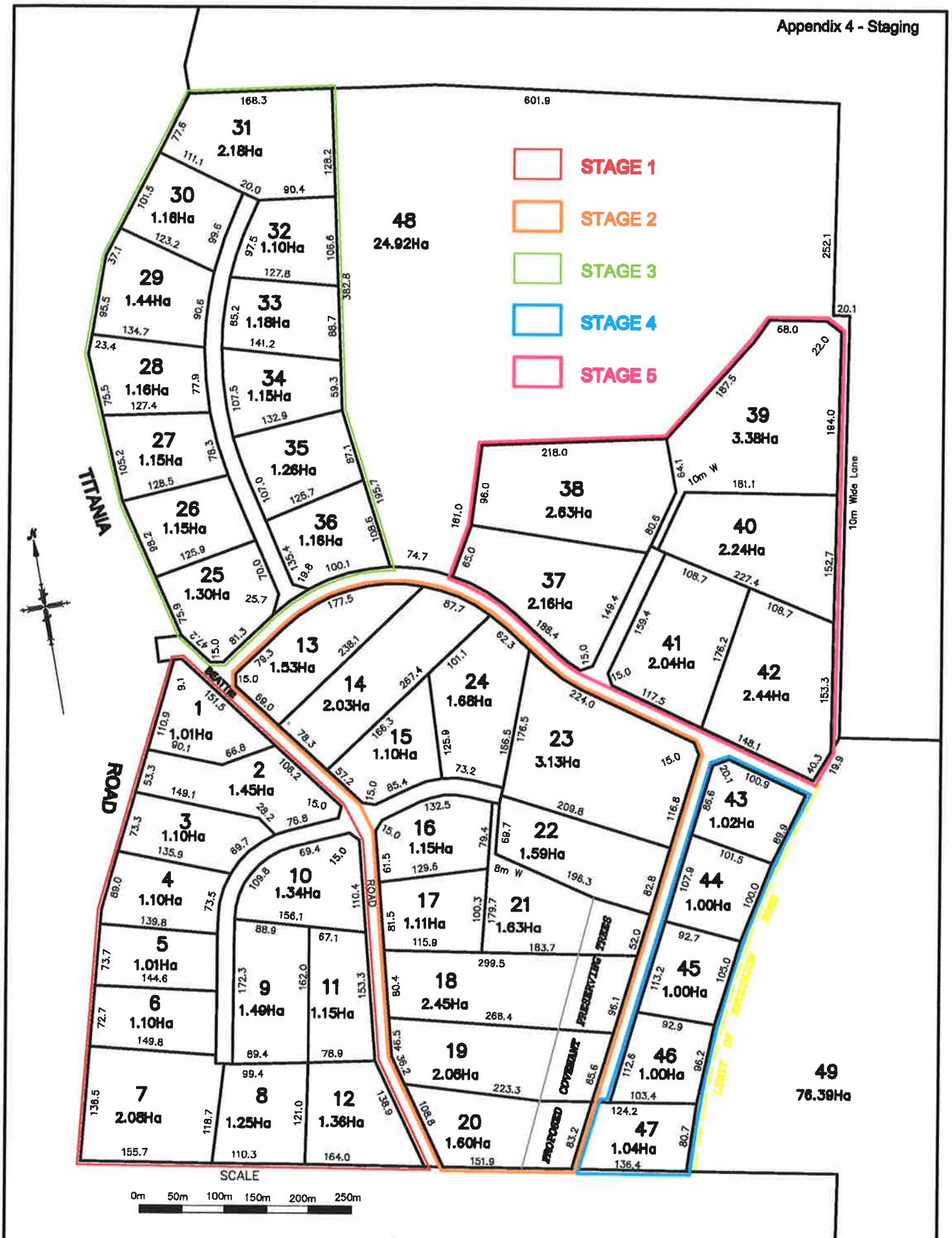
OBERON - TITANIA ROAD
LOT 1 DP 1069626
PROPOSED SUBDIVISION
PHOTO OVERLAY

SCALE - 1 : 4000 (A3 SHEET)

DWG No
TITANIA8_
IMAGE
CEH REF 4/4634

Appendix 4 -Proposed Subdivision Staging Plan

Appendix 4 - Staging



CEH SURVEY

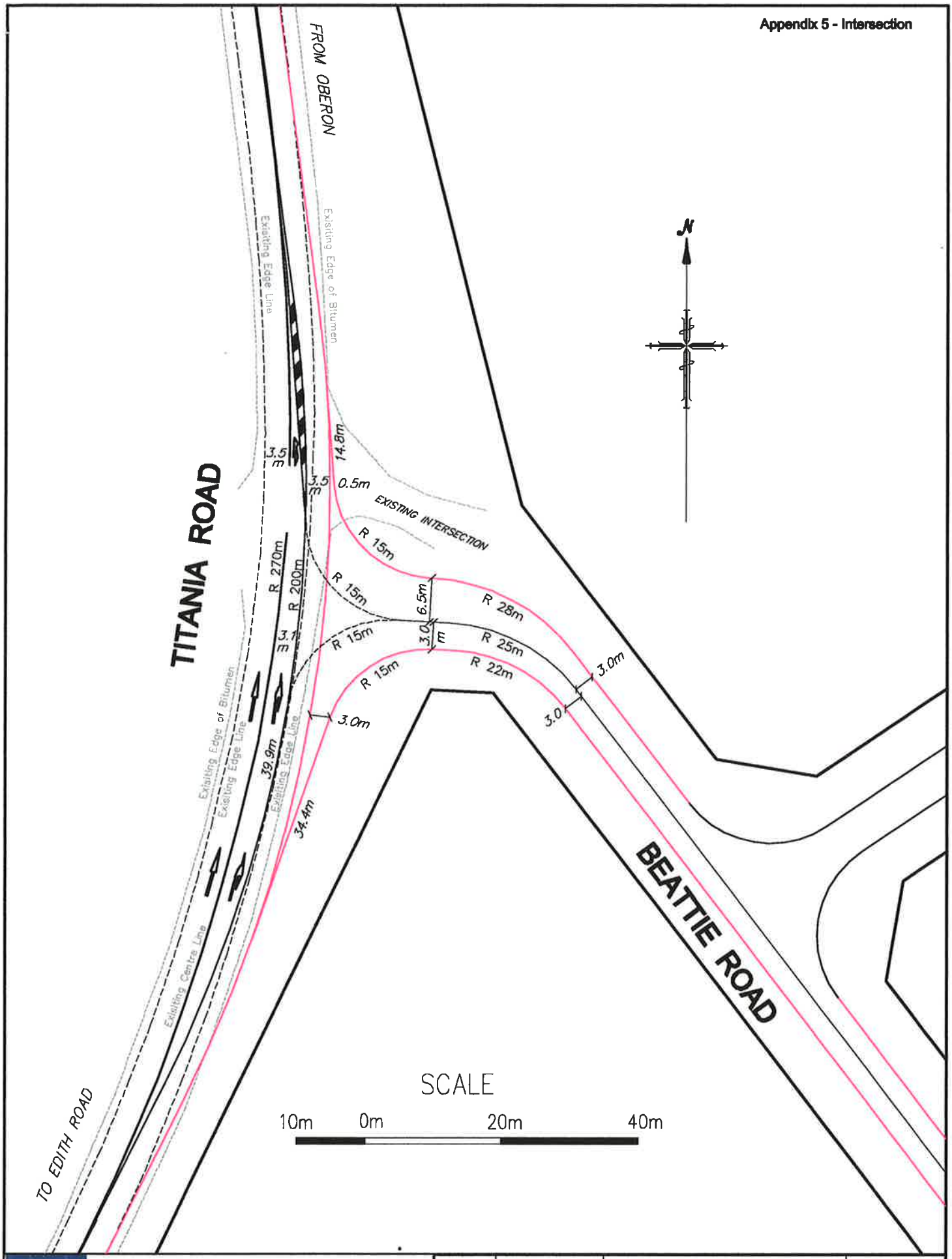
DATE	31-07-14
AMENDED	08-08-14
SURVEYOR	T.H/CEH
DRAWN	K.L.F.
CHECKED	

OBERON - TITANIA ROAD
LOT 1 DP 1099828
PROPOSED SUBDIVISION
LOT DIMENSIONS & STAGING
SCALE - 1 : 4000 (A3 SHEET)

DWG No
TITANIA8_
LOTS
CEH REF 4/4634

Appendix 5 -Proposed Intersection- Beattie Road

Appendix 5 - Intersection



CEH SURVEY	DATE	29-05-14	OBERON - TITANIA ROAD LOT 1 DP 1060826 PROPOSED SUBDIVISION PROPOSED INTERSECTION - BEATTIE ROAD SCALE - 1 : 500 (A3 SHEET)	DWG No TITANIA_ INTERSECTION CEH REF 4/4634
	AMENDED			
	SURVEYOR	T.H./CEH		
	DRAWN	K.L.F.		
	CHECKED			

MACQUARIE GEOTECH

Geotechnical Engineers & Engineering Geologists
NATA Accredited Construction Materials Testing
Laboratory for Soils, Aggregates and Concrete
Geotechnical & Environmental Drilling

NATA

6 August, 2014

Max Fragar
Fragar Planning & Development
11 Jersey Ave
Leura NSW 2780

Dear Max

Onsite Effluent Disposal Investigation for Proposed Subdivision/DLEP Titania Road Oberon NSW 2849

Assessment for On-site Effluent Disposal

Introduction

Macquarie Geotechnical Pty Ltd has undertaken a geotechnical investigation at the above site. This work was done to evaluate the site for on-site disposal of domestic effluent in accordance with AS1547 - 2012 "Disposal Systems for Effluent from Domestic Premises", and the combined NSW government departments Environmental Health Protection Guidelines (EHPG); "On-site Sewage Management for Single Households" (1998).

Method

Eighty four test boreholes were drilled and logged on the 8th and 9th of July 2014 by an Engineering Geologist and Senior Geotechnical Officer from our Bathurst office. The boreholes were drilled using a 4wd mounted Innovative Sampla 24LT with solid 125mm augers.

Results

The boreholes drilled at the site were used to determine the indicative permeability of the site soils. The assessment was based on the observed soil texture and structure and the indicative information in AS1547:2012 – Table 5.2.

The assessment is summarised in table 1 below:

Table 1: Sub-surface conditions

Depth	Material Description
0.00 – 1.00	Silty CLAY trace sand and gravel: red brown, low to medium plasticity clay, fine to coarse sand, fine to coarse gravel, firm, moist, moisture content ~ plastic limit (RESIDUAL).
1.00 – 1.50	Silty GRAVEL trace sand and clay: light yellow brown, fine to coarse sand, fine to coarse gravel, dense, slightly moist (RESIDUAL).

Note: Groundwater was not encountered.

Table 2: Permeability Assessment

Soil Category	Soil Texture	Soil Structure	Indicative Permeability (m/day)
4	CLAY LOAM	Weakly Structured	0.50

Based on the foregoing, a permeability of 0.50m/day was adopted for design.

Mound Systems

We advise that the disposal of domestic effluent on-site is feasible for the subject lots using a Wisconsin Mound such as an "ecomax" or "fujichem" system.

Permeability and Design Effluent Loading

As noted previously the permeability of the site soils is **0.50 m/day**.

With reference to Table N1 of AS1547:2012 a Design Loading Rate (DLR) of **8mm/day** should be used for the mound system.

Installation and General Requirements

The following paragraphs outline installation and general requirements for the effluent disposal system.

- The area be sited within the recommended area as indicated on the individual site plans in a location receiving good sunlight and exposure to prevailing breezes and where possible away from general access and play areas;
- A suitable diversion drain should be installed on the high side of the disposal area to minimise run on surface stormwater flows.
- The area be located so that the following minimum horizontal set back distances are complied with:
    i. 3m from any property boundary or residence if higher than the disposal area; or 6m from any property boundary or residence if lower than the disposal area;
    ii. 3m from any pathway or walkway;
    iii. 6m from the edges of a swimming pool.
    iv. 40m from any dams or water courses.
- Planting of suitable vegetation shall be carried out prior to commissioning of the system. The design assumes that a perennial pasture will be planted over the area; if alternative vegetation is contemplated then further geotechnical advice should be obtained.

With reference to your summary of points raised from the meeting with the NSW Office of Water.

With regards to the likely water usage requirement of the residential lots, we would expect the following;

Design wastewater loading for each potential bedroom	Reticulated / bore water	Tank water
1-2 potential bedrooms	600L/d	400L/d
3 potential bedrooms	900L/d	600L/d
4 potential bedrooms	1200L/d	800L/d
More than 4 potential bedrooms	1200L/d plus 150L for each additional bedroom	800L/d plus 100L/d for each additional bedroom
Source: NorBE Assessment Guideline (Sydney Catchment Authority, 2011). Note: the Sydney Catchment Authority adopts a conservative approach for wastewater design calculations. Water saving fixtures should be standard in all new dwellings.		

"For greywater-only systems, use a value of 65% of the design wastewater load calculated above. Otherwise greywater systems are treated exactly the same as other wastewater systems."

Concerning the second issue of 'standards for onsite disposal', and based on an "Ecomax" system being installed and used with a Wisconsin Mound, the Ecomax Treatment Performance is below;

Parameter	Final Concentration	Removal Efficiency
Total persulphate phosphorus	0.01 – 0.05mg/L	>99.6%
Total persulphate nitrogen	2.0 – 10.0mg/L	>80%
Ammonia nitrogen	<5mg/L	>90%
BOD	<10mg/L	>90%
pH	7.5 – 8.5	
Suspended Solids	<10mg/L	>90%
Faecal coliform	0 – 500/100ml	>99.95%

With the design of the Ecomax & Wisconsin Mound provided that it is designed and operated correctly, we would expect a zero overflow outside of the impervious membrane liner of the mound. Because of the impervious liner there would be no potential for drawdown of water which could contaminate a water supply, and even if there was the water quality is such that it would have minimal impact on the extractions, no more so than the existing rural land use.

Table R1 of AS1547:2012 gives guidelines for horizontal and vertical setback distances for effluent disposal with the minimum range from a bore or well being 15 - 50m dependent on several factors. Even if we were to work on a "worst case" scenario then the setback from a bore to an effluent disposal system would be 50m.

Based on the geotechnical investigation carried out a consistent soil profile of low to medium plasticity silty CLAY to a depth of 1.0m overlying silty GRAVEL was identified.

Referring to Table R1 of AS1547 2012 Items A & H, the good effluent quality produced using an Ecomax system and the category 4 soil identified on site would be classified at the lower end of the constraint scale when considering set back distances.

Based on this, we see no reason for the setback distance to be 250m, and argue that it can be reduced to 50m.

We trust the foregoing is sufficient for your present purposes, and if you have any questions please contact the undersigned.

Yours sincerely

Karl Addison
Engineering Geologist
BSc (Hons) Environmental Management

Reviewed by

Robert Cox
Principal Engineering Geologist
B.App.Sc (Geology) Affil MIEAust

References:

NorBE Assessment Guideline (Sydney Catchment Authority, 2011).

Fig 8.2 Cross Section of an amended soil mound – Design and Installation of On-Site Wastewater Systems – Sydney Catchment Authority 2012.

AS/NZS 1547:2012 On-site Domestic Wastewater Management