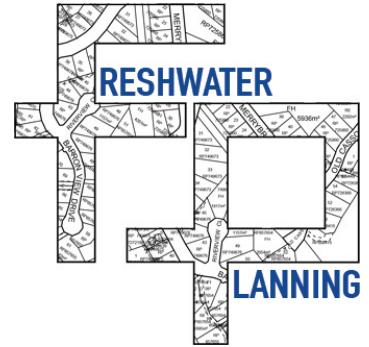


Your Ref: MCU/22/0002
Our Ref: F21/37



05 November, 2023

Chief Executive Officer
Mareeba Shire Council
PO Box 154
MAREEBA QLD 4880

Attention: Carl Ewin
Town Planning Department

Dear Sir,

**RE: RESPONSE TO INFORMATION REQUEST
APPLICATION FOR A MATERIAL CHANGE OF USE – OUTDOOR SPORT AND RECREATION,
FUNCTION FACILITY, ~~EDUCATIONAL ESTABLISHMENT~~ AND TOURIST PARK
LOT 66 ON RP896904, LOT 67 ON SP328197 AND LOT 68 ON SP282408, 545 KAY AND 483
EMERALD FALLS ROADS, MAREEBA.
DEVELOPMENT APPLICATION MCU/22/0002.**

I refer to the Mareeba Shire Council's Amended Confirmation Notice and subsequent Information Request letter dated 02 March, 2023. The following advices, in addition to those provided within the Development Application, are provided for your information in accordance with the Development Assessment Rules, 2017 supported by the *Planning Act, 2016*.

The current Development Application is for a Material Change of Use – Outdoor Sport and Recreation, Function Facility, Educational Establishment and Tourist Park. As a result of Investigations, discussions and additional Information (inclusive of professional Reports and advices) undertaken in relation to Council's Information Request, the Department's Information Request and the Department's Advice Notice, the Development Application has defined its Uses, numbers and the likes. This has resulted in Amending the Development Application to remove the Educational Establishment Use aspect of the proposal. This for the majority is in response to concerns, issues, revised clarity of Uses and the likes that have arisen when collating the Response to the Information Requests.

Information Request Item 1

Revised Plans

In order to provide clarity moving forward, particularly to the public during the public notification process, please provide a more detailed set of plans, prepared by a professional, addressing the entire development as well as each individual Stage of the development.

Attached to this Response is an additional set of Proposal Plans addressing the components of the proposed development. It is worth noting that, originally, Lot 67 on SP328197 was included to be provided with Nature-Based Tourism Uses over the site with any future of the Tourist Park able to be expanded within this site. However, recent developments, including the revised Staging to remove a number of Stages and reductions in aspects/scale of the proposal have resulted in the removal of any proposed Uses over existing Lot 67 on SP328197. As the Development Application and associated documentation from the Department of

Environmental and Science included this allotment, existing Lot 67 has remained part of this Development Application with no part of the development provided over this Allotment.

Further, the provision of Concept Drawings for the proposed Tourist Cabins are attached. These Plans have been provided in Concept only as Kanjini Co-Op Limited is looking into sustainable Cabin development and are looking to utilise sustainable building materials (air-crete, rock, hemp-crete, adobe, timber etc) in similar design to the attached Concepts.

The attached Additional Proposal Plans provided with this Response to the Information Request are as follows:

- ✚ Development Application Areas – Site Plan
- ✚ Event Site 1
- ✚ Event Site 2
- ✚ Tourist Cabin Site
- ✚ RV Sites
- ✚ Layouts and Elevations
 - Function Building Layout and Elevations
 - Tourist Cabins Concept Drawings Layouts and Elevations
 - Manager’s Residence Layout and Elevations

Information Request Item 2

Traffic Impact Assessment

Please provide a Traffic Impact Assessment (TIA), prepared by an RPEQ, addressing anticipated traffic volumes and recommended upgrades (if any) on both Emerald Falls Road and Kay Road. The TIA should address each individual Stage of the development.

Attached to this Response is a Traffic Impact Assessment prepared by Civil Walker Consulting Engineers. It is understood that the Traffic Impact Assessment summaries that the existing Road Network is acceptable and appropriate for the proposed development. The Report does recommend ‘that Council undertake a Site Inspection to determine if provision of additional road signage would be appropriate on the road to alert drivers of upcoming tight bends, road crests, causeways and other elements that may be unexpected. Consideration should also be given to whether trees close to the carriageway should be removed or if signage warning of the obstacle should be provided.’ In relation to the proposed Outdoor Sport and Recreation and Function Facility, the Report notes that ‘it is recommended that Council condition any approval associated large scale events as part of the development site (say, an event with 1,000 guests or more) with the requirement to provide an Event Traffic Management Plan to Council. It is noted that previous large events held at the site (with access via Emerald Falls Road) have provided a traffic management plan to Council. There have been no reported incidents associated with traffic at those events, with the road performing satisfactorily under the management plan.’

It is considered that the attached Report appropriately addresses Council’s abovementioned Information Request Item.

Information Request Item 3

Ecological Assessment

The subject site is situated in proximity to a National Park as well as the Wet Tropics Area. Please provide an Ecological Assessment, prepared by a suitably qualified professional, demonstrating that the proposed development, in particular the Outdoor Sport and Recreation (events) component, will not have a detrimental impact on the fauna present in these ecologically significant areas. The ecological assessment should also address the Environmental significance overlay code where relevant to the site.

Freshwater Planning Pty Ltd have been provided with the following by the Kanjini Co-Op Limited in relation to mitigating any perceived detrimental impacts to Fauna with the proposed Outdoor Sport and Recreation (events) component. It is noted that Kanjini Co-Op Limited has deep environmental roots which is apparent with the existing Approval over the site in addition to all the Landcare Aspects undertaken and provided over the site.

Kanjini has hosted the Roots Festival three times now with up to 1,200 attendees, performers and staff. There has been no noticeable negative effect on the ecology, in fact several hundred native bushes and trees have been planted and cared for during and as a part of those events. Additionally, Kanjini does not envision events with more 1,500 guests to ensure that minimal impact, if any, is provided to the natural Flora and Fauna of the site.

Additionally, Kanjini is actively engaged in environmental land management, is a member of the Northern Bettong Recovery Team, practices Indigenous inspired fire management, hosts a Wildlife Sanctuary and cooperated with several scientists on various environmental research. Last and not least Kanjini Co-Op Ltd over the last ten years has returned significantly large areas of this property from cleared land to high value regrowth.

Kanjini has such a strong commitment to the environment that we do not allow any dogs or cats on over 99.9% of our land (only exceptions are tenant's house yards) and we take a sizable security bond from all campers to ensure they look after country and leave no trace.

Large events are required to lodge large security bonds with us, and we are committed to ensure they too look after the country and leave no trace.

In addition, please see below the addressing of the relevant aspects of Environmental Significance Overlay Code.

Table 8.2.4.3A - Environmental significance overlay code - For self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Comments
For self-assessable and assessable development		
Regulated vegetation		
<p>PO1 Vegetation clearing in areas mapped as 'Regulated vegetation' identified on the Environmental Significance Overlay Maps (OM-004a-o) is avoided unless:</p> <p>(a) it is demonstrated that the area does not support regulated vegetation as mapped;</p> <p>(b) the loss or reduction in regulated vegetation is for community infrastructure and associated access facilities that cannot be avoided;</p> <p>(c) wildlife interconnectivity is maintained or enhanced at a local and regional scale; and</p> <p>(d) the loss or reduction in regulated vegetation is minimised and any residual impacts are offset.</p> <p>Note—A supporting Ecological Assessment Report is prepared in accordance with Planning</p>	<p>AO1.1 No clearing of native vegetation is undertaken within areas of 'Regulated vegetation' identified on the Environmental Significance Overlay Maps (OM-004a-o).</p>	<p>The proposal is for the extension to the existing Nature-Based Tourism Use, being the provision of a Tourist Park including Outdoor Sport and Recreation and Function Facilities with limited clearing proposed (now Function Facility and Tourism Cabins) over the 1,978 hectare site (Lots 66 & 68). It is not considered that the proposal will affect the areas of Environmental Significance over the site. Any proposed clearing provided within the Mapped Regulated Vegetation will be minimal and minimised ensure not to adversely affect the majority of the Vegetation provided over the site.</p> <p>Any loss or reduction in the Vegetation is minimised with any possible residual impacts offset by the vast Mapped Regulated Vegetation provided over the site. All interconnectivity will be maintained and enhanced with the proposed development. This is evident with the additional native vegetation being planted as a part of the Roots Festival.</p>

Performance outcomes	Acceptable outcomes	Comments
<p>Scheme Policy 2 – Ecological Assessment Reports.</p> <p>Note—Refer to Ecological corridors identified on SFM001-009 in consideration of wildlife connectivity at a regional scale.</p>		<p>It is considered that the minimal limited clearing of vegetation over the site will not adversely affect the existing Environmental Values and functioning of the site, instead will ensure to maintain and enhance the existing.</p>
<p>PO2 Development on sites adjacent to areas of ‘Regulated vegetation’ identified on the Environmental Significance Overlay Maps (OM-004a-o) protects the environmental significance of regulated vegetation and:</p> <p>(a) does not interrupt, interfere, alter or otherwise impact on underlying natural ecosystem processes such as water quality, hydrology, geomorphology and biophysical processes;</p> <p>(b) does not negatively impact the movement of wildlife at a local or regional scale; and</p> <p>(c) avoids noise, light, vibration or other edge effects, including weed and pest incursion on identified environmental values.</p> <p>Note—A supporting Ecological Assessment Report is prepared in accordance with Planning Scheme Policy 2 – Ecological Assessment Reports.</p> <p>Note—Refer to Ecological corridors identified on SFM001-009 in consideration of wildlife connectivity at a regional scale.</p>	<p>AO2 Development (excluding roads, earthworks, drainage infrastructure and underground infrastructure) is not located within 20 metres of ‘Regulated vegetation’ areas identified on the Environmental Significance Overlay Maps (OM-004a-o).</p>	<p>The proposal is provided over 1,978 hectares (Lots 66 & 68) and will ensure that any clearing proposed with the development will not interrupt, interfere, alter or otherwise impact on the natural ecosystem or biophysical processes. No negative impact of the wildlife is envisaged with the proposal at any Local or Regional scale. The minimal impact that the proposal may have has been mitigated against with the proposed development ensuring to result in greater protection of the natural and physical features of the site.</p> <p>Given the proponents Ecofriendly, Nature-based mission along with the continued protection, educations and enhancement of the existing natural environment, and the scale of the proposal over 1,978 hectares of natural environment, an Ecological Assessment is not considered required, in this instance.</p>
Regulated vegetation intersecting a watercourse		
<p>PO3 Vegetation clearing in areas mapped as ‘Regulated vegetation intersecting a watercourse’, identified as ‘Waterway’ and ‘Waterway buffer’ on the Environmental Significance - Waterway Overlay Maps (OM-004p-z) is avoided unless wildlife interconnectivity between habitats is maintained or enhanced at a local and regional scale, to the extent that migration or normal movement of significant species between habitats or normal gene flow between populations is not inhibited.</p> <p>Note—A supporting Ecological Assessment Report is prepared in accordance with Planning Scheme Policy 2 – Ecological Assessment Reports.</p>	<p>Where within a ‘Waterway buffer’ on Environmental Significance - Waterway Overlay Maps (OM-004p-z)</p> <p>AO3.1 A minimum setback in accordance with Table 8.2.4.3B is provided between development and the top of the high bank of a ‘Waterway’ identified on the Environmental Significance - Waterway Overlay Maps (OM-004p-z).</p> <p>Where within a ‘Waterway buffer’ on Environmental Significance - Waterway Overlay Maps (OM-004p-z)</p> <p>AO3.2 No clearing of native vegetation is undertaken within the minimum setback identified at AO3.1.</p>	<p>The proposal is for the extension to the existing Nature-Based Tourism Use, being the provision of a Tourist Park including Outdoor Sport and Recreation, and Function Facilities with limited clearing proposed (now Function Facility and Tourism Cabins) over the 1,978 hectare site (Lots 66 & 68). It is not considered that the proposal will affect the areas of Environmental Significance over the site. Any proposed clearing provided within the Mapped Regulated Vegetation will be minimal and minimised ensure not to adversely affect the majority of the Watercourses and Waterways provided over the site.</p> <p>All interconnectivity will be maintained and enhanced with the proposed development. This is evident with the additional native vegetation being planted as a part of the Roots Festival. The</p>

Performance outcomes	Acceptable outcomes	Comments
<p>Note—Refer to Ecological corridors identified on SFM001-009 in consideration of wildlife connectivity at a regional scale.</p>		<p>proposal will ensure that any clearing proposed with the development will not interrupt, interfere, alter or otherwise impact on the natural ecosystem or biophysical processes. No negative impact of the wildlife, watercourse or riparian vegetation is envisaged with the proposal at any Local or Regional scale. The minimal impact that the proposal may have has been mitigated against with the proposed development ensuring to result in greater protection of the natural and physical features of the site.</p>
<p>For assessable development</p>		
<p>Wildlife Habitat</p>		
<p>PO5 Development within a 'Wildlife habitat' area identified on the Environmental Significance Overlay Maps (OM-004a-o):</p> <ul style="list-style-type: none"> (a) protects and enhances the habitat of Endangered, Vulnerable and Near Threatened (EVNT) species and local species of significance; (b) incorporates siting and design measures to protect and retain identified ecological values and underlying ecosystem processes within or adjacent to the development site; (c) maintains or enhances wildlife interconnectivity at a local and regional scale; and (d) mitigates the impact of other forms of potential disturbance (such as presence of vehicles, pedestrian use, increased exposure to domestic animals, noise and lighting impacts) to protect critical life stage ecological processes (such as feeding, breeding or roosting). <p>Note—Development applications must identify any EVNT species or their habitats that may be affected by the proposal. In particular, applications are to identify and describe how the development avoids adverse impacts on ecological processes within or adjacent to the development area.</p> <p>Note—A supporting Ecological Assessment Report is prepared in accordance with Planning Scheme Policy 2 – Ecological Assessment Reports.</p> <p>Note—Refer to Ecological corridors identified on SFM001-009 in consideration of wildlife connectivity at a regional scale.</p>	<p>A05 No acceptable outcome is provided</p>	<p>Not Applicable. No Development is proposed within a Wildlife Habitat Area.</p>

Bushfire Management Plan

Development is proposed within the medium potential bushfire intensity area and potential impact buffer (100 metres).

Please provide a detailed Bushfire Hazard Management Plan, prepared by a suitably qualified professional demonstrating compliance with P01, P02, P04 and P08 of the Bushfire hazard overlay code.

The proposal development is for Environmentally Friendly Nature-Based Camping, RV's, Events and Cabin stays within the natural environment. The proposal can be provided with appropriate fire safety, setbacks and firebreaks where necessary. The provision of appropriately located water supplies can be Conditioned and provided with any Approval over the site. It is not considered that a Bushfire Hazard Management Plan is required at this stage in the Development Application process and can be Conditioned as a part of any Approval over the site. Any Bushfire Management Plan provided over the site will ensure to demonstrate compliance with abovementioned Performance Outcomes of the Bushfire Hazard Overlay Code.

Kanjini Co-Op Ltd would like to point out that *'a recent wildfire (in late October 2023) coming onto our land from Tinaroo Creek Road was a fast moving raging hot fire until it encountered Kanjini's land. Due to over four years of Indigenous inspired mosaic burns and ongoing fire management in cooperation with Parks and Wildlife and Indigenous rangers, the wild fire and backburns conducted by QRFS on Kanjini land were surprisingly cool and slow on Kanjini land considering the extremely dry, hot and windy conditions, taking about a week to creep about 7km uphill in eucalypt country'.*

Below is further information provided in relation to the aforementioned Performance Outcomes, in lieu of the requested to be Conditioned Bushfire Management Plan.

Performance outcomes	Acceptable outcomes	Comments
For self-assessable and assessable development		
Water supply for fire-fighting purposes		
<p>PO1 Development where within a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o) maintains the safety of people and property by providing an adequate, accessible and reliable water supply for fire-fighting purposes which is safely located and has sufficient flow and pressure characteristics.</p> <p>Note— A Bushfire hazard management plan must be prepared by suitably qualified persons in seeking to demonstrate compliance with the Performance outcome.</p>	<p>Where within a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o)</p> <p>AO1.1 Where in a reticulated water service area, the on-site water supply has flow and pressure characteristics of 10 litres a second at 200 kPa.</p> <p>OR</p> <p>AO1.2 Where access to the reticulated water network is not available, a minimum on site water storage of 5,000 litres is provided that must comprise:</p> <p>(a) a separate tank; or (b) a reserve section in the bottom part of the main water supply tank; or (c) a dam; or (d) a swimming pool.</p> <p>Note—Where a water tank is provided for fire-fighting purposes it is fitted with standard rural</p>	<p>The proposed development is provided with a number of on-site water supplies in the form of Dams and Watercourses.</p> <p>The existing Dam is substantially greater than 5,000L in addition to the Watercourses.</p> <p>The site also contains a 44,000L tank with cam-lock fitting, another 27,000L tank with cam-lock fitting, over ten 2" steel risers and gatevalves along 2.5km of underground pipes, a 450ML lake, five smaller Dams and over 2.3km of permanent emerald creek flowing through the subject site.</p> <p>It is considered that an appropriate reliable level of water supply for firefighting purposes is provided onsite.</p>

Performance outcomes	Acceptable outcomes	Comments
	fire brigade fittings and the tank is provided with a hardstand area for heavy vehicles.	
For assessable development		
Land use		
<p>PO2 Development within a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o) is appropriate to the bushfire hazard risk having regard to the:</p> <ul style="list-style-type: none"> (a) the bushfire risk compatibility of development; (b) the vulnerability of and safety risk to persons associated with the use; and (c) consequences of bushfire in regard to impacts on essential infrastructure, buildings and structures. <p>Note— A Bushfire hazard management plan must be prepared by suitably qualified persons in seeking to demonstrate compliance with the Performance outcome.</p>	<p>AO2 All buildings, structures, infrastructure and facilities associated with the following uses are located outside any area of the site located within a 'Bushfire hazard area' and a 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o):</p> <ul style="list-style-type: none"> (a) child care centre; or (b) community care centre; or (c) correctional facility; or (d) educational establishment; or (e) emergency services; or (f) hospital; or (g) hostel; or (h) residential care facility; or (i) retirement facility; or (j) shopping centre; or (k) tourist park; or (l) tourist attraction. 	<p>The location of the proposed Cabins, Function Facility and Caretaker's Residences have been meticulously chosen to ensure the most appropriate positioning in relation to the site, their function, and their Bushfire Hazard safety. All proposed elements of this development will have nearby roads or natural features serving as firebreaks. Kanjini Co-Op has a proven 4-5 year history of large-scale Indigenous inspired fire-management which also provides effective fuel-reduction, especially around critical infrastructure. Effective firebreaks and fuel-reduction burns have been established and approved by local fire authorities for the Kuranda Roots Festival which has been hosted for the last three years.</p> <p>It is considered that the position of these structures have been purposely selected to ensure the most appropriate location ensuring that an acceptable level of Bushfire Hazard safety is provided.</p>
Firebreaks and access		
<p>PO4 In a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o), vehicular access is designed to mitigate against bushfire hazard by:</p> <ul style="list-style-type: none"> (a) ensuring adequate access for fire-fighting and other emergency vehicles; (b) ensuring adequate access for the evacuation of residents and emergency personnel in an emergency situation, including alternative safe access routes should access in one direction be blocked in the event of a fire; and (c) providing for the separation of developed areas and adjacent bushland. <p>Note—Where it is not practicable to provide firebreaks in accordance with A04.2 Fire Maintenance Trails are provided in accordance with the following: located as close as possible to the boundaries of the lot and the adjoining hazardous vegetation;</p>	<p>AO4.1 In a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o), roads are designed and constructed:</p> <ul style="list-style-type: none"> (a) with a maximum gradient of 12.5%; (b) to not use cul-de-sacs; and (c) a constructed road width and weather standard complying with Planning Scheme Policy 4 - FNQROC Regional Development Manual. <p>AO4.2 In a 'Bushfire hazard area' and 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o), firebreaks are provided:</p> <ul style="list-style-type: none"> (a) consisting of a perimeter road that separates lots from areas of bushfire hazard; 	<p>The proposal is provided over a Rural Allotment containing an area of 1,978 hectares (Lots 66 & 68). Existing adequate access tracks are located over the site and utilised as a part of this development. It is considered that the proposed development provides appropriate access tracks adequate for firefighting and other emergency vehicles or has the ability to be appropriately accessed. Appropriate firebreaks and setbacks can be achieved over the site. Where possible the provision of Fire Maintenance Trails can be provided if required.</p>

Performance outcomes	Acceptable outcomes	Comments
<p>the minimum cleared width not less than 6 metres; the formed width is not less than 2.5 metres; the formed gradient is not greater than 15%; vehicular access is provided at both ends; passing bays and turning areas are provided for fire-fighting appliances located on public land.</p> <p>Note— A Bushfire hazard management plan must be prepared by suitably qualified persons in seeking to demonstrate compliance with the Performance outcome.</p>	<p>(b) a minimum cleared width of 20 metre;</p> <p>(c) a maximum gradient of 12.5%; and</p> <p>(d) a constructed road width and weather standard complying with Planning Scheme Policy 4 - FNQROC Regional Development Manual.</p>	
Private driveways		
<p>PO8 All premises located in a 'Bushfire hazard area' and a 'Potential impact buffer (100 metres)' identified on the Bushfire hazard overlay maps (OM-003a-o) are provided with vehicular access that enables safe evacuation for occupants and easy access by fire-fighting appliances.</p> <p>Note— A Bushfire hazard management plan must be prepared by suitably qualified persons in seeking to demonstrate compliance with the Performance outcome.</p>	<p>A08 Private driveways:</p> <p>(a) do not exceed a length of 60 metres from the street frontage;</p> <p>(b) do not exceed a gradient of 12.5%;</p> <p>(c) have a minimum width of 3.5 metres;</p> <p>(d) have a minimum vertical clearance of 4.8 metres;</p> <p>(e) accommodate turning areas for fire-fighting appliances in accordance with the Queensland Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines; and</p> <p>(f) serve no more than three dwellings or buildings.</p>	<p>The proposal is provided over a Rural Allotment containing an area of 1,978 hectares (Lots 66 & 68). Existing adequate access tracks are located over the site and utilised as a part of this development. It is considered that the proposed development provides appropriate access tracks adequate for firefighting and other emergency vehicles or has the ability to be appropriately accessed.</p>

Information Request Item 5

Events, Functions and Educational Activities

Please amend the Town Planning Submission to clearly state that the number of persons nominated for "Events, Functions and Educational Activities" for each stage of the proposed development is on a per annum basis, and not per individual event, function or educational activity.

As noted on Page 1, as a result of Investigations, discussions and additional Information (inclusive of professional Reports and advices) undertaken in relation to Council's Information Request, the Department's Information Request and the Department's Advice Notice, the Development Application has defined its Uses, numbers and the likes. This has resulted in Amending the Development Application to remove the Educational Establishment Use aspect of the proposal.

Further, for additional clarity, Freshwater Planning Pty Ltd can clarify that the 'The Proposed Development' section of the Development Application nominates the Events and Functions are based upon a per annum figure and not per individual Event or Function. Attached to the Response to Information Request is a Proposed Events and Functions Letter as provided by Kanjini Co-Op Limited reaffirming this.

Freshwater Planning Pty Ltd can clarify that the 'The Proposed Development' section of the Development Application nominates the Events and Functions are based upon a per annum figure and not per individual Event or Function. Further, the proposed size of the Function Facility will not allow for more than 300 guests and the available space at both event sites will not allow for any more than 2,000 guests at any single event. Attached to the Response to Information Request is a Proposed Events and Functions Letter as provided by Kanjini Co-Op Limited reaffirming this. In addition to this, for further clarity, please see below:

Stage 1 – Tourist Park, Events (Outdoor Sport and Recreation)

Camping Areas – four (4) new sites - camps 15-18

RV/Caravan Area – five (5) new RV sites

Events (Outdoor Sport and Recreation) – up to 2,000 persons per annum (existing Lake-side Day Area and Camping Area 2 with no single event hosting more than 1,500 guests)

Manager's Residence

Additional Amenities (Toilets/Showers)

Stage 2 – Tourist Park, Events (Outdoor Sport and Recreation)

Camping Areas – two (2) additional new sites - camps 19-20

RV/Caravan Area – five (5) additional new RV sites

Tourist Cabin Area – three (3) new Cabins

Events (Outdoor Sport and Recreation) – up to 3,500 persons [+1,500] per annum (existing Lakeside Day Area and Camping Area 2 with no single event hosting more than 1,500 guests)

Additional Amenities (Toilets/Showers)

Stage 3 – Tourist Park, Events (Outdoor Sport and Recreation and Function Facility)

Tourist Cabin Area – five (5) additional new Cabins

Events (Outdoor Sport and Recreation) and Functions (Function Facility) – up to 6,000 persons [+2,500] per annum (existing Lakeside Day Area and Camping Area 2 with no single event hosting more than 2,000 guests)

Function Facility – This Building encompasses approximately 300 m² and parking.

Stage 4 – Events (Outdoor Sport and Recreation and Function Facility)

Events (Outdoor Sport and Recreation) and Functions (Function Facility) – up to 12,000 persons [+6,000] per annum (existing Lakeside Day Area and Camping Area 2 with no single event hosting more than 2,000 guests)

The previous Educational Establishment Facility Building will now only be provided as a Function Facility within Stage 3 and will consist of an approximate building of 300 m² and a Parking Area.

This completes this Response to the Information Request. Please do not hesitate to contact me, in the first instance, should you require further information in relation to the matter.

Yours faithfully,



MATTHEW ANDREJIC

FRESHWATER PLANNING PTY LTD

Kanjini Co-Op Ltd

Development Application Map

Legend

- 2WD Roads
- 4WD Roads
- Adler-Hill Road
- Camp Access only
- Emerald Creek
- Existing Camp Sites
- Property Boundaries
- Proposed Camp Sites
- Walk / Bikes only



Proposed Event Site 1

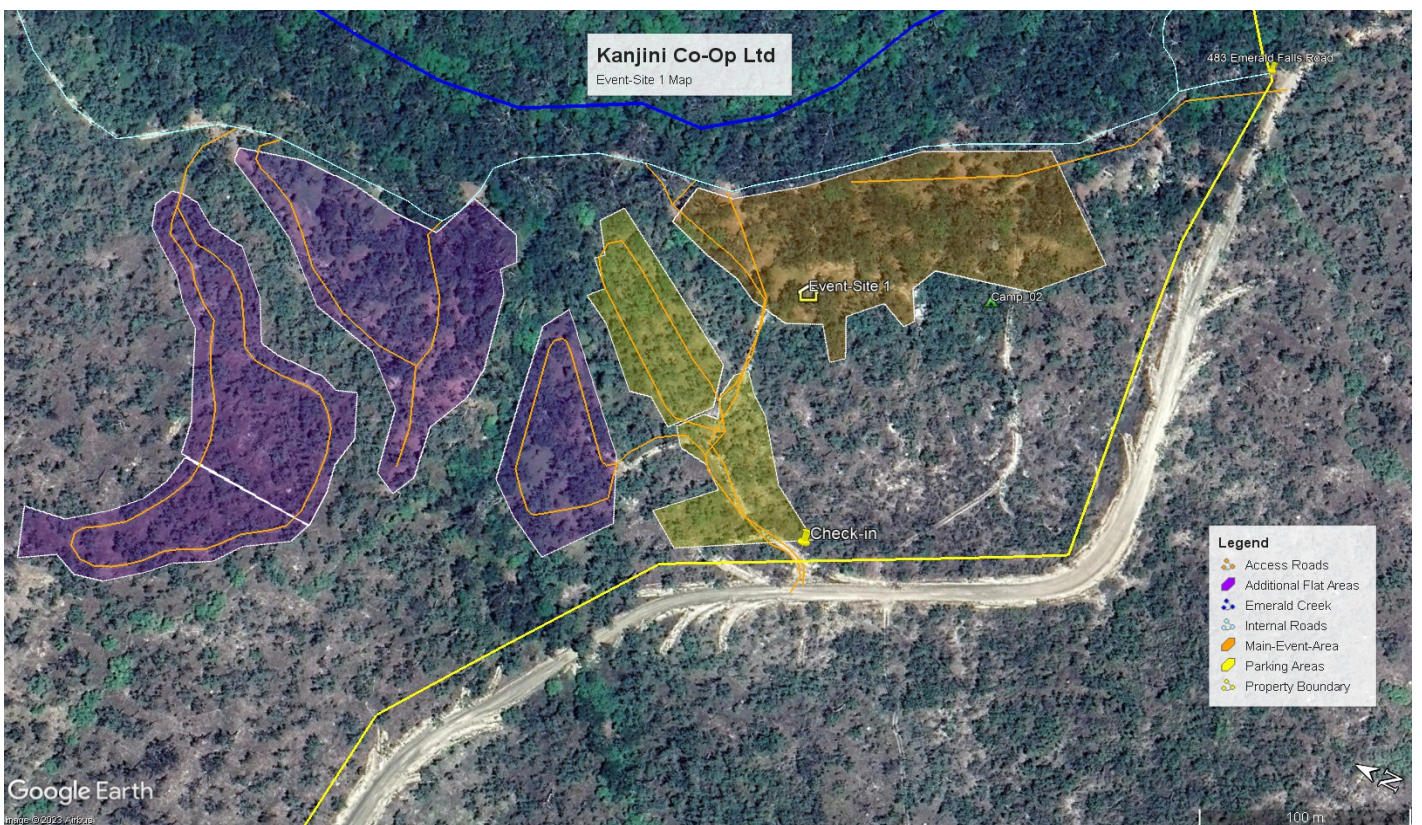
The proposed Event Site 1 is at 438 Emerald Falls Road. There is some existing infrastructure, namely two ~70sqm covered decks, five toilets, five showers and two hand basins.

While it always will be the event organiser's responsibility to ensure the supply of sufficient facilities for their event, Kanjini might add more facilities in the future.

The Kuranda Roots Festival used this site in 2021, 2022 and 2023 with great success. Kuranda Aboriginal elders were very happy to see this over 20 year old event to happen on country and without alcohol.



Indigenous dances at Kuranda Roots festival



Event Site 1 – shaded areas are level areas available for event infrastructure and activities

The orange shaded main event area in above "Event-Site 1 Map" map provides about 1.2Ha, shaded by large trees.

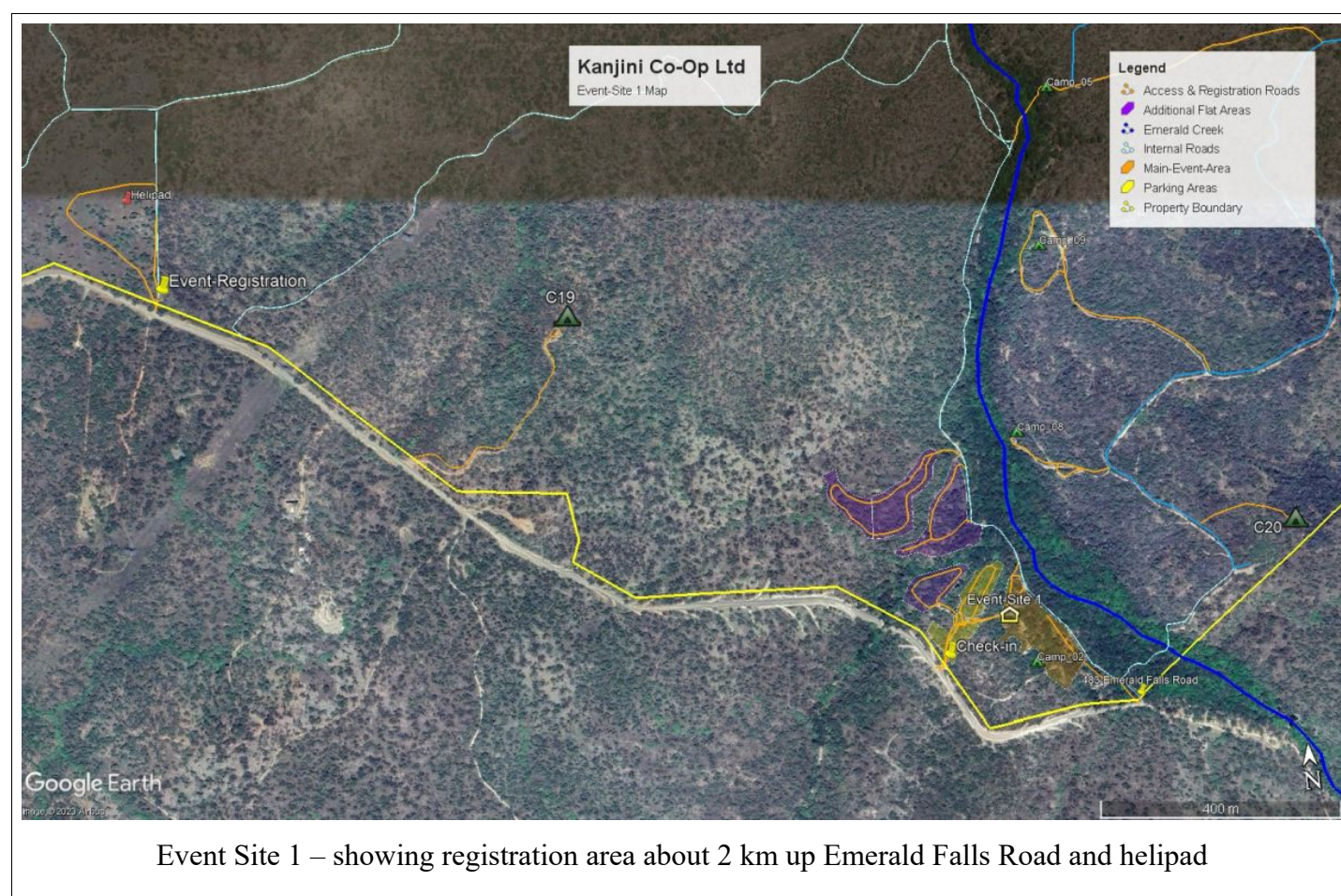
The yellow shaded area provides about 0.8Ha for parking.

The purple and blue shaded areas would make about 3Ha of additional level areas available for parking, or other event infrastructure or activities.

Kanjini Co-Op intends to limit any event to about 1,500 - 2,000 guests to minimise any environmental impact and ensure a relaxed family atmosphere.

There is a helipad for emergencies and a separate registration area on our land about two kilometers up Emerald Falls Road (see below map).

This registration area features an over 500m long loop road to avoid any cars lining up along Emerald Falls Road during registration.



This festival layout has worked very well over the last three years and none of the neighbours within 3km of this site had any issues with the minimal noise and traffic impacts.

Proposed Event Site 2

The proposed Event Site 2 is next to our 25 acre lake.

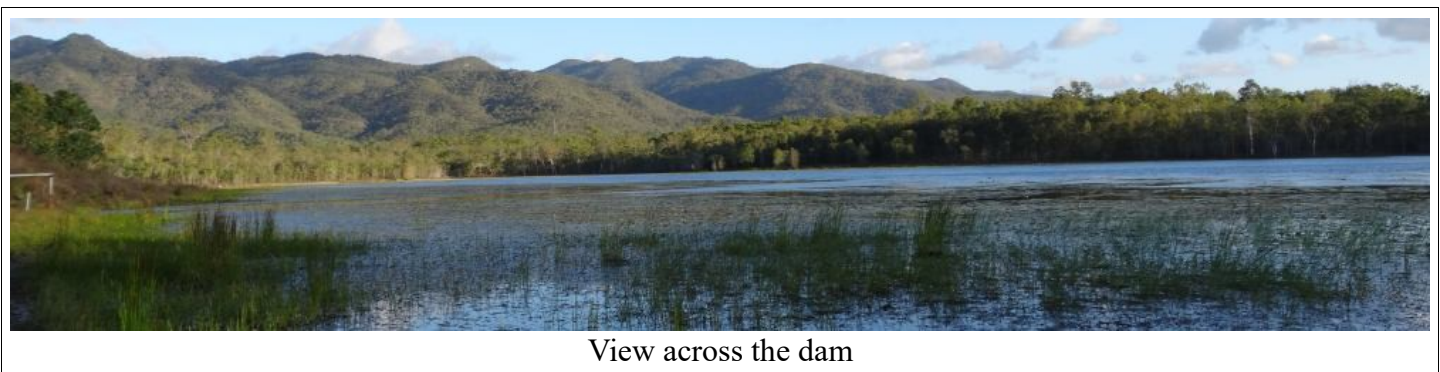
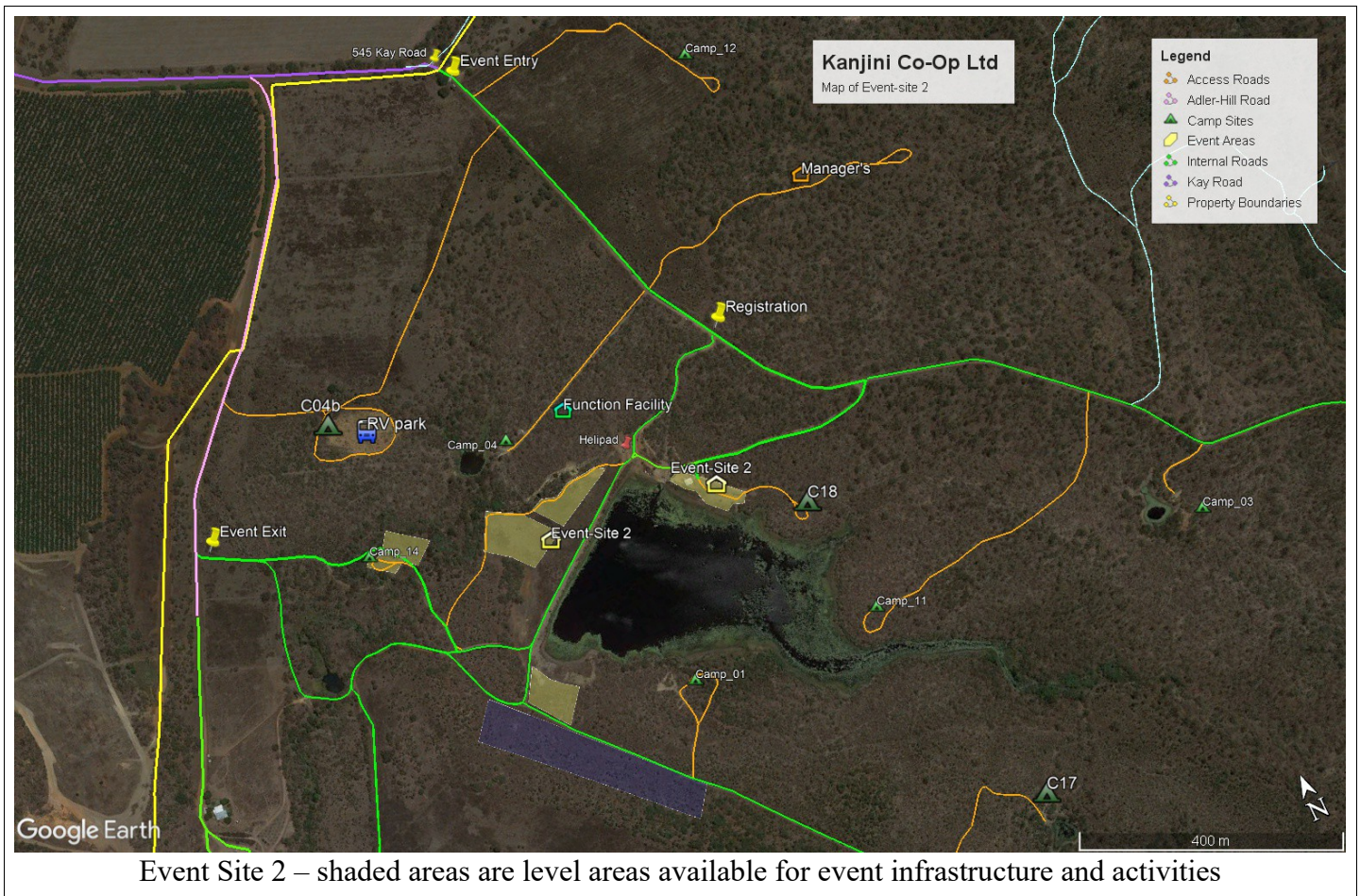
There is some existing infrastructure, namely three toilets, a hand basin, and an about 100 square meter tarp.

While it always will be the event organiser's responsibility to ensure the supply of sufficient facilities for their event, we might add more facilities in the future.

The five smaller yellow shaded areas in below map are level areas available for event purposes. They add up to about 2Ha in size.

The larger blue shaded area in the bottom of the below map can provide another 2Ha of level area for event purposes.

Four camp sites and the proposed function facility are within a short walk from this event site and could also be hired by the event organisers.



Proposed Tourist-Cabins

The proposed Tourist Cabin site is utilising an about 2.5Ha area on a ridge within walking distance of Emerald Creek.

The site was chosen because it is naturally already almost totally clear of trees.

The site is serviced by an existing 2WD gravel road.

We envision to build eight tourist cabins here and the vision is for each one to be built using unusual designs and materials.

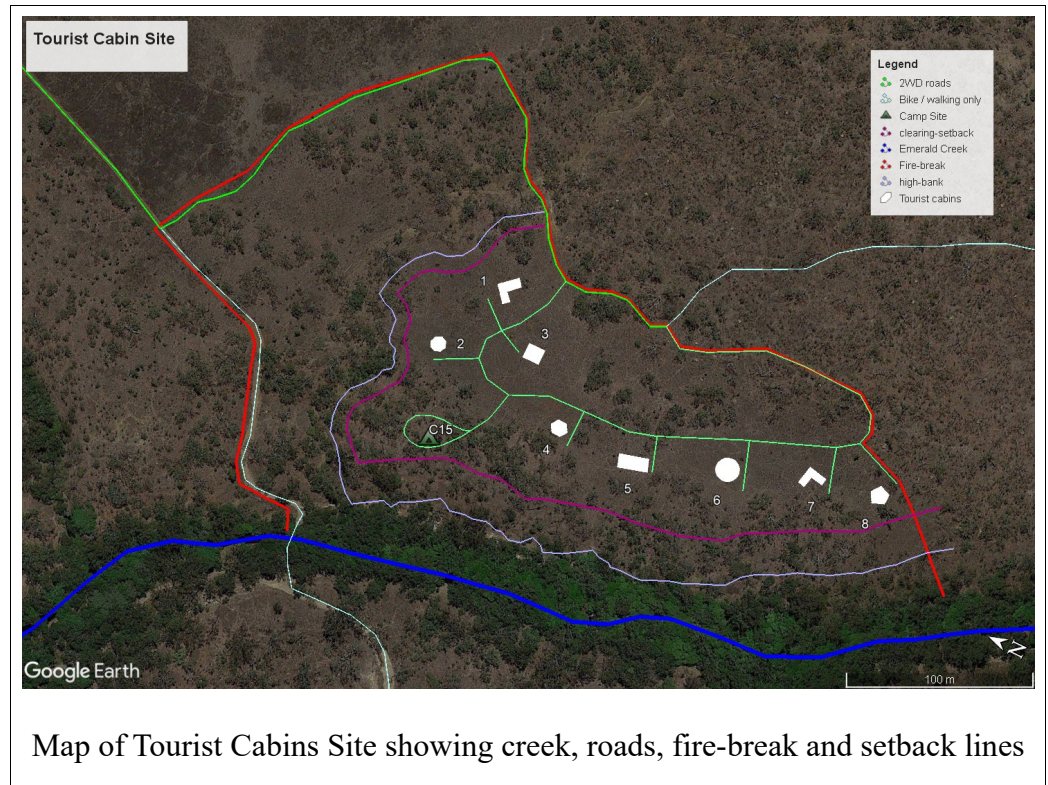
For example there

could be a round cabin or a curved one, an octagon or a hexagram, a free-form or spiral or a tower.

Materials used could be rock, mud, straw, air-crete or hemp-crete, some could have green roofs or one could be a hobbit cabin.

If we secure approval without too onerous conditions, we intend to invite architects and designers to come up with innovative and interesting designs.

We are hoping to attract southerners and overseas visitors to Mareeba Shire to experience spending a few days or weeks in such a totally different house, to get a feel for more sustainable living.



Map of Tourist Cabins Site showing creek, roads, fire-break and setback lines

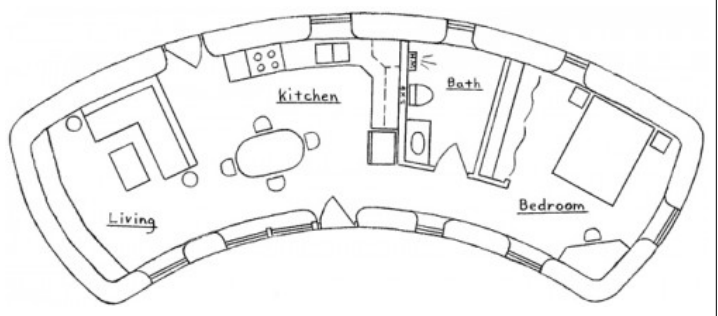


Tourist Cabin Site – Chosen because there is a large natural clearing already

Here a few concept drawings on what these tourist cabins may look like:



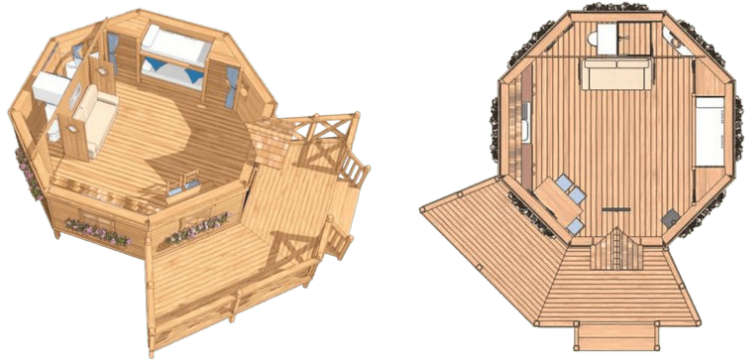
Arc-shaped cabin with green roof - Elevation



Arc-shaped cabin with green roof - Floorplan



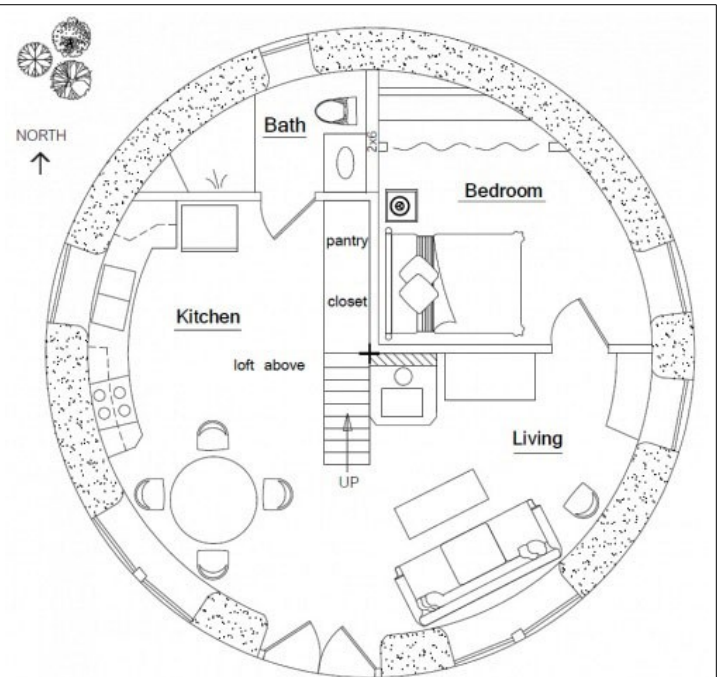
Hexagonal Wood Cabin - Elevation



Hexagonal Wood Cabin - Floorplan



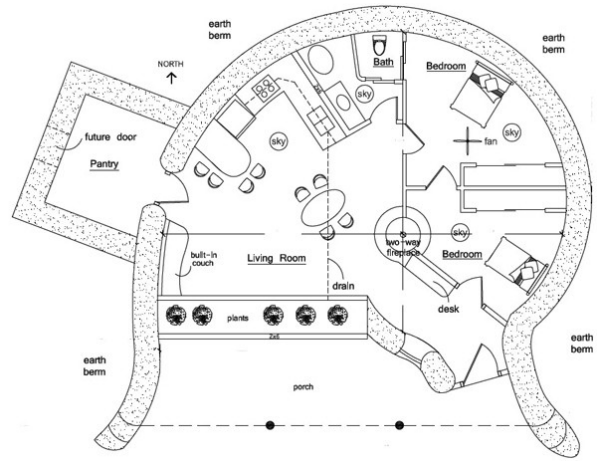
Round Cabin - Elevation



Round Cabin - Floorplan



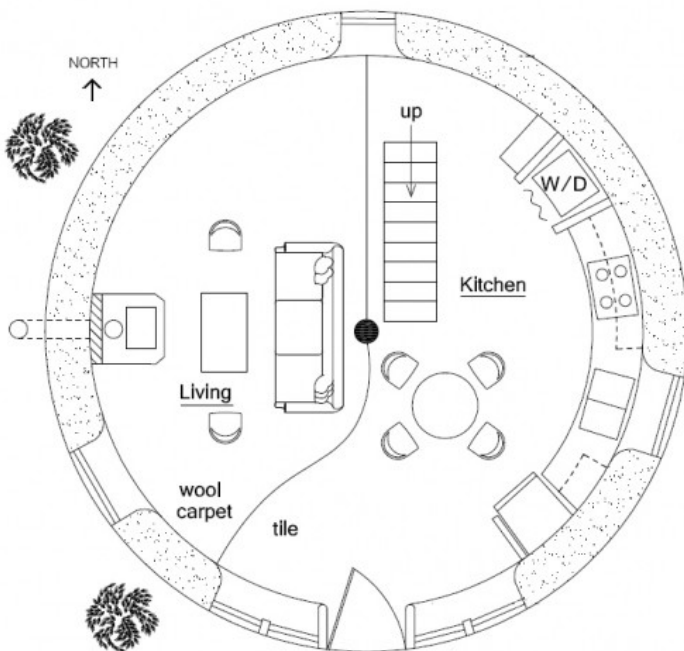
Spiral Cabin - Elevation



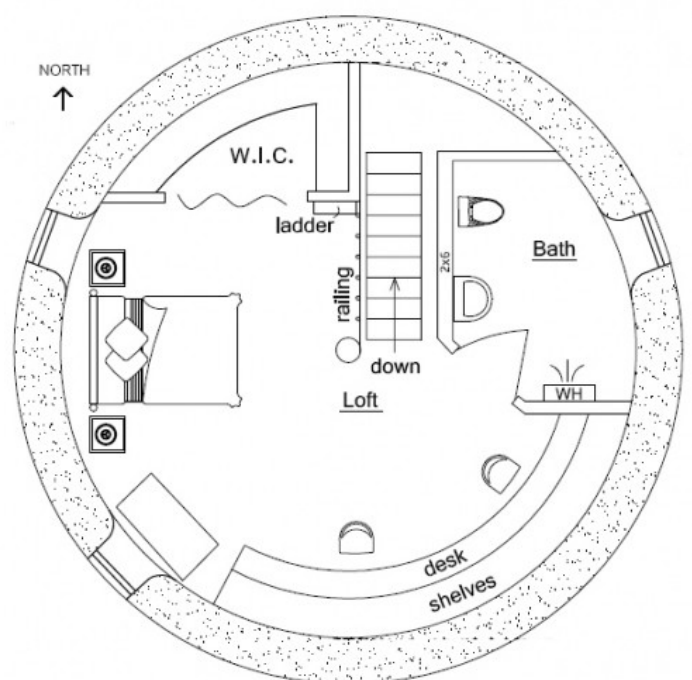
Spiral Cabin - Floorplan



Tower Cabin - Elevation



Tower Cabin - Groundfloor



Tower Cabin - Upstairs

Proposed RV Site

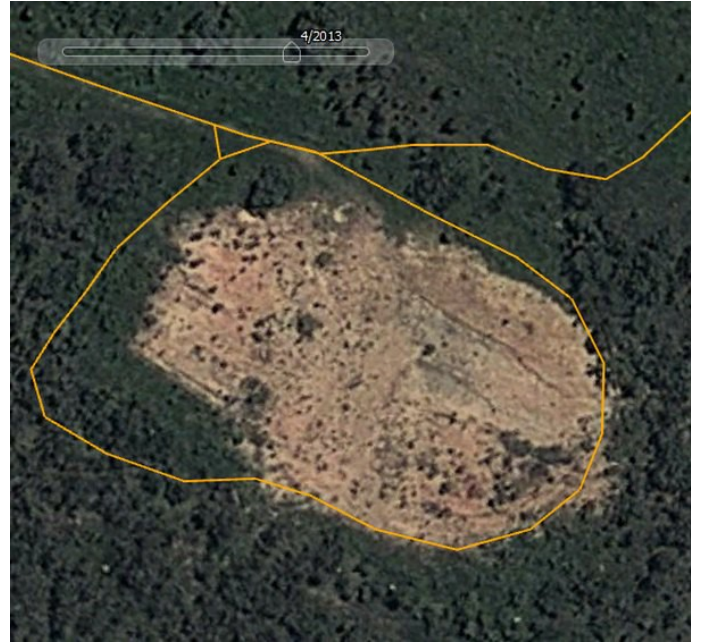
We were told that the proposed RV site was used as a council quarry for road base a long time ago and then again by previous owners or lessees.

When we purchased the property, this area was badly eroded and with hardly any vegetation.

About four years ago we decided to arrest the erosion by shaping the area into five east-facing terraces, offering panoramic views of the mountains, including Kahlpahlm Rock, Bunda Badjigal (Turtle Rock), Mount Tiptree and Mount Haig.



Aerial view of terraces



Google-earth view of the area when we bought the property (orange lines are existing roads)

The lower four terraces are each about ten to twelve meters wide and about sixty meters long, while the top one is triangle shaped and about 800 square meters.

We envision only two to three RV sites on each terrace, with RVs parked in the middle of a terrace, allowing for other RVs to pass behind and still giving plenty of outdoor space on the eastern side of the RV to enjoy the views. Stage 1 of the proposed development will see 5 RV sites used, Stage 2 the other five.

RV's are totally self contained and do not require the provision of any services.

We believe that the location, the views and the numerous activities available on our property will make this a valuable tourist asset for the Mareeba area.



View from RV site

Proposed Events & Functions

The development application includes two event sites and one function facility.

EVENTS:

The proposed Event Site 1 is located at 438 Emerald Falls Road.

The proposed Event Site 2 and Function Facility are located close to each other near our 25 acre (10Ha) lake with access from 545 Kay road.



View over most of our property

Both event sites are at least 1.2km from the nearest neighbouring residence and 2.5km away from each other.

Stage 1 of the development allows for a total of up to 2,000 guests per year to attend various Events and Functions.

Stage 2 of the development allows for up to 3,500 guests per year

Stage 3 of the development allows for up to 6,000 guests per year and the construction of the function facility

Stage 4 of the development allows for up to 12,000 guests per year



View of part of event site 1

These are very modest numbers. For example in stage 1 we can only have one medium sized event like Kuranda Roots and maybe half a dozen smaller functions or other events during a whole year, while stage 4 will allow us to have say four to five medium sized and a dozen smaller functions or other events during the year.

The proposed development is vary small scale considering the vast size of this property and the reason for this development application is not to make large amounts of money, but to share this amazing property with the wider community.

The availability of level areas and practicalities of both event sites is likely to limit the number of people attending any single event to no more than ~1,000-2,000 persons.

The establishment of the event sites does not require any clearing.

They already have some facilities and Kanjini Co-Op Ltd might add more facilities to the event sites in the future.

However it will always be the event organiser's responsibility to ensure the supply of sufficient services and facilities for their event (security, medic, traffic control, catering, insurance, stages, marquees, toilets, showers, power etc)



Views at event site 2

Kanjini Co-Op Ltd has already hosted the Kuranda Roots Festival in 2021, 2022 and 2023 with about 700-1,200 persons at the proposed event site 1. These three-day festivals were very successful and without any major incidents and all attendees really enjoyed the beautiful location.

FUNCTIONS:

The proposed function facility will be limited to about 300-400 sqm in size and as such will not be able to accommodate more than 200-300 people (see attached concept drawings).

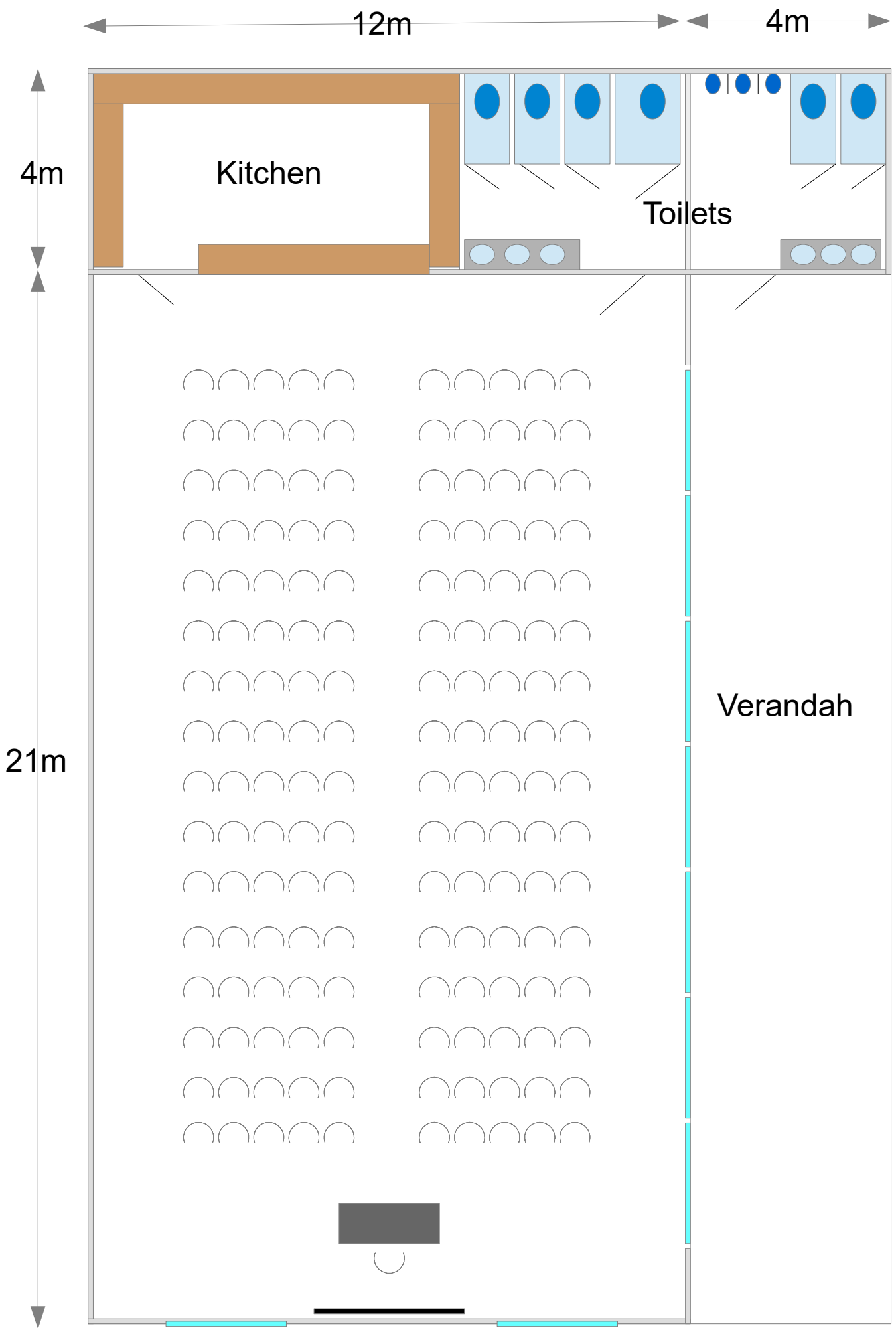
It is overlooking and within walking distance of our 25 acre lake and will offer a stunning backdrop to any marriage or other function.

It is located close to our main entry to ensure easy 2WD access and there is plenty of already cleared parking areas close-by.



View from proposed function facility site

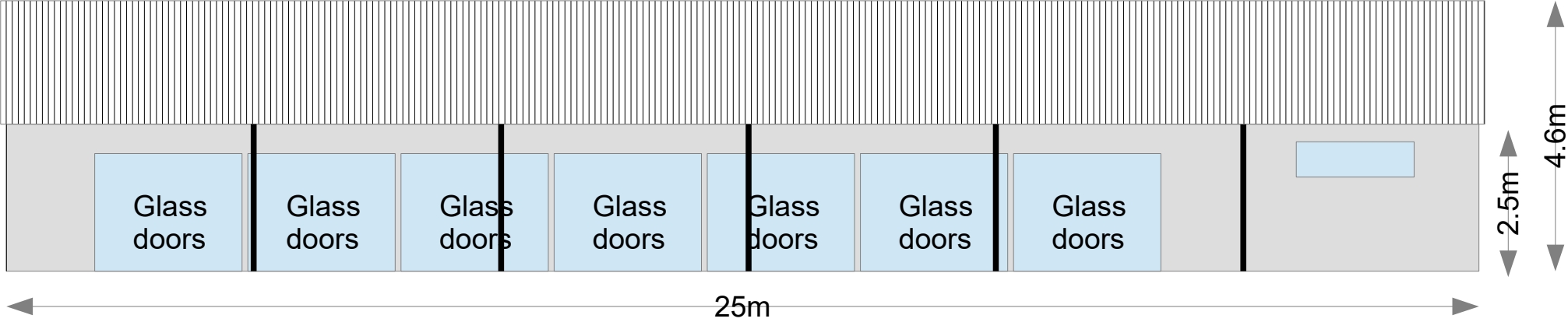
The unique scenic location of these events and function sites have the potential to attract boutique events and functions to Mareeba Shire. For example, we already had an inquiry from a major firm to fly their Sydney staff in for their Christmas function because of the unique scenery



Proposed Function Facility - Layout

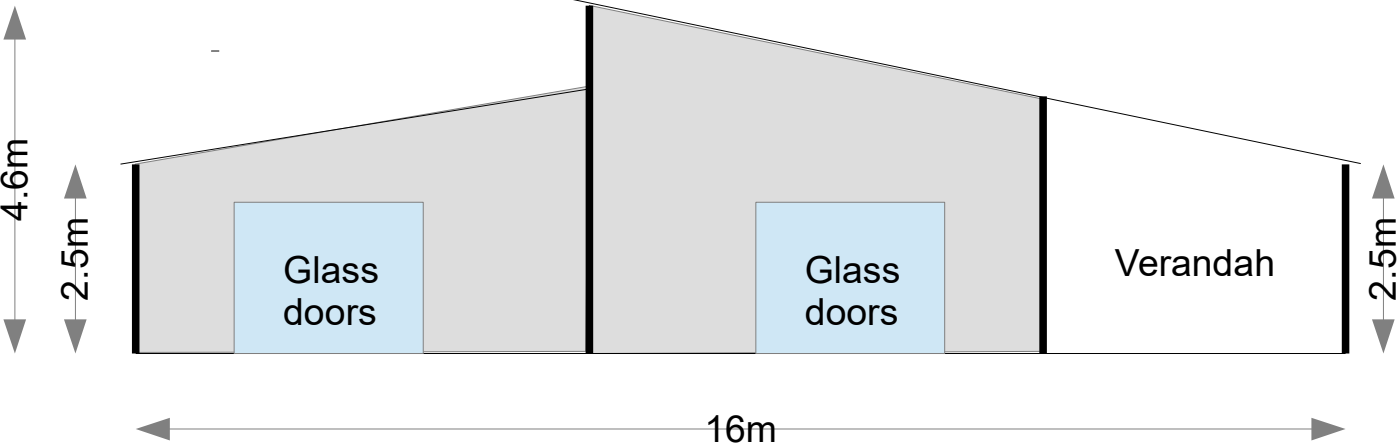
Proposed Function Facility

South-East Elevation



Proposed Function Facility

South-West Elevation



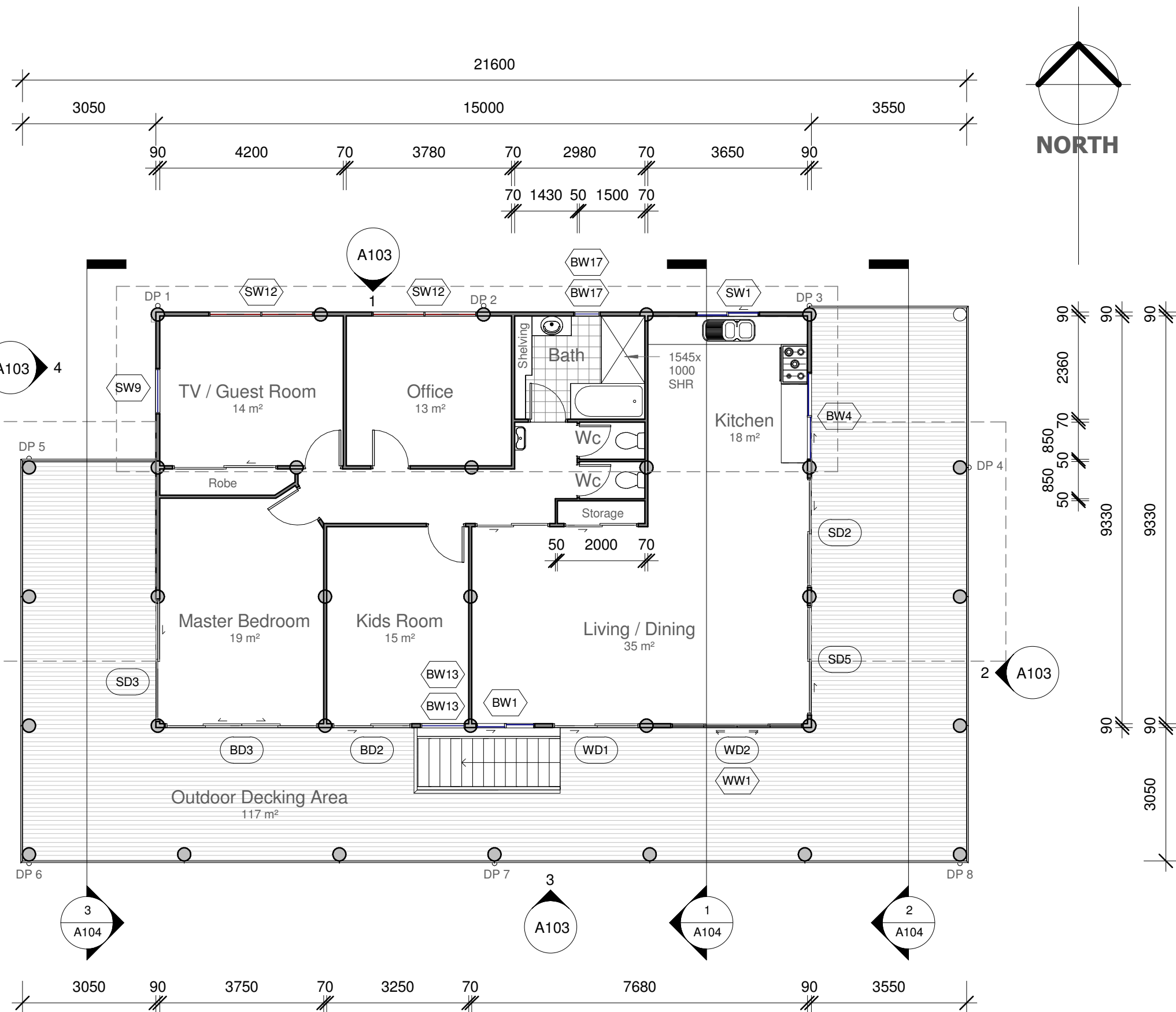
GENERAL NOTES:

- WALL NOGGING TO BE 450mm ON EXTERNAL WALLS AND 600mm ON INTERNAL WALLS 1350mm HIGH.

- 9mm PLYWOOD CLADDING INTERNALLY AND EXTERNALLY.

- ROOF BATTENS TO BE 70x35mm @ 900mm SPACING (600mm SPACING FOR TOP AND BOTTOM ROWS).

- CYCLONE SHUTTERS TO BE MADE FROM EITHER 75mm TIMBER @ 450mm & 1350mm SPACING OR FROM 75x30x0.9mm GALVANISED WALL NOGGING. BOTH WILL BE COVERED WITH ROOFING IRON AND HINGED ABOVE WINDOWS/DOORS, SO THEY CAN BE EASILY LET DOWN AND LOCKED INTO PLACE WITH BARREL-BOLTS.



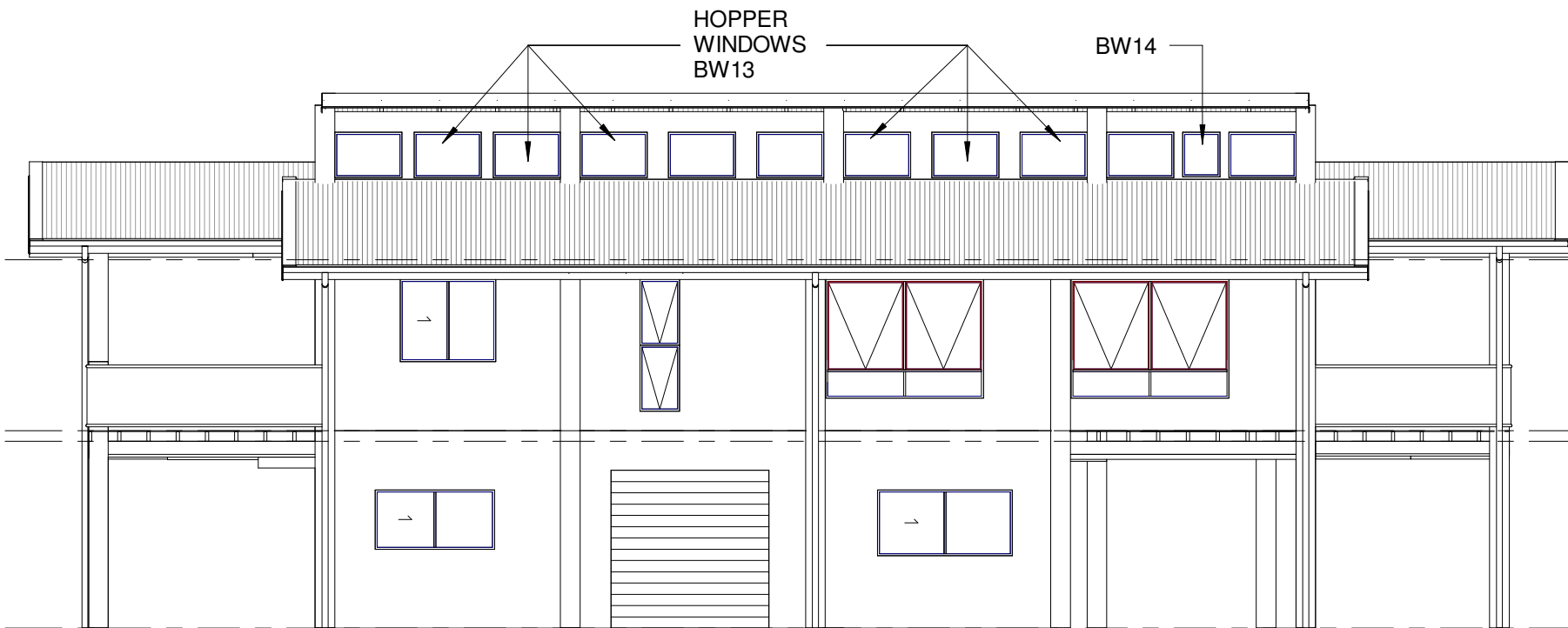
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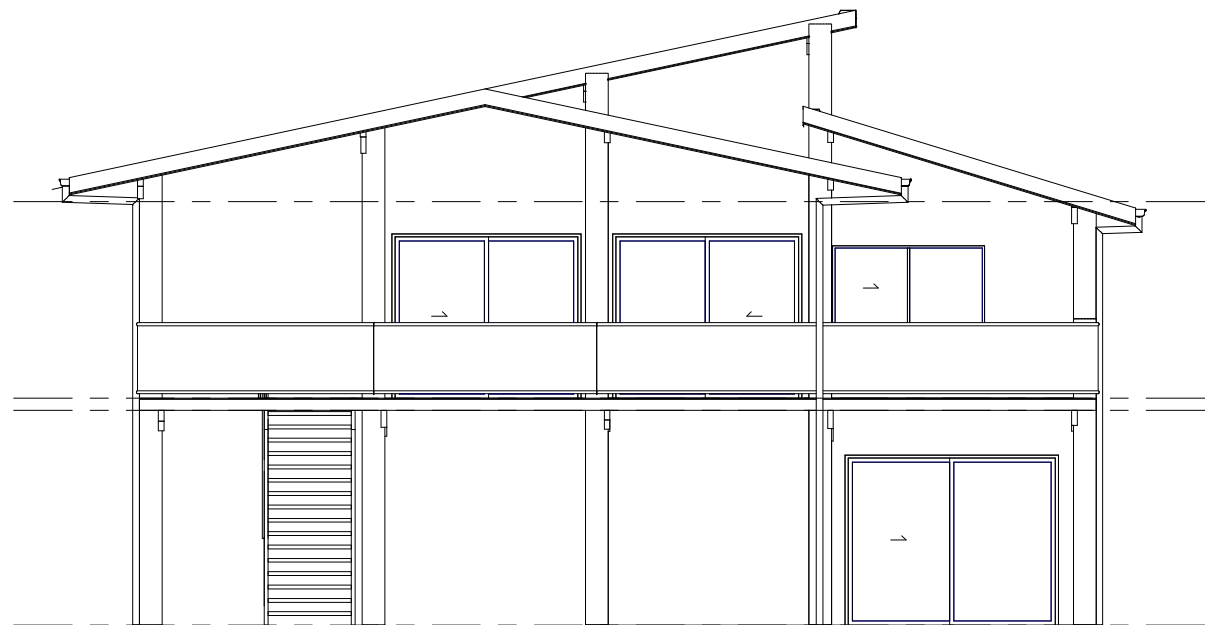
No.	Description	Date
1	Engineer Review	31.08.16

Kanjini Co-Op
Kay Road Caretaker House

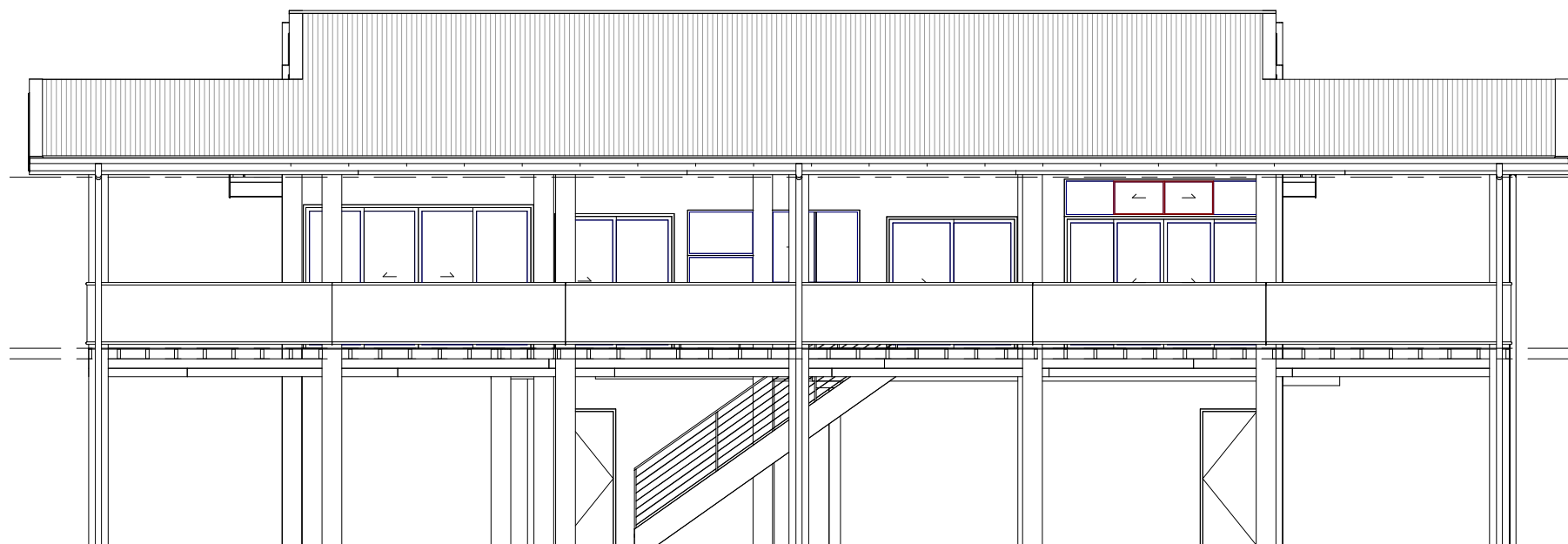
Upper Floor Level			
Project number	KC001	A101	
Date	11.07.15		
Drawn by	C.H.		
Checked by	Checker		
		Scale	1 : 100



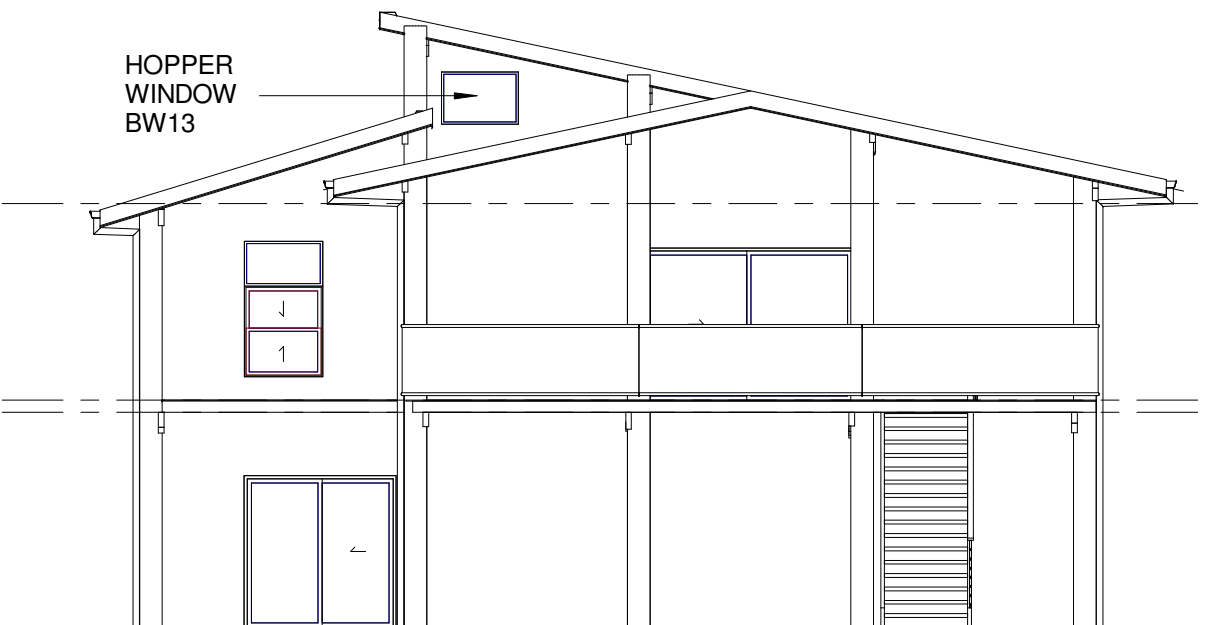
1 North Elevation
1 : 100



2 East Elevation
1 : 100



3 South Elevation
1 : 100



4 West Elevation
1 : 100



No.	Description	Date
1	Engineer Review	31.08.16

Kanjini Co-Op
Kay Road Caretaker House

Elevations

Project number	KC001	A103	
Date	11.07.15		
Drawn by	C.H.		
Checked by	Checker	Scale	1 : 100

Kanjini Co-Op Ltd

**Proposed Development at
483 Emerald Falls Road & 545 Kay Road, Mareeba
Traffic Impact Assessment**

250-001-001R

Revision C

November 2023

Prepared by:



GLF Developments Pty Ltd
t/a CivilWalker Consulting Engineers

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Document Control

Revision	Date	Reason	Author
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C	03.11.23	Minor Adjustment	DJW

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1. Introduction

CivilWalker Consulting Engineers have been commissioned by Kanjini Co-Op Ltd (Kanjini) to prepare a traffic impact assessment report for their proposed development located at 483 Emerald Falls Road and 545 Kay Road, Mareeba. Kanjini applied for a material change of use for outdoor sport and recreation facilities, function facilities, and a tourist park to Mareeba Shire Council (Council) on 16 February 2023. In response to the application, Council made the following request:

"Traffic Impact Assessment

Please provide a Traffic Impact Assessment (TIA), prepared by an RPEQ, addressing anticipated traffic volumes and recommended upgrades (if any) on both Emerald Falls Road and Kay Road. The TIA should address each individual Stage of the development."

This report responds to that request.

The site is located at 483 Emerald Falls Road and 545 Kay Road, Mareeba (more formally described as Lot 66 on RP896904, Lot 67 on SP328197 and Lot 68 on SP282408). It is identified in **Figure 1.1** below.

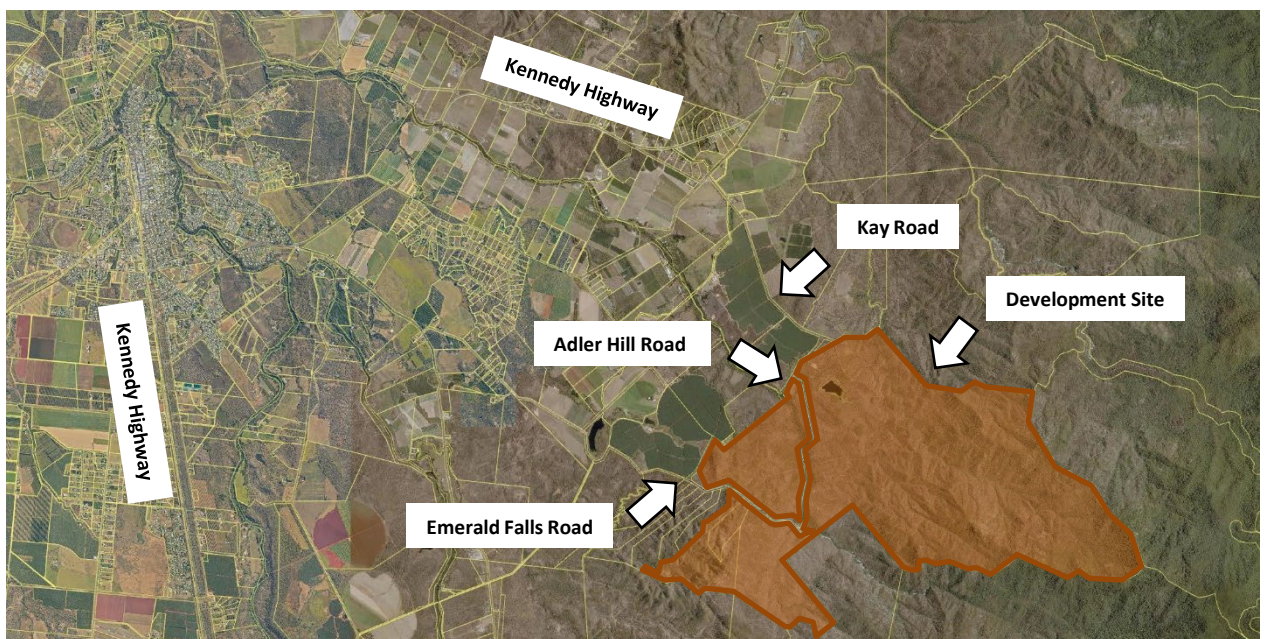


Figure 1.1 – Site Location (courtesy of Qld Globe)

2. Existing Conditions

2.1 The Development Site

The proposed development site consists of three irregular shaped allotments with a combined area of 2,820 hectares. It is bound by Emerald Falls Road, Kay Road, Adler Hills Road and National Park. The site is encumbered by an easement, which contains a 132kV Powerlink high voltage transmission line.

Also known as “Emerald Creek Escape” the site currently contains 13 camping sites, a day use area around an existing 25 acre lake, day use areas along 3km of Emerald Creek frontage, hiking tracks, mountain bike tracks and several other smaller dams. The site is open to the public for camping activities.

There are three differing type of camp areas on the site. Five “Emerald Creek Sites” (Camps 2, 5, 8, 9 and 10) which are on the Emerald Creek frontage, five “Lake / Billabong Camp Sites” (Camps 1, 3, 4, 11 and 14) which surround the 25 acre lake and three “Great Views Camp Sites” (Camps 6, 7 and 12) which are in various other locations throughout the site. All camp sites have toilet facilities available. **Figure 2.1** below shows the site layout.

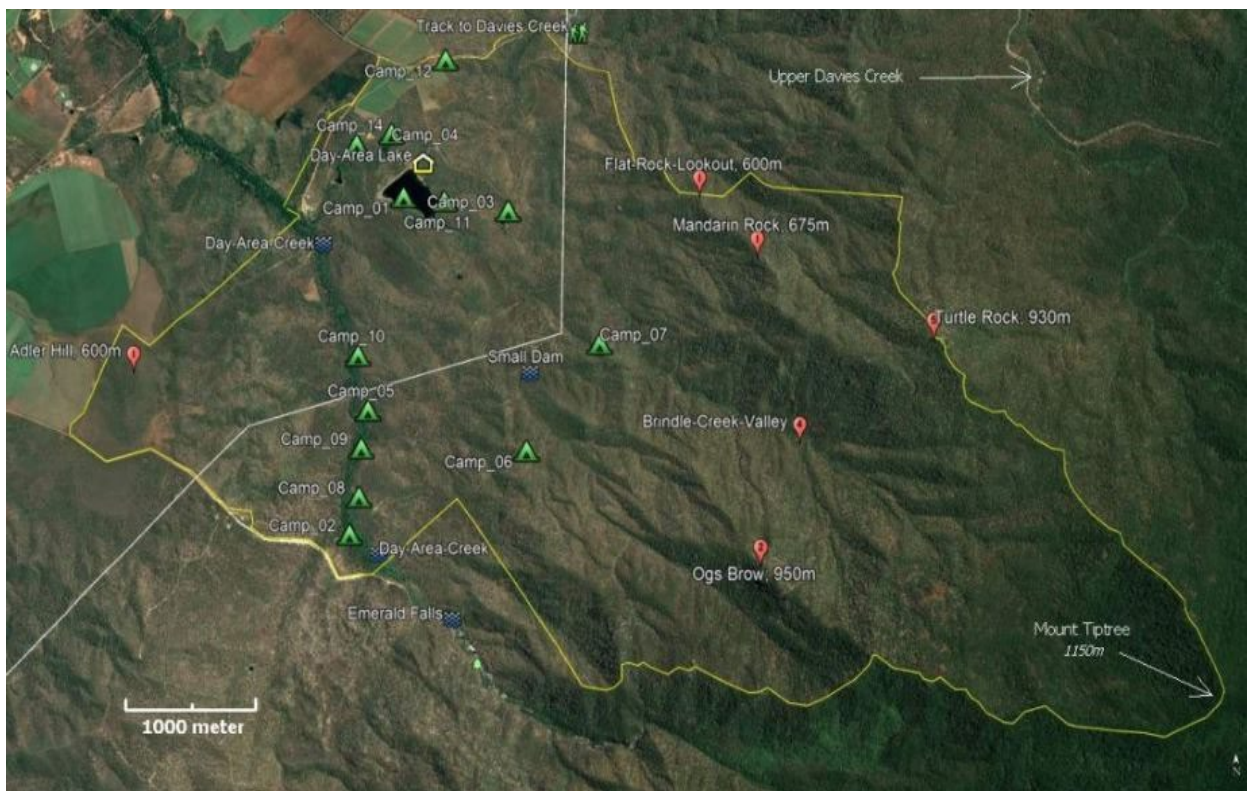


Figure 2.1 – Site Layout (courtesy of Emerald Escapes Camping Website)

The site also contains an existing farmhouse, a cottage, several sheds, and other amenities. Access is available via both Emerald Falls Road (only to Camp Site 2 and the manager’s caravan) and Kay Road (balance of site areas).

2.2 Emerald Falls Road

A site inspection of Emerald Falls Road was undertaken by CivilWalker Consulting Engineers on 4 September 2023. Emerald Falls Road runs from its intersection with Henry Hannam Drive and Cobra Road to the Emerald Creek Falls days use area, a distance of approximately 4.8km. **Figure 2.2** below shows the location of Emerald Falls Road.

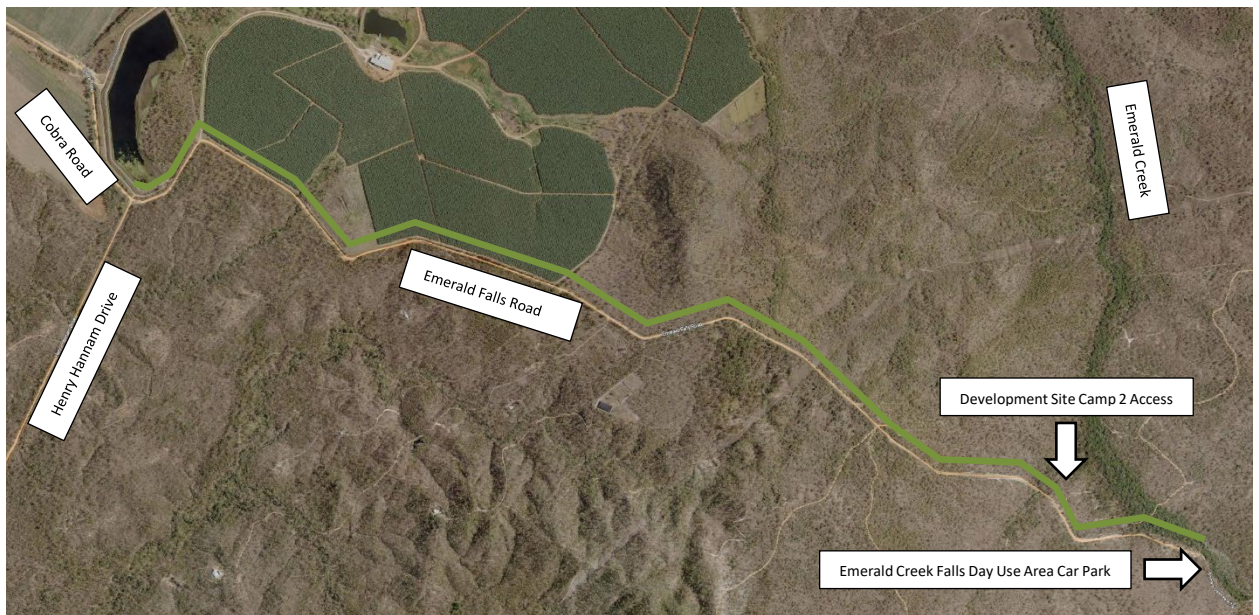


Figure 2.2 – Emerald Falls Road (courtesy of Queensland Globe)

There is no posted speed limit on Emerald Falls Road, and it has therefore been assumed that the standard state guidelines for assessing and posting speed limits on Council owned roads applies. There are two default speed limits, those being 50km/hr within built up residential areas and 100km/hr for roads in rural areas. It is noted that default speed limits are not typically signposted and still require drivers to adjust speed depending on road conditions. Emerald Falls Road has been assumed to have a speed limit of 100km/h.

Emerald Falls Road reserve varies in width along its length as follows:

- 40m wide from Henry Hannam Drive intersection for approximately 1.18km (near western boundary of 160 Emerald Falls Road (Lot 2 on SP235320).
- 30m wide from the above location to the unformed Malone Road intersection, opposite Lot 1 SP177749 (between 160 and 228 Emerald Falls Road), a distance of approximately 0.84km.
- 40m wide from the above location for approximately 1.53km (near western boundary of 160 Emerald Falls Road (Lot 2 on SP235320).
- It then widens considerably (up to 125m wide) for a distance of approximately 0.2km at the Wrights Lookout Access.
- 30m wide from the Wrights Lookout Access to the Emerald Creek Falls car park area, a distance of approximately 1.05km.

The road carriageway appears to locally wander outside the existing road reserve near the intersection with Henry Hannam Drive into Lot 589 NR4243, in which an existing dam is located. The road carriageway is un-sealed and has widths varying from approximately 6m wide up to 7m wide along its length.

An assessment of existing road geometry was also undertaken. This was prepared by mapping the existing horizontal alignment (courtesy Qld Globe) and obtaining Lidar data to assess vertical geometry along the mapped horizontal alignment. Reference is made to the drawings within **Appendix A**.

Drawing 250-001-SK01 details the adopted horizontal geometry and drawings 250-001-SK04 and SK05 detailed vertical geometry ascertained from the Lidar data. Existing horizontal curves vary in radius from 25m to 500m with a considerable amount of the curves in the 35m to 50m radius range. Existing vertical grades typically vary from 0.5% to up to a maximum of 11.7% with approximately 313m of the 4.8km long road (6.5%) estimated to have a vertical grade less than the desirable minimum of 0.5% (Austroads Guide to Rural Road Design).

The existing horizontal geometry does not meet current design standards (Austroads Guide to Rural Road Design), for the speed limit of 100km/h however, this is common for low traffic use / low speed environment rural roads. The Austroads Guide notes the following regarding rural roads:

“From observations of driver behaviour in hilly terrain, it was noted that drivers initially reduce speed over the first few curves until they reach a speed that is the highest at which the driver feels comfortable. The driver then tends to maintain this speed unless confronted with a curve with a radius significantly below the general range of radii on the section of road. Conversely, the driver will not increase speed unless a straight (or near straight) is available and is >200m. On shorter straights drivers tend to maintain the speed attained on the preceding section of curves.”

Austroads identifies three type of rural road speeds being high speed roads, intermediate speed roads and low speed roads. Based on the road geometry assessment undertaken, Emerald Falls Road considered a low speed road:

“...roads having many curves with radii less than 150m. Operating speeds on the curves may vary from 50km/h to 70km/h...”

“... the alignments provided in these circumstances could be expected to produce a high degree of driver alertness, so those lower standards are both expected and acceptable.”

Whilst the default speed limit may be 100km/h, Austroads notes that road design elements are not required to be design for this speed and that rural roads do tend to have a lower operating speed.

It is noted that this report does not represent a road safety audit of Emerald Falls Road, however the following issues were noted during the inspection (direction of travel toward Emerald Creek):

- Tree located close to carriageway near Henry Hannam Drive intersection (left-hand side).
- Tight radius at approximate chainage 400 (Rock Ridge Farming access). Estimated to be 25m.
Tree located close to carriageway on inside curve.
- Road narrows around bend at culvert crossing locations (chainage 800) to approximately 6.0m.
- Crest in road (approximate chainage 1000).
- Tight radius at approximate chainage 1160 (estimated to be 30m).
- Road narrows prior to bend at approximate chainage 1450.
- Crest in road (approximate chainage 1600).
- Tight radius at approximate chainage 2450 (estimated to be 35m).
- Tight radius at approximate chainage 2800 (estimated to be 35m).
- Crest in road (approximate chainage 3000).
- Crest in road (approximate chainage 3150).
- Crest in road (approximate chainage 3350).

- Wrights Lookout access pushes out into the road carriageway with a poor vertical geometry interface. This provides an arrangement that is likely to surprise unsuspecting motorists and potentially cause them to veer to the other side of the road. Horizontal geometry also poor through this section of road (approximate chainage 3350 to 3800).
- Crest in road (approximate chainage 3800).
- Causeway road crossing of Emerald Creek tributary.
- Tight radius at approximate chainage 4550 (estimated to be 25m).

It is recommended that Council undertake a site inspection of Emerald Falls road to determine if provision of additional road signage would be appropriate on the road to alert drivers of upcoming tight bends, road crests, the causeway and other elements that may be unexpected. Particular attention should be given to the Wrights Lookout access area.

Photographs taken during the site inspection are provided below.



Photograph 2.1 – Emerald Falls Road Chainage 50



Photograph 2.2 – Emerald Falls Road Chainage 100



Photograph 2.3 – Emerald Falls Road Chainage 400



Photograph 2.4 – Emerald Falls Road Chainage 800



Photograph 2.5 – Emerald Falls Road Chainage 1000



Photograph 2.6 – Emerald Falls Road Chainage 1600



Photograph 2.7 – Emerald Falls Road Chainage 2150



Photograph 2.8 – Emerald Falls Road Chainage 3000



Photograph 2.9 – Emerald Falls Road Chainage 3400



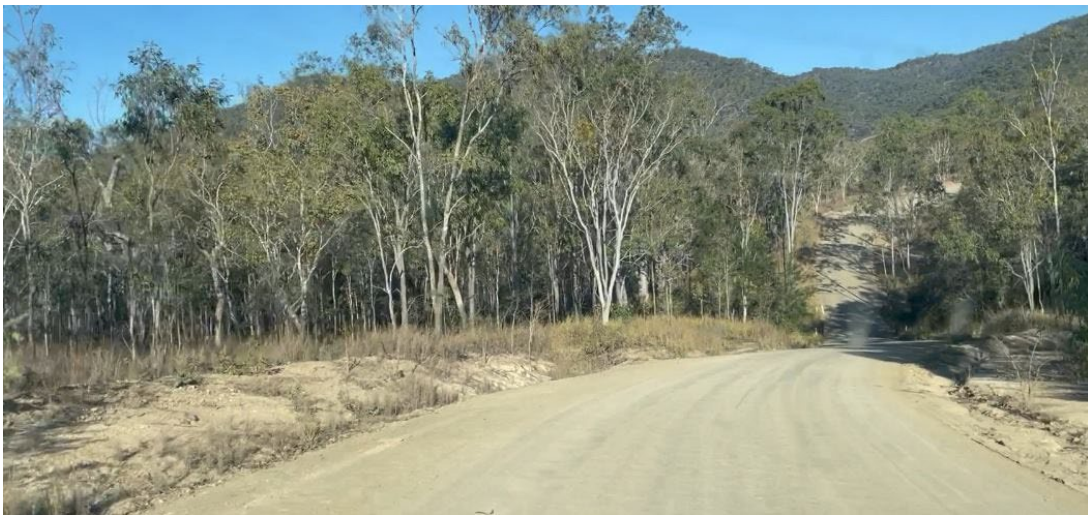
Photograph 2.10 – Emerald Falls Road Chainage 3600



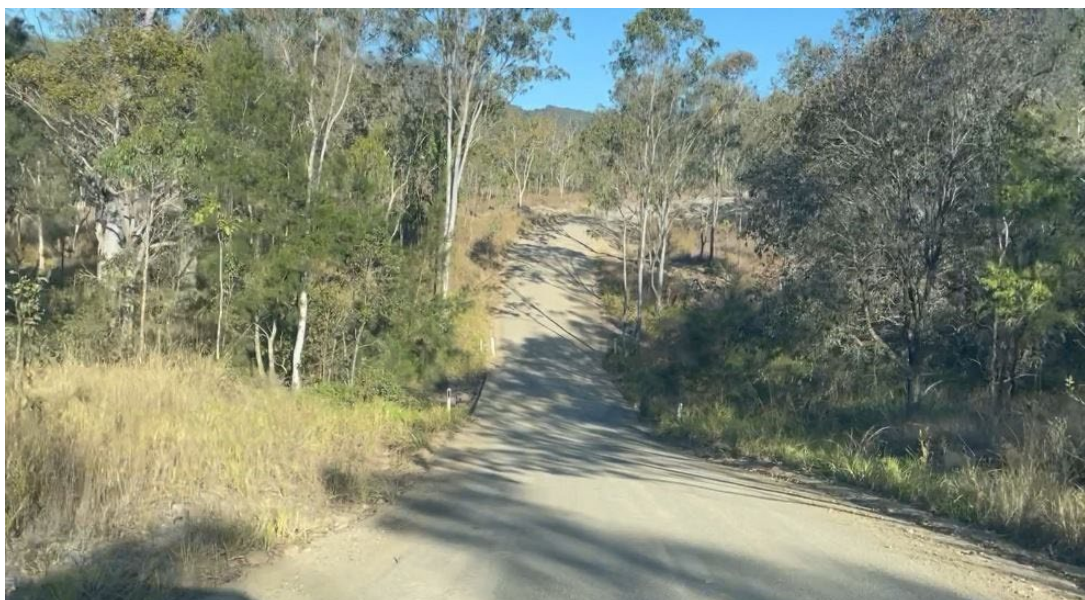
Photograph 2.11 – Emerald Falls Road Chainage 3850



Photograph 2.12 – Emerald Falls Road Chainage 3900



Photograph 2.13 – Emerald Falls Road Chainage 4200



Photograph 2.14 – Emerald Falls Road Chainage 4300



Photograph 2.15 – Emerald Falls Road Chainage 4450

2.3 Kay Road

A site inspection of Kay Road was also undertaken by CivilWalker Consulting Engineers on 4 September 2023. Kay Road runs from its intersection with the Kennedy Highway to the subject development site where it terminates, a distance of approximately 5.5km. **Figure 2.3** shows the location of Kay Road.

There is also no posted speed limit on Kay Road, and it has therefore been assumed that the standard state guidelines for assessing and posting speed limits on Council owned roads also apply to Kay Road, being 100km/h.

The existing Kay Road reserve varies in width along its length as follows:

- 40m wide from the Kennedy Highway intersection for approximately 1.30km to the Sabin Road East intersection.
- 40m wide from Sabin Road East past Lot 1 on SP252425, a distance of approximately 50m.
- 60m wide from above location for approximately 0.12km to the Rollinson Drive intersection.
- 40m wide from the Rollinson Drive intersection to the end of Kay Road, a distance of approximately 4.04km.

The road carriageway is sealed for a significant portion of its length as follows:

- Sealed full width from the Kennedy Highway intersection to approximate chainage 1550 (near Rollinson Drive intersection).
- Sealed single lane in road centre from approximate chainage 1550 to approximate chainage 3200 (Howe Farms access).
- Un-sealed from approximate chainage 3200 to the roads end at chainage 5535.

The road carriageway width varies as follows:

- Kennedy Highway to Sabin Road East - carriageway approximately 8m – 9m wide with 6m wide seal.
- Sabin Road East to near Rollinson Drive – carriageway approximately 8m – 9m wide with 6.5m wide seal.
- Rollinson Drive – Howe Farms Access - carriageway approximately 7m – 8m wide with 3.5m wide seal.

- Howe Farms Access – carriageway approximately 7m – 8m wide (portion of gravel formation showing grass, 4m not showing grass due to traffic).



Figure 2.3 – Kay Road (courtesy of Queensland Globe)

Similar to Emerald Falls Road, an assessment of existing road geometry was undertaken for Kay Road. Reference is made to the drawings within **Appendix A**. Drawing 250-001-SK01 details the adopted horizontal geometry and drawings 250-001-SK02 and SK03 details vertical geometry ascertained from the Lidar data. Existing horizontal curves vary in radius from approximately 30m to 100m with five (5) of the seven (7) curves within the 30m to 60m radius range. The final two (2) curves are approximately 100m in radius. Existing vertical grades typically vary from 0.5% to up to a maximum of 10.6% with approximately 727m of the 5.5km long road (13.2%) estimated to have a vertical grade less than the desirable minimum of 0.5%.

The existing horizontal geometry does not meet current design standards (Austroads Guide to Rural Road Design), for the speed limit of 100km/h however, this is common for low traffic use / low speed environment rural roads as noted within **Section 2.2** of this report. Whilst the default speed limit may be 100km/h, Austroads notes that road design elements are not required to be designed for this speed on low volume rural roads, with “alignments provided in these circumstances expected to produce a high degree of driver alertness, so lower standards are both expected and acceptable”. As noted for Emerald Falls Road, operating speeds on rural roads tend to be lower to suit conditions.

This report does not represent a road safety audit of Emerald Falls Road; however the following issues were noted during the inspection (direction of travel away from Kennedy Highway):

- Tight radius after Kennedy Highway intersection (estimated to be 40m).
- Series of road crests from approximate chainage 250 to approximate chainage 600. These are signed.
- Crest in road (approximate chainage 900).
- Tight radius at approximate chainage 1350 (estimated to be 40m).
- Road narrows after bend.
- Tight radius at approximate chainage 1550 (estimated to be 30m).
- Road narrows after bend with sealed width reducing to single lane.
- Seal end at approximate chainage 2600.
- Tree close to carriageway at approximate chainage 3950.
- Tree close to carriageway at approximate chainage 4550.
- Road locally narrows to single lane at culvert approximate chainage 4600, then immediately widens again.
- Series of trees close to carriageway at approximate chainage 4750.
- Tree close to carriageway at approximate chainage 5400.

Whilst Kay Road provides improved signage compared to Emerald Falls Road, it is recommended that Council undertake a site inspection to determine if provision of additional road signage would be appropriate on the road to alert drivers of upcoming tight bends, road crests, causeways and other elements that may be unexpected. Consideration should also be given to whether trees close to the carriageway should be removed or if signage warning of the obstacle should be provided.

Photographs taken during the inspection were lost and therefore images from Google Maps have been provided below.



Photograph 2.16 – Kay Road Chainage 100



Photograph 2.17 – Kay Road Chainage 350



Photograph 2.18 – Kay Road Chainage 550



Photograph 2.19 – Kay Road Chainage 1300



Photograph 2.20 – Kay Road Chainage 1550



Photograph 2.21 – Kay Road Chainage 1750



Photograph 2.22 – Kay Road Chainage 2100



Photograph 2.23 – Kay Road Chainage 2400



Photograph 2.24 – Kay Road Chainage 2550



Photograph 2.25 – Kay Road Chainage 3400



Photograph 2.26 – Kay Road Chainage 3600



Photograph 2.27 – Kay Road Chainage 3900



Photograph 2.28 – Kay Road Chainage 4200



Photograph 2.29 – Kay Road Chainage 4850



Photograph 2.30 – Kay Road Chainage 5250



Photograph 2.31 –Kay Road Chainage 5400



Photograph 2.32 –Kay Road Chainage 5500

2.4 Traffic Volumes

Traffic counts for both Emerald Falls Road and Kay Road have been provided by Council (refer **Appendix B**). Traffic count data has been provided both during the week of the July 2023 Roots Festival and in the week following the festival. This section considers the traffic counts after the Roots Festival, i.e. a “typical” day.

Emerald Falls Road

Traffic count data for Emerald Falls Road was obtained in the week of 19 July 2023 to 26 July 2023 near the intersection of Henry Hannam Drive (approximate chainage 80). The following average daily count was established (considered to be AADT):

- Chainage 80 = 184 vehicles per day

Kay Road

Traffic count data for Kay Road was also obtained in the week of 19 July 2023 to 26 July 2023 at two locations. Once approximately 100m from the Kennedy Highway intersection and the other approximately 3.04km from the Kennedy Highway intersection. The following average daily counts were established (considered to be AADT):

- Chainage 100 = 177 vehicles per day
- Chainage 3040 = 53 vehicles per day

2.5 Existing Road Requirements

Section D1 “Road Geometry” within the FNQROC Regional Development Manual (FNQROC) provides details on minimum requirements for the design of road work using principles of street design to provide appropriate safety and reduce vehicular conflicts. In particular, Table D1.4 “Rural Road Elements” provides rural road design parameter for formation, pavement and seal width in areas identified as being suited to rural and rural residential developments. The following elements apply:

Traffic Volume of < 100 vehicles per day

- Pavement Width = 5.5m
- Seal Width = 4.5m

Traffic Volume of 100 - 999 vehicles per day

- Pavement Width = 6.5m
- Seal Width = 6.5m

Emerald Falls Road

Based on traffic counts provided by Council, Emerald Falls Road has an estimated AADT of 184 vehicles per day. This traffic is accessing local properties and the Emerald Creek Falls day area.

To meet the requirements of FNQROC for a rural road with 100-999 vehicles per day, a carriageway width (ie pavement width) of 6.5m is required and that width is also required to be sealed.

Currently, Emerald Falls Road has a carriageway width varying from approximately 6m to 7m along its length. The length of Emerald Falls Road is un-sealed. It therefore does not meet the requirements of FNQROC.

Kay Road

Based on traffic counts provided by Council, Kay Road Emerald Falls Road has an estimated AADT of 177 vehicles per day at its northern end and 53 vehicles per day at its southern end. It has been assumed that the higher traffic volume ceases at the Rollinson Drive intersection at approximate chainage 1550.

Currently, between the Kennedy Highway and Sabin Road East (traffic volume = 177 vehicles per day), the existing carriageway is greater than the required 6.5m width, however the seal width is approximately 6m wide and therefore does not meet the requirements of FNQROC.

Between Rollinson Drive and the Howe Farm access (traffic volume = 53 vehicles per day), the existing carriageway is greater than the required 6.5m width, however the seal width is approximately 3.5m wide and therefore does not meet the requirements of FNQROC.

From the Howe Farm access and the end of Kay Road (traffic volume = 53 vehicles per day), the existing carriageway is greater than the required 6.5m width, however the road is not sealed and therefore does not meet the requirements of FNQROC (based on the assumption of traffic above).

The Local Government Act (2009) does not require local government roads to be upgraded to a higher standard to which they were originally constructed and therefore upgrade of road assets is typically limited to Council's capital works program, special charge schemes or private development requirements. As noted in previous sections of this report, vehicles do tend to vary speeds to suit the road environment on rural roads.

3. Proposed Development

3.1 General

A development permit for a material change of use is sought to facilitate the expansion of the existing caravan Park (bush camping) over the site in the form of a tourist park. In addition to the tourist park, after a successful trial over the site during the Kuranda Roots Festival, the proposal is to include the provision of an outdoor sport and recreation and function facility to allow for events to be held over the site. The proposed development is for a staged approval incorporating both events, additional camping areas, cabins, and recreational vehicle accommodation. Staged development is proposed as follows:

Stage 1

- 4 x camping sites (camps 15 – 18).
- 5 x recreational vehicle.
- Events and / or functions catering for up to a total of 2,000 guests per year at existing lake-side day area and camp area 2, with no single event hosting more than 1,500 guests and no function hosting more than 300 guests.
- Manager's residence.
- Additional amenities (toilets / showers) for the above.

Stage 2

- 2 x camping sites (camps 19 – 20).
- 5 x recreational vehicle.
- 3 x cabin sites.
- Additional 1,500 guests attending events / functions per year at existing lake-side day area and camp area 2, new total 3,500 guests per year, with no single event hosting more than 1,500 guests and no function hosting more than 300 guests.
- Additional amenities (toilets / showers) for the above.

Stage 3

- 5 x cabin sites.
- Additional 2,500 guests attending events / functions per year at existing lake-side day area and camp area 2, new total 6,000 guests per year, with no single event hosting more than 2,000 guests and no function hosting more than 500 guests.
- Additional amenities (toilets / showers) for the above.

Stage 4

- Additional 6,000 guests attending events / functions per year at existing lake-side day area and camp area 2, new total 12,000 guests per year, with no single event hosting more than 2,000 guests and no function hosting more than 500 guests.
- Additional amenities (toilets / showers) for the above.

Only a single camp site will be accessed via Emerald Falls Road for the new development. All other non-event components of the new development will access via Kay Road.

3.2 Traffic Generation

3.2.1 Existing Camp Site Generated Volumes

Kanjini have provided historical data that details the number of existing vehicles that have visited their site between 2018 and 2021. This data is provided in **Appendix C**. The visiting vehicles are associated with existing camping sites, of which there are 13. Kanjini have advised the following:

- When bookings are made for the camp sites details of vehicles are required to be registered.
- 19.8% of bookings made cancel and therefore only 80.2% of registered vehicles arrive.
- Some additional vehicles are booked via email after the initial booking is made, which is estimated to be an additional 10-20% vehicles.
- Security cameras on site identify that 5-10% of campers leave the site during their stay, with that occurring typically once.

Camping activities in the region have increased since the Covid pandemic of 2020. It has been assumed that this increased camping activity will continue and therefore only vehicle data from Kanjini's database for 2020 and 2021 have been utilised.

Kanjini's database for 2020 and 2021 identified that vehicles registered to attend site were 751 and 712, respectively. The higher vehicle value of 2020 was adopted for assessment. Consideration was given to the narrative above from Kanjini regarding vehicle cancellations and additional vehicles being registered after initial bookings, with the following concluded:

- Number of registered vehicles on initial booking = 751.
- 19.8% of bookings made cancel, therefore reduce by 20%.
- 10-20% additional vehicles registered after initial booking, therefore increase by 20%.
- 5-10% of additional trips over and above arrival / departure, therefore increase by 10%.

Based on the above assumptions, the following yearly traffic was calculated:

Number of vehicles = 751×1.2 (20% increase) / 1.2 (20% decrease) $\times 1.1$ (10% increase) = 826 vehicles

To determine the annual average daily traffic (AADT), seasonal factors and weekly camping habits are required to be considered. Kanjini have advised that whilst campers visit all year round and during the full week, the busiest periods are between April and October (ie 7 months out of 12 months) and during a three day period spanning over the weekend. For the purpose of this report, it has been conservatively assumed that the annual traffic visits only between April and October and between Friday and Sunday. The AADT is therefore calculated as follows:

$AADT = 826 \text{ vehicles} * [(12 \text{ months} / 7 \text{ months}) * (7 \text{ days} / 3 \text{ days})] / 365 = 9 \text{ vehicles per day}$

The calculated AADT can therefore resolve to a number of vehicles per day for each camp site. Since 2019 13 campsites have operated. The AADT generated per campsite is therefore calculated as follows:

$AADT \text{ per campsite} = 9 \text{ vehicles per day} / 13 \text{ camp sites} = 0.7 \text{ vehicles per day per camp site}$

3.2.2 New Camp Site Generated Volumes

It is considered reasonable to apply the traffic generation rate for the existing camp sites to the proposed new camp sites. Therefore, a traffic generation rate of 0.7 vehicles per day has been allocated to each of the proposed new sites.

3.2.3 Cabin and Recreational Vehicle Generated Volumes

This type of accommodation will function similarly to camp sites, with the difference being the type of vehicle that visitors will arrive in. It is expected that the traffic volume will not differ from camping sites. Therefore, the traffic generated is as follows:

AADT per Cabin site = 0.7 vehicles per day per camp site

AADT per RV site = 0.7 vehicles per day per camp site

Table 3.1 provides details on traffic generation for new development associated with camping activities. Existing development is not included because this is captured in the Council traffic counts.

Table 3.1 Daily Traffic Generated by Normal Use Development (ie Excluding Large Events)

Stage	Emerald Falls Road			Kay Road		
	No.	Generation Rate	Traffic Volume	No.	Generation Rate	Traffic Volume
Stage 1						
Camp Sites	-	0.70	-	4	0.70	2.8
Recreational Vehicles	-	0.70	-	5	0.70	3.5
Cabins	-	0.70	-	-	0.70	-
Manager Residence	-	1.00	-	1	1.00	1.0
Total Vehicles/Day	0			8		
Stage 2						
Camp Sites	-	0.70	-	2	0.70	1.4
Recreational Vehicles	-	0.70	-	5	0.70	3.5
Cabins	-	0.70	-	3	0.70	2.1
Total Vehicles/Day	0			7		
Stage 3						
Camp Sites	-	0.70	-	-	0.70	-
Recreational Vehicles	-	0.70	-	-	0.70	-
Cabins	-	0.70	-	5	0.70	3.5
Total Vehicles/Day	0			4		
Stage 4						
Camp Sites	-	0.70	-	-	0.70	-
Recreational Vehicles	-	0.70	-	-	0.70	-
Cabins	-	0.70	-	-	0.70	-
Total Vehicles/Day	0			0		
	Total Emerald Falls Road			Total Kay Road		
	0			19		

3.2.4 Special Event Traffic Generation

The proposed development seeks to allow events to be held throughout the site with varying volumes within Stages 1 to 4. Guest volumes will vary from 2,000 per year (after Stage 1) to 10,000 per year (after Stage 4) however, guest volumes for any single event will likely remain at less than 1,500. In considering arrival of guests to an event in private vehicles it is noted that the passenger / vehicle configurations could vary significantly. Depending on the type of function (ie wedding, other social or corporate) some guests may arrive separately, a considerable portion are likely to arrive in pairs (ie husband / wife, partners, friends, work colleagues etc.) and some may car pool providing a higher number of passengers per vehicle. For the purpose of this report, it has been assumed that vehicles arriving at the site will contain the following passenger distribution:

- 50% of guests travelling with 2 guests per vehicle
- 30% of guests travelling with 4 guests per vehicle (ie car-pooling)
- 20% of guests travelling with 6 guests per vehicle (ie mini-bus)

This is considered a reasonable assumption given the rural location of the site and discounts being offered to those who do not arrive in their own vehicle (Kanjini advice dated 30 June 2022) will likely encourage car-pooling and other forms of transport with higher capacity than a standard passenger vehicle (ie a mini-bus).

Considering the above, this equates to 358 vehicles for every 1,000 guests that travel to an event, or 0.358 vehicles per guest (conversely, 2.8 guest per vehicle).

The recent Kuranda Roots festival event also requires consideration. This type of event differs from a typical wedding or corporate event. The most recent occurrence of this event was in July 2023 at which there were 1,200 guests in attendance, arriving in a total of 500 vehicles. The number of vehicles in attendance are known because each vehicle was required to be registered at a location adjacent to the existing helipad on Emerald Falls Road prior to entering the site. After registration, each vehicle was provided with a registration sticker which was placed on the windscreen by registration officers. Registered vehicles then made their way to the event entrance, which they were not permitted to enter without a registration sticker. A total of 500 stickers were allocated during the 2023 festival.

Council provided counters to determine traffic volumes along Emerald Falls Road during the week of the festival and also the following week after. Assessment of the traffic count data determined that over the three (3) days the festival was held (Friday 14th July to Sunday 16th July, 2023), the days preceding the festival (set-up) and the days after the festival (demobilisation and final guests leaving) there was an increase in the number of vehicles along Emerald Falls Road. It has been determined that the increase in vehicles does not align with the number of vehicles that attended the festival. For example, it is noted that on Thursday 13th July vehicles attended the site with people setting up stalls. The number of vehicles that were on Emerald Falls Road that day was 153 (320 – 167) higher than the Thursday after the event. This increase in vehicles is not only due to the festival given that only a handful of vehicles were in attendance on site setting up the stalls. It is considered that additional vehicles were on Emerald Falls Road that week for reasons other than that associated with the festival (eg. increased attendance at Emerald Falls day area).

Given this anomaly, it is considered most appropriate to calculate the traffic generated by the festival based on site records taken for the number of guest and number of vehicles in attendance. Based on the vehicle registration process, an event traffic generation figure of 0.417 vehicles per guest was calculated (being 500 vehicles transporting 1,200 guests, equivalent to 2.4 guests per vehicle). This figure is considered reasonable and has been adopted for assessment.

Kanjini have advised that such events will only occur every 2 – 3 months and therefore they will be isolated events. Vehicles associated with such events will not be typical users of Kay Road (only access for such events) and therefore it is inappropriate to assign traffic generated by these events to the annual average daily traffic for the road.

For example, if an event hosts 1,500 guests, it could generate 1,500 x 0.417 vehicles, this equates to 683 vehicles (2.4 guests per vehicle). If the event was over a period of three days, this would equate to an average of 228 vehicles per day. Resolving this to an annual average daily traffic is of no use because it adds 683 vehicles for 3 days every, say 2 months, equalling an annual average daily traffic volume of 11 vehicles per day over a year (6 events per year, therefore that 683 x 6 events / 365 days). This is not a useful input for road management. Similarly, the 228 vehicles per day is not a useful road management input as an increased daily volume, because it occurs so rarely. Table 3.2 provides details on traffic estimated to be generated by large events.

Table 3.2 Traffic Generated by Large Event Use (access Via Kay Road or Emerald Falls Road)

Stage	Kay Road		
	No. Yearly Guests	Generation Rate	Yearly Traffic Volume
Stage 1	2,000	0.417	834
Stage 2	1,500	0.417	626
Stage 3	2,500	0.417	1,043
Stage 4	6,000	0.417	2,502
Total Additional Yearly Traffic (over both Emerald Falls & Kay Roads)			5,005 vehicles
Total AADT Traffic			14 vehicles / day

It is not appropriate to allocate traffic associated with these types of events to Annual Average Daily Traffic because it they do not represent the normal use of the road environment. As can be seen from the calculations within Table 3.2, events will have more of an impact on the road environment than what an average annual daily traffic volume increase of 14 vehicles per day would.

This is why the Department of Transport and Main Roads published the guideline entitled “Event Traffic Management Design Guidelines” (July 2022). It was produced to provide guidance on traffic control measures and devices used to warn, instruct and guide road users in the negotiation of events on roads in a safe manner. It is applicable to traffic management for all types of events (including concerts, festivals etc...) which cause interference or obstruction to the normal use of a road by any road user. The guide is 58 pages long and therefore has not been appended to this report, only the cover sheet and table of contents have been included (refer **Appendix D**). The document provides guidance on the following:

- Event inputs (eg type of event, location, number of participants, duration, timing, set-up requirements and activities).
- Interface with roads, traffic volume inputs, access, parking requirements, etc..
- Risk management.
- Traffic guidance schemes.
- Traffic controllers, police and event traffic marshals.
- How to implement and remove a management plan.
- Notification and communication.

- Incident Management.
- Post event traffic management plan evaluation.

It is recommended that Council condition any approval associated large scale events as part of the development site (say, an event with 1,000 guests or more) with the requirement to provide an Event Traffic Management Plan to Council.

It is noted that previous large events held at the site (with access via Emerald Falls Road) have provided a traffic management plan to Council. There have been no reported incidents associated with traffic at those events, with the road performing satisfactorily under the management plan.

4. Impact Assessment and Proposed Mitigation

4.1 Normal Operation of Roads

Based on the above calculations, for the normal operation of the proposed development (ie camping sites, recreational vehicle sites and cabin sites) there is no trigger for road upgrades associated with the increase in traffic volume by the proposed development when considering road carriageway or pavement width in accordance with FNQROC requirements.

Traffic on Kay Road will increase by 19 vehicles per day associated with the additional camping sites, recreational vehicle sites and cabin sites. This will increase the existing annual average daily traffic at the northern end of Kay Road from 177 vehicles per day to 196 vehicles per day, which remains within the FNQROC rural road range of “100 – 999 vehicles per day”, thereby not triggering an upgrade. Traffic on the southern end of Kay Road (ie near the site) from 53 vehicles per day to 72 vehicles per day. This remains within the FNQROC rural road range of “< 100 vehicles per day”, thereby also not triggering an upgrade.

Consideration has been given to the existing Emerald Falls Road and Kay Road arrangements and it is recommended that additional signage be provided at tight bends, crests, causeway locations and other similar elements providing improved messaging to drivers. It is also recommended that consideration be given to removing isolated trees within the road reserve that are located close to the existing carriageway to reduce the risk of vehicles conflicting with them.

These works could be undertaken as part of the proposed development however, if this was the case it is proposed that costs associated with the improvements would be offset against development headwork contributions. This is considered a reasonable approach because the improvements would provide a community benefit.

4.2 Special Events

Special events will result in a significant increase in traffic volumes for isolated short periods of time. This will certainly impact on the normal use of Kay Road, causing interference or obstruction to any road user.

It is not proposed to mitigate this issue by providing cost prohibitive road upgrades, allowing for a significant increase in traffic volume over such a short period of time.

Mitigation is proposed in accordance with the Department of Transport and Main Roads’ guideline entitled “Event Traffic Management Design Guidelines” (July 2022). This guideline was produced to provide mitigation measures for these types of events and provide guidance on traffic control measures / devices to warn, instruct and guide road users in the negotiation of events on roads in a safe manner. It is applicable to traffic management for all types of events (including concerts, festivals etc...) which cause interference or obstruction to the normal use of a road by any road user.

It is therefore recommended that Council condition any approval associated large scale events as part of the development site (say, an event with 1,000 guests or more) with the requirement to provide an Event Traffic Management Plan to Council.

4.3 Pavement Impact

Both Emerald Falls Road and Kay Road are considered “flexible” pavements, which are pavements with unbound granular pavement layers with or without thin bituminous surfaces (sprayed seal or up to 50mm thick asphalt). The additional loading on flexible pavement has been undertaken considering empirical methods in accordance with Section 7 of the Austroads Guide to Pavement Technology, Part 2.

For flexible pavements the standard axle repetitions (calculated with a load damage exponent of 4, refer Austroads Table 7.7) are commonly referred to as equivalent standard axles (ESAs). An equivalent standard axle is a single axle with dual tyres applying a load of 8.2 tonne (80kN) to the pavement.

To calculate the additional traffic loading, associated with development, vehicle types were determined and then converted to equivalent standard axles. This was undertaken in accordance with Section 7.6.2 of Austroads.

Axle configurations on typical vehicles and the load applied to them to generate an ESA are as follows:

- Single Axle with Single Tyres 53kN
- Single Axle with Dual Tyres 80kN
- Dual Axle with Dual Tyres 135kN
- Tri Axle with Dual Tyres 181kN

To convert a load applied to an axle arrangement to an ESA for flexible pavements, the following formula is adopted (Austroads Formula 16):

$$\text{No. of ESAs} = (\text{Load} / \text{Standard Load})^4$$

where, load = that load applied to an axle group

standard load = load required to be applied to axle group to achieve an ESA

Normal Traffic Use

As identified within **Section 3** of this report, the proposed number of vehicles on Emerald Falls Road will not change. Emerald Falls Road has therefore not been considered further in this section.

The type of vehicles accessing Kay Road will typically be passenger cars, four wheel drives and recreational vehicles. The vehicles adopted for assessment were as follows:

- Toyota HiLux Utility (typical visits).
- Jayco Conquest Motorhome (recreational vehicle), being an Iveco “Daily”.

It has been conservatively assumed that all vehicles are loaded to their respective maximum capacity.

For Kay Road, the daily increase in vehicles to the site (after Stage 4) are as follows:

- Camp Sites (Toyota HiLux allowed) 5
- Cabin Sites (Toyota HiLux allowed) 7
- Recreational Vehicle Sites (Jayco Conquest allowed) 6
- Manager’s vehicle (Toyota HiLux allowed) 1

Calculation of ESAs associated with the above movements are as follows (axle load distribution data is provided in **Appendix E**):

- Toyota HiLux = $(12.5\text{kN} / 53\text{kN})^4$ front axle + $(15.7\text{kN} / 53\text{kN})^4$ rear axle = 0.011 ESA
- Jayco Conquest = $(20.6\text{kN} / 53\text{kN})^4$ front axle + $(36.3\text{kN} / 53\text{kN})^4$ rear axle = 0.242 ESA

Based on the above vehicle calculations, the following additional daily pavement loading will be observed due to normally site operation:

$$\text{Total Additional ESAs} = 5 \times 0.011 + 7 \times 0.011 + 6 \times 0.242 + 1 \times 0.011 = 1.6 \text{ ESAs}$$

To put this into perspective, a 14 tonne rigid truck with a single rear axle (dual wheels) that is fully loaded results in a loading of 2.6 ESAs and a fully loaded semi-trailer vehicle results in a loading of 5.0 ESAs. The increase in daily traffic after Stage 4 is therefore equivalent to 62% of a single 14 tonne rigid truck load or 32% of a single semi-trailer load.

Large Event Traffic Use

The type of vehicles accessing Kay Road and/or Emerald Falls Road for a large event will typically be passenger cars, four wheel drives, and minibuses. The vehicles adopted for assessment were as follows:

- Toyota HiLux Utility (typical visits)
- Toyota Coaster (minibus during events)

It has been conservatively assumed that all vehicles are loaded to their respective capacity. Calculation of ESAs associated with the above movements are as follows:

- Toyota HiLux = $(12.5\text{kN} / 53\text{kN})^4$ front axle + $(15.7\text{kN} / 53\text{kN})^4$ rear axle = 0.011 ESA
- Toyota Coaster = $(22.5\text{kN} / 53\text{kN})^4$ front axle + $(31.4\text{kN} / 53\text{kN})^4$ rear axle = 0.155 ESA

Assuming 12,000 guests at events per year (and adopting the vehicle distribution noted in **Section 3.2.4**), the traffic loading is calculated as follows:

- | | |
|---|----------------|
| ▪ 50% of guests travelling with 2 guests per vehicle | 3,000 vehicles |
| ▪ 30% of guests travelling with 4 guests per vehicle (ie car-pooling) | 900 vehicles |
| ▪ 20% of guests travelling with 6 guests per vehicle (ie mini-bus) | 400 vehicles |

Based on the above vehicle calculations, the following additional daily pavement loading will be observed due to events hosting 12,000 guests in total per year:

$$\text{Total Additional ESAs} = 3,000 \times 0.011 + 900 \times 0.011 + 400 \times 0.155 = 105 \text{ ESAs}$$

To put this into perspective, this is equivalent to 0.29 ESAs per day (annually), which is 11.1% of the pavement loading from a single full 14 tonne truck per day or 5.8% of the pavement loading from a single semi-trailer.

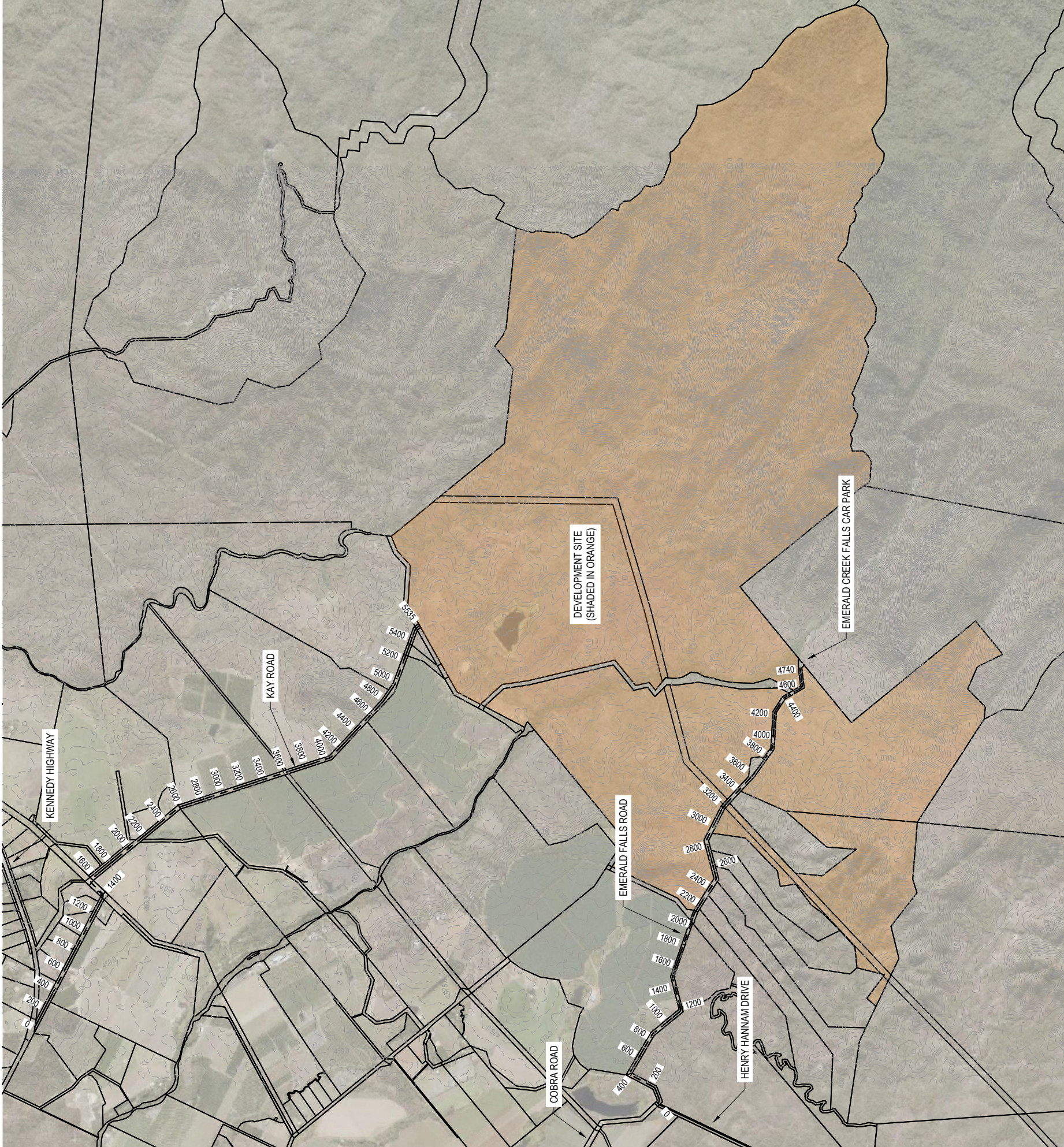
Pavement loading associated with the development is therefore considered not to have a significant impact on the pavement capacity.

4.4 Kanjini Co-Op

In their discussions with CivilWalker Consulting Engineers throughout the development of this report, Kanjini Co-Op have noted that they would be willing to discuss provision of signage upgrades along both Emerald Falls Road and Kay Road with Council. They are also interested in discussing lengthening of the existing road culvert at approximate chainage 4600 on Kay Road, where the carriageway currently narrows to a single lane. Considered a benefit to the community, Kanjini are prepared to discuss delivering such upgrades with Council on the condition that the cost of any upgrades be offset by an equal discount on headwork contribution charges associated with the development.

Appendix A

CivilWalker Consulting Engineers' Drawings



KAY ROAD - HORIZONTAL ALIGNMENT

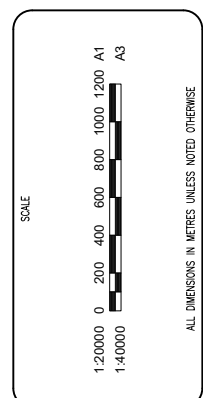
TYPE	CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
IP	0.000	341162.378	8121093.167	117°37'59.81"		
TC	1332.162	342342.586	8120475.296	117°37'59.81"	51.697	-40
IP	1358.010	342369.314	8120461.303			
CT	1383.859	342390.113	8120483.157	43°34'56.25"		
TC	1508.180	342475.820	8120573.214	43°34'56.25"	50.839	30
IP	1533.599	342499.235	8120597.818			
CT	1559.019	342520.759	8120571.542	140°40'38.36"		
TC	2581.756	343168.855	8119780.363	140°40'38.36"	22.231	60
IP	2592.872	343175.980	8119771.665			
CT	2603.987	343179.472	8119760.976	161°54'22.08"		
TC	4034.854	343623.863	8118400.867	161°54'22.08"	30.105	-60
IP	4049.907	343628.639	8118386.251			
CT	4064.959	343639.856	8118375.733	133°09'27.41"		
TC	4740.397	344132.570	8117908.818	133°09'27.41"	14.335	-100
IP	4747.564	344137.808	8117908.818			
CT	4754.732	344143.693	8117904.705	124°56'38.82"		
TC	4930.014	344287.374	8117804.308	124°56'38.82"	25.798	-100
IP	4942.913	344298.007	8117796.878			
CT	4955.812	344310.183	8117792.407	110°09'47.02"		
TC	5469.965	344792.826	8117615.182	110°09'47.02"	32.246	60
IP	5486.088	344808.336	8117609.487			
CT	5502.211	344818.744	8117596.654	140°57'21.42"		
IP	5535.326	344839.603	8117570.935	140°57'21.42"		

EMERALD FALLS ROAD HORIZONTAL ALIGNMENT

TYPE	CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
IP	0.000	340462.398	8115389.888	136°45'23.16"		
TC	4.954	340465.793	8115386.279	136°45'23.16"	41.643	-35
IP	25.776	340482.018	8115369.027			
CT	46.597	340504.067	8115377.674	68°35'08.83"		
TC	141.859	340592.752	8115412.454	68°35'08.83"	24.843	-35
IP	154.280	340604.827	8115417.190			
CT	166.701	340610.900	8115428.651	27°55'04.88"		
TC	394.124	340717.381	8115629.605	27°55'04.88"	40.295	25
IP	414.271	340729.576	8115652.621			
CT	434.419	340752.072	8115639.492	120°16'00.36"		
TC	818.314	341083.638	8115445.999	120°16'00.36"	26.653	75
IP	831.640	341095.270	8115439.211			
CT	844.966	341103.814	8115428.799	140°37'40.41"		
TC	1153.190	341299.337	8115190.529	140°37'40.41"	34.168	-30
IP	1170.274	341311.521	8115175.682			
CT	1187.358	341330.105	8115180.532	75°22'16.31"		
TC	1474.335	341607.779	8115253.010	75°22'16.31"	29.605	50
IP	1489.138	341622.535	8115256.862			
CT	1503.941	341636.929	8115251.822	109°17'47.09"		
TC	2097.356	342197.008	8115055.725	109°17'47.09"	17.492	75
IP	2106.102	342205.300	8115052.821			
CT	2114.848	342212.697	8115048.080	122°39'33.66"		
TC	2461.569	342504.599	8114860.975	122°39'33.66"	29.016	-35
IP	2476.077	342517.565	8114942.602			
CT	2490.585	342532.451	8114856.608	75°09'32.71"		
TC	2826.318	342856.984	8114945.998	75°09'32.71"	25.351	35
IP	2838.994	342869.802	8114945.998			
CT	2851.669	342881.653	8114940.048	116°39'34.42"		
TC	3163.760	343160.565	8114800.017	116°39'34.42"	28.359	100
IP	3177.959	343173.323	8114793.612			
CT	3192.119	343183.779	8114783.893	132°54'29.20"		
TC	3548.584	343444.870	8114541.202	132°54'29.20"	62.048	-500
IP	3579.608	343467.623	8114520.053			
CT	3610.632	343492.818	8114501.883	125°47'52.52"		
TC	3875.288	343707.476	8114347.079	125°47'52.52"	28.206	-50
IP	3889.391	343719.229	8114338.603			
CT	3903.494	343733.691	8114337.725	93°28'33.35"		
TC	4205.179	344034.821	8114319.434	93°28'33.35"	25.642	50
IP	4218.000	344047.907	8114318.639			
CT	4230.821	344058.919	8114311.526	122°51'34.01"		
TC	4356.977	344164.890	8114243.076	122°51'34.01"	23.522	50
IP	4368.738	344174.956	8114236.575			
CT	4380.499	344180.981	8114226.217	149°48'48.49"		
TC	4550.944	344266.684	8114078.885	149°48'48.49"	29.2	-25
IP	4565.544	344274.992	8114064.603			
CT	4580.144	344291.387	8114066.648	82°53'34.39"		
IP	4739.564	344449.582	8114086.372	82°53'34.39"		

NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	27.10.23	INITIAL ISSUE		

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KANJINI CO-OP LTD



DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			

483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA
ROAD HORIZONTAL GEOMETRY
DRAWING NO. 250-001-SK01
REVISION 1

LIDAR SURFACE

Horizontal Curve Data

Vertical Geometry Grade (%)	3.418%	87.49m	440.889	440.889	0
Vertical Grade Length	0.564%	99.639m	443.917	444.271	175
DATUM RL398.000	2.868%	200.329m	441.014	441.494	300
NATURAL SURFACE	5.915%	171.75m	442.742	444.597	500
CHAINAGE	1.174%	57.85m	449.14	449.207	600
	-4.419%	132.509m	447.481	447.302	750
	4.482%	206.862m	449.959	449.374	800
	3.601%	86.776m	456.114	454.349	1025
	2.004%	166.94m	456.753	454.424	1025
	5.765%	66.776m	458.581	454.972	1050
			458.581	455.488	1075
			458.581	456.469	1100
			458.581	457.701	1125
			458.581	457.539	1150
			458.581	457.568	1175
			458.581	457.694	1188.771
			458.581	458.581	1200

Horizontal Curve Data

Vertical Geometry Grade (%)	5.765%	66.776m	460.377	461.318	1250
Vertical Grade Length	4.282%	66.776m	460.377	460.826	1275
DATUM RL415.000	-0.421%	2.4437m	458.524	458.648	1425
NATURAL SURFACE	2.982%	86.895m	455.635	455.191	1600
CHAINAGE	6.256%	84.86m	459.459	461.451	1800
	0.463%	73.117m	462.368	462.527	1875
	0.047%	39.723m	458.167	458.191	1975
	-5.496%	79.447m	459.464	458.16	1950
	3.637%	108.16m	461.073	462.113	2100
	-3.248%	50.733m	461.866	460.793	2150
	3.884%	76.365m	461.439	462.575	2225
	-0.733%	42.805m	463.217	463.49	2250
	-6.745%	59.725m	460.437	463.117	2287.153
	0.632%	49.9m	460.305	460.583	2325
	4.53%	71.271m	460.653	460.644	2375
			460.653	460.644	2400

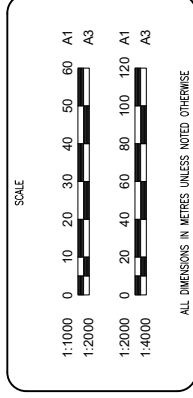
Horizontal Curve Data

Vertical Geometry Grade (%)	4.53%	71.271m	463.008	463.873	2425
Vertical Grade Length	0.401%	81.694m	463.889	463.989	2475
DATUM RL421.000	1.274%	160.674m	464.12	464.173	2675
NATURAL SURFACE	3.908%	64.657m	466.915	466.474	2800
CHAINAGE	-3.967%	64.657m	465.377	464.08	2850
	-0.157%	32.328m	463.948	464.032	2893.414
	4.75%	64.657m	465.491	465.491	2925
	-0.413%	32.328m	467.027	466.976	2990.399
	-2.286%	31.539m	466.756	466.756	3000
	1.295%	32.328m	466.355	466.61	319.712
	3.482%	64.657m	467.804	466.804	3150
	-0.813%	64.657m	468.56	468.756	3200
	1.637%	96.985m	468.901	468.901	3300
	-0.722%	59.27m	469.554	469.929	3346.01
	3.708%	70.093m	470.405	469.502	3425
	-0.167%	120.39m	472.327	472.101	3475
	6.086%	73.89m	472.139	472.087	3475
			472.139	472.101	3475.323
			472.139	472.101	3500
			472.139	471.963	3550
			472.139	471.963	3575
			472.139	471.963	3595.713
			472.139	471.963	3600

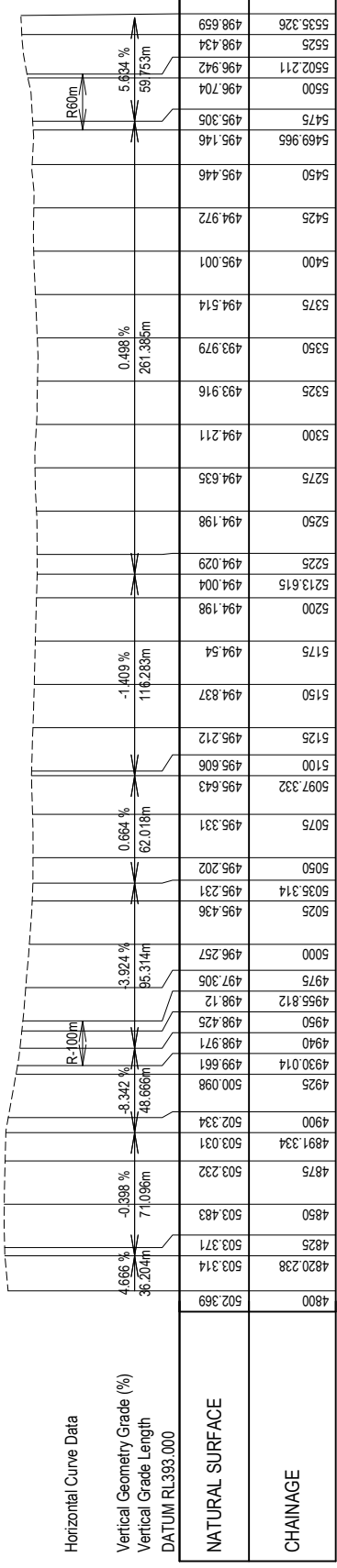
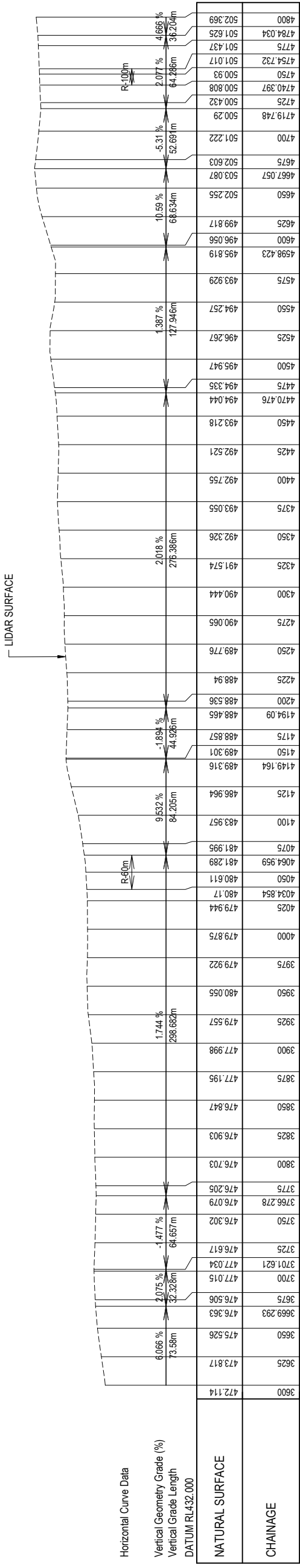
NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	27.10.23	INITIAL ISSUE		

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KANJINI CO-OP LTD

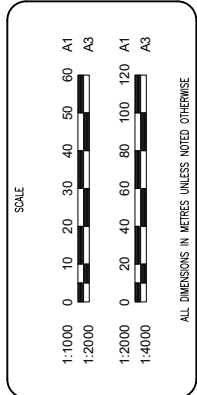


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DESIGNED	CW	CHECKED	DJW
APPROVED			



NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	27.10.23	INITIAL ISSUE		

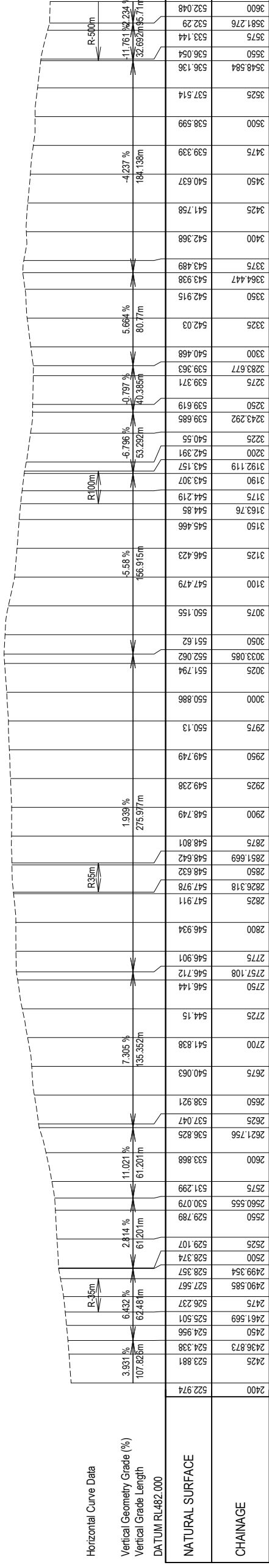
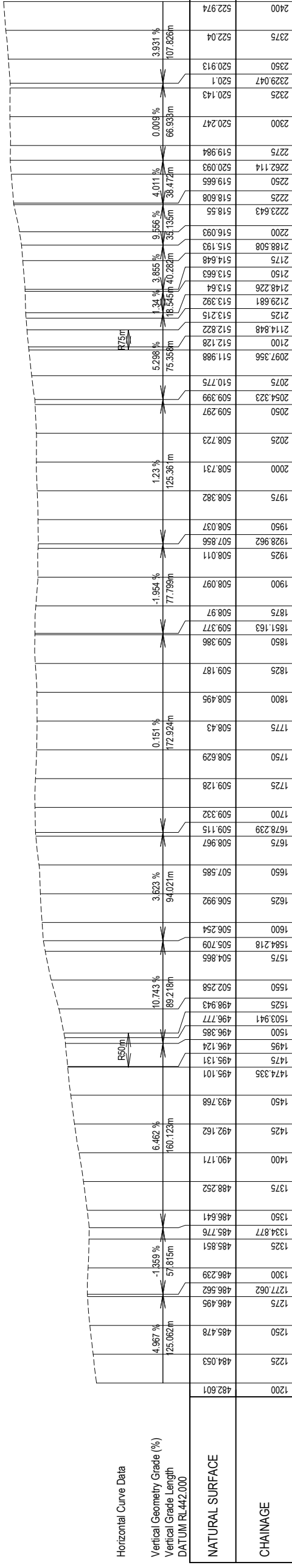
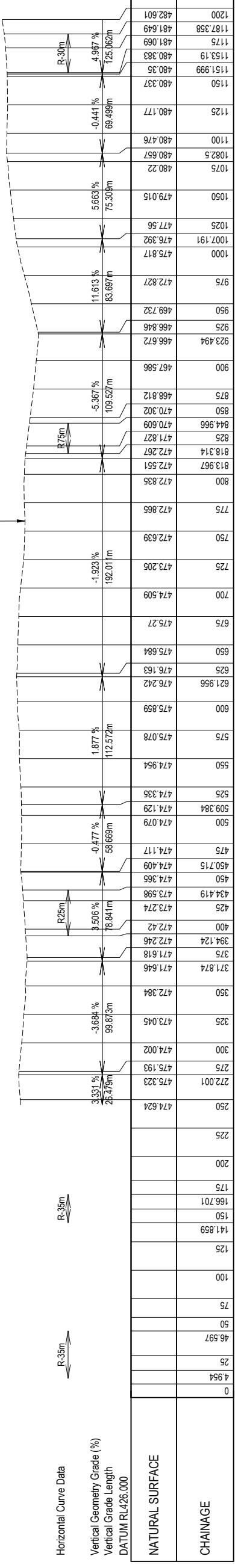
CLIENT
KANJINI CO-OP LTD



DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			

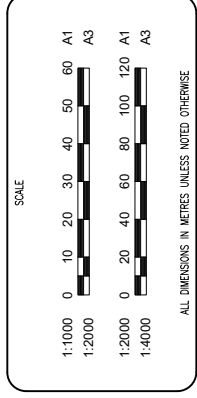
483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA
KAY ROAD VERTICAL GEOMETRY
SHEET 2 OF 2
DRAWING NO. 250-001-SK03
DATE: _____
REVISION: _____
PAGE: 1

LIDAR SURFACE



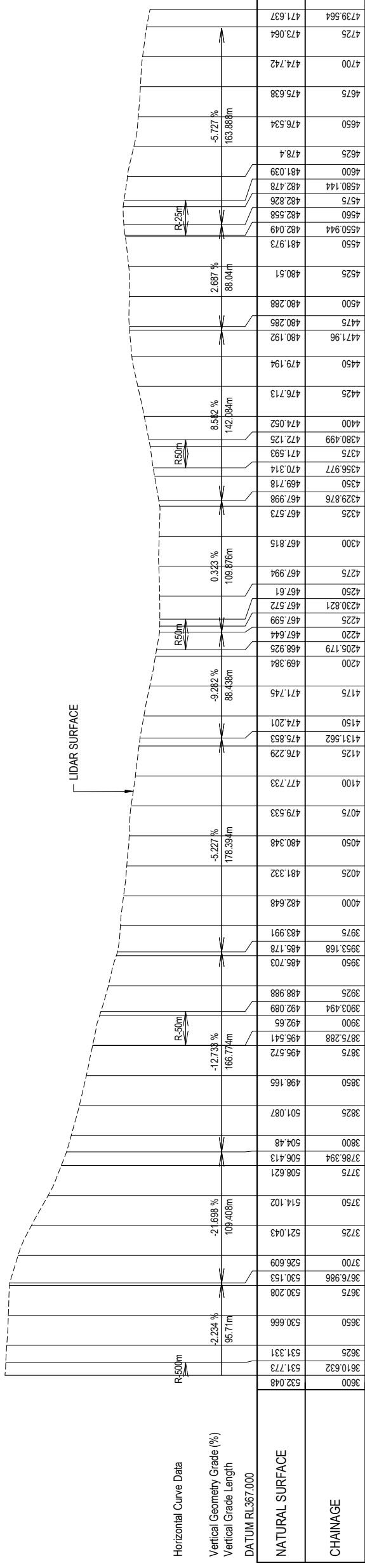
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1	27.10.23	INITIAL ISSUE		

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DRAWN	CW	CHECKED	DJW
DESIGNED	CW	APPROVED	DJW

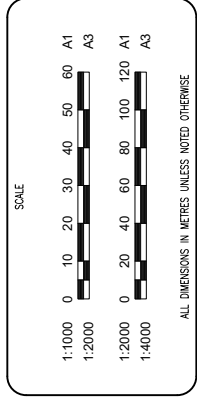
483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA
EMERALD FALLS ROAD VERTICAL GEOMETRY
SHEET 1 OF 2
DRAWING NO. 250-001-SK04
DATE: _____
PAGE: 1



Horizontal Curve Data
 Vertical Curve Grade (%)
 Vertical Curve Length
 DATUM RL367.000

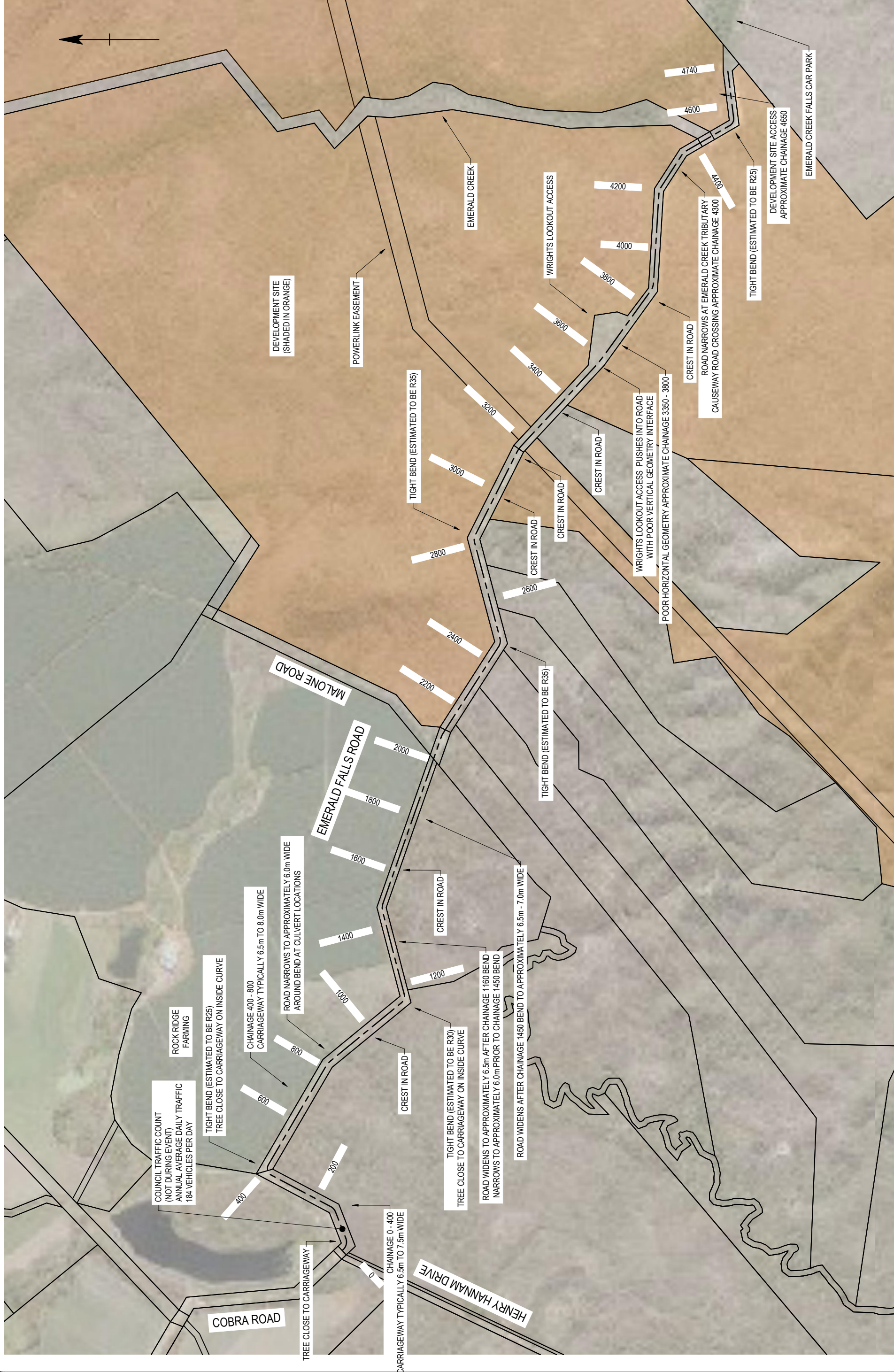
NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	27.10.23	INITIAL ISSUE		

CLIENT
KANJINI CO-OP LTD



DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			

483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA
 EMERALD FALLS ROAD VERTICAL GEOMETRY
 SHEET 2 OF 2
 DRAWING NO. 250-001-SK05
 REVISION 1



COUNCIL TRAFFIC COUNT
(NOT DURING EVENT)
ANNUAL AVERAGE DAILY TRAFFIC
184 VEHICLES PER DAY

ROCK RIDGE
FARMING

TIGHT BEND (ESTIMATED TO BE R25)
TREE CLOSE TO CARRIAGEWAY ON INSIDE CURVE

CHAINAGE 400 - 800
CARRIAGEWAY TYPICALLY 6.5m TO 8.0m WIDE

ROAD NARROWS TO APPROXIMATELY 6.0m WIDE
AROUND BEND AT CULVERT LOCATIONS

CHAINAGE 0 - 400
CARRIAGEWAY TYPICALLY 6.5m TO 7.5m WIDE

TIGHT BEND (ESTIMATED TO BE R30)
TREE CLOSE TO CARRIAGEWAY ON INSIDE CURVE

ROAD WIDENS TO APPROXIMATELY 6.5m AFTER CHAINAGE 1160 BEND
NARROWS TO APPROXIMATELY 6.0m PRIOR TO CHAINAGE 1450 BEND

ROAD WIDENS AFTER CHAINAGE 1450 BEND TO APPROXIMATELY 6.5m - 7.0m WIDE

TIGHT BEND (ESTIMATED TO BE R35)

WRIGHTS LOOKOUT ACCESS PUSHES INTO ROAD
WITH POOR VERTICAL GEOMETRY INTERFACE

POOR HORIZONTAL GEOMETRY APPROXIMATE CHAINAGE 3350 - 3800

ROAD NARROWS AT EMERALD CREEK TRIBUTARY
CAUSEWAY ROAD CROSSING APPROXIMATE CHAINAGE 4300

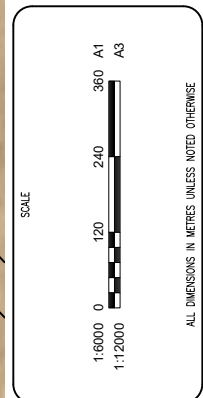
TIGHT BEND (ESTIMATED TO BE R25)

DEVELOPMENT SITE ACCESS
APPROXIMATE CHAINAGE 4660

EMERALD CREEK FALLS CAR PARK

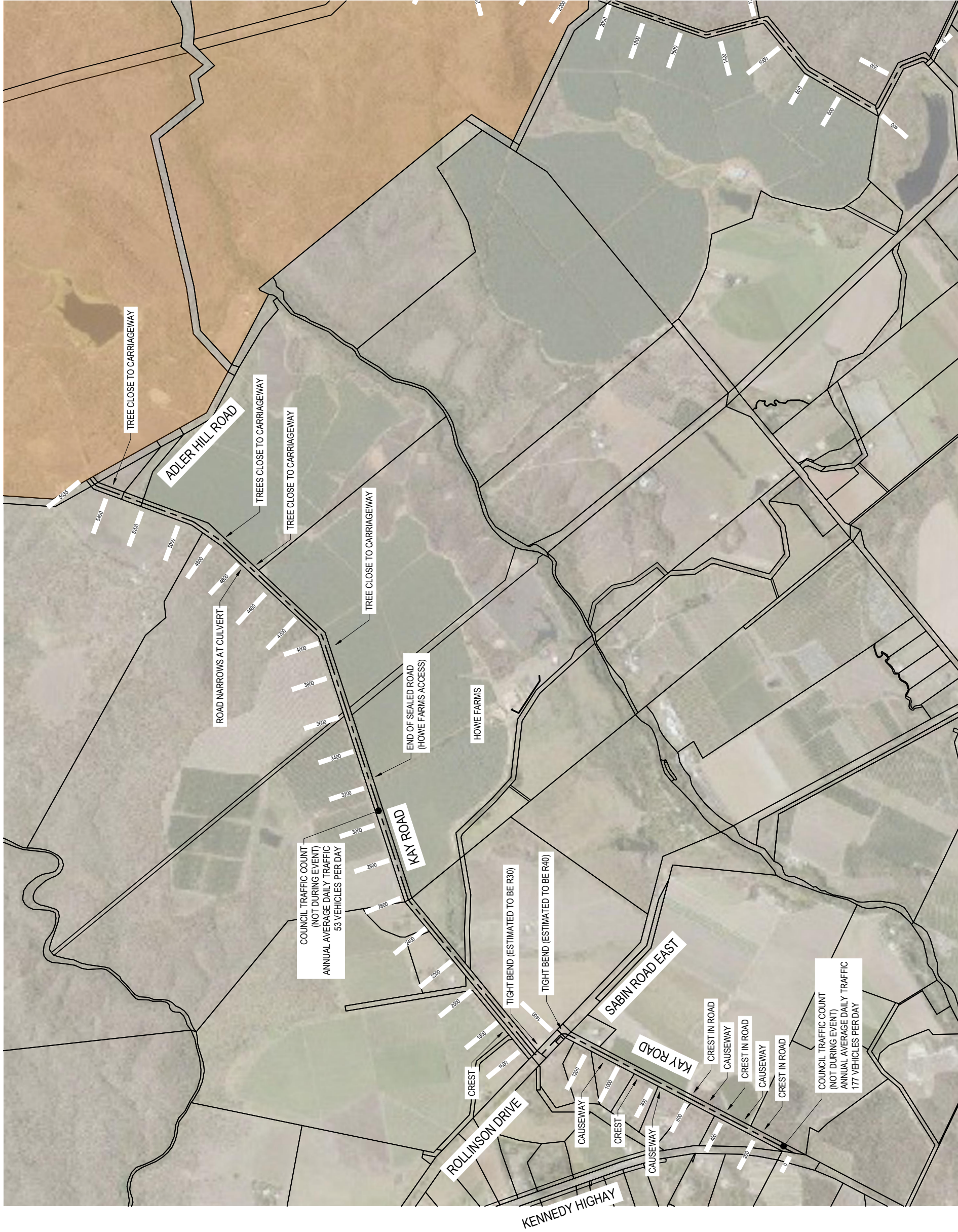
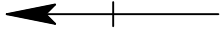
NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	27.10.23	INITIAL ISSUE		

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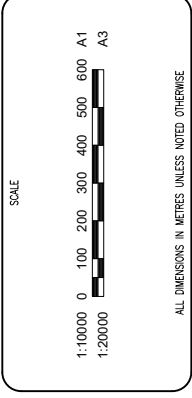
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DESIGNED	CW	CHECKED	DJW
APPROVED			

483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA
EMERALD ROAD COMMENTARY
DRAWING NO. 250-001-SK06
DATE: #PFG: #REV: 1



NO.	DATE	DESCRIPTION	DESIGN	APPROVED
2	01.11.23	CULVERT NOTATION UPDATE	CW	DJW
1	27.10.23	INITIAL ISSUE		

CLIENT
KANJINI CO-OP LTD



DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			

483 EMERALD FALLS ROAD & 545 KAY ROAD, MAREEBA	
KAY ROAD COMMENTARY	
DRAWING NO.	250-001-SK07
REVISION	2

Appendix B

Council Traffic Counts



Emerald Falls Rd - TC Location CH 80

© 2022 Mareeba Shire Council (MSC). Based on or contains data provided by MSC and The State of Queensland (Department of Resources) [2022]. In consideration of these agencies permitting use of this data you acknowledge and agree that these agencies give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.



Map Grid of Australia, Zone 55 (GDA94)

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-758 -- English (ENA)

Datasets:

Site: [Emerald Falls Road] Intersection Henry Hannam Dr (During Event) @ Ch 80 <100>
Attribute: Mareeba
Direction: 7 - North bound A>B, South bound B>A. Lane: 0
Survey Duration: 10:48 Wednesday, 12 July 2023 => 9:51 Wednesday, 19 July 2023,
Zone:
File: Emerald Falls Road 0 2023-07-19 0952.EC0 (Plus)
Identifier: FN47XFS5 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 10:49 Wednesday, 12 July 2023 => 9:51 Wednesday, 19 July 2023 (6.96012)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 2721 / 2726 (99.82%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-758

Site: Emerald Falls Road.0.1NS
Description: Intersection Henry Hannam Dr (During Event) @ Ch 80 <100>
Filter time: 10:49 Wednesday, 12 July 2023 => 9:51 Wednesday, 19 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	4.0	0.0	0.0	0.0	1.0	6.0	7.0	1.0	2.6
0100-0200	3.0	0.0	0.0	0.0	2.0	6.0	5.0	1.0	2.3
0200-0300	1.0	0.0	0.0	0.0	1.0	2.0	3.0	0.4	1.0
0300-0400	0.0	0.0	0.0	1.0	1.0	3.0	3.0	0.4	1.1
0400-0500	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.2	0.3
0500-0600	6.0	2.0	2.0	2.0	4.0	3.0	4.0	3.2	3.3
0600-0700	19.0	7.0	6.0	16.0	8.0	4.0	3.0	11.2	9.0
0700-0800	13.0	9.0	5.0	4.0	9.0	14.0	10.0	8.0	9.1
0800-0900	21.0	10.0	2.0	6.0	15.0	18.0	7.0	10.8	11.3
0900-1000	24.0	4.0	6.0	17.0	26.0	19.0	19.0	15.4	16.4
1000-1100	41.0	5.0	2.0	19.0	38.0	34.0	18.0	21.0	22.4
1100-1200	34.0	20.0	17.0	18.0	41.0	48.0	47.0	26.0	32.1
1200-1300	46.0	20.0	25.0	37.0	77.0	61.0	39.0	41.0	43.6
1300-1400	35.0	23.0	21.0	37.0	69.0	68.0	50.0	37.0	43.3
1400-1500	23.0	22.0	21.0	36.0	92.0	50.0	50.0	38.8	42.0
1500-1600	28.0	20.0	14.0	35.0	69.0	69.0	44.0	33.2	39.9
1600-1700	27.0	15.0	23.0	29.0	60.0	32.0	43.0	30.8	32.7
1700-1800	20.0	14.0	20.0	23.0	53.0	44.0	36.0	26.0	30.0
1800-1900	12.0	3.0	7.0	10.0	34.0	18.0	22.0	13.2	15.1
1900-2000	4.0	1.0	1.0	6.0	23.0	19.0	15.0	7.0	9.9
2000-2100	3.0	1.0	2.0	12.0	15.0	15.0	17.0	6.6	9.3
2100-2200	0.0	1.0	3.0	6.0	8.0	14.0	7.0	3.6	5.6
2200-2300	0.0	0.0	0.0	4.0	6.0	9.0	3.0	2.0	3.1
2300-2400	0.0	0.0	0.0	2.0	5.0	12.0	4.0	1.4	3.3
Totals									
0700-1900	324.0	165.0	163.0	271.0	583.0	475.0	385.0	301.2	338.0
0600-2200	350.0	175.0	175.0	311.0	637.0	527.0	427.0	329.6	371.7
0600-0000	350.0	175.0	175.0	317.0	648.0	548.0	434.0	333.0	378.1
0000-0000	365.0	177.0	177.0	320.0	657.0	569.0	456.0	339.2	388.7
AM Peak	1000	1100	1100	1000	1100	1100	1100		
	41.0	20.0	17.0	19.0	41.0	48.0	47.0		
PM Peak	1200	1300	1200	1300	1400	1500	1400		
	46.0	23.0	25.0	37.0	92.0	69.0	50.0		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-783 -- English (ENA)

Datasets:

Site: [Emerald Falls Road] Intersection Henry Hannam Dr (After Event) @ Ch 80 <100>
Attribute: Mareeba
Direction: 7 - North bound A>B, South bound B>A. Lane: 0
Survey Duration: 11:26 Wednesday, 19 July 2023 => 11:13 Wednesday, 26 July 2023,
Zone:
File: Emerald Falls Road 0 2023-07-26 1114.EC0 (Plus)
Identifier: FN47XFS5 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 11:27 Wednesday, 19 July 2023 => 11:13 Wednesday, 26 July 2023 (6.99094)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 1309 / 1310 (99.92%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-783

Site: Emerald Falls Road.0.1NS
Description: Intersection Henry Hannam Dr (After Event) @ Ch 80 <100>
Filter time: 11:27 Wednesday, 19 July 2023 => 11:13 Wednesday, 26 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.2	0.1
0100-0200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0200-0300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0300-0400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0400-0500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0500-0600	2.0	1.0	2.0	0.0	0.0	0.0	0.0	1.0	0.7
0600-0700	4.0	7.0	7.0	5.0	0.0	2.0	2.0	4.6	3.9
0700-0800	3.0	6.0	5.0	4.0	5.0	4.0	4.0	4.6	4.4
0800-0900	7.0	6.0	4.0	10.0	3.0	6.0	3.0	6.0	5.6
0900-1000	6.0	5.0	7.0	10.0	12.0	12.0	7.0	8.0	8.4
1000-1100	15.0	9.0	10.0	14.0	31.0	20.0	15.0	15.8	16.3
1100-1200	19.0	14.0	8.0	24.0	21.0	23.0	37.0	15.7	19.3
1200-1300	24.0	20.0	19.0	15.0	30.0	23.0	36.0	21.6	23.9
1300-1400	18.0	20.0	26.0	19.0	28.0	30.0	40.0	22.2	25.9
1400-1500	11.0	13.0	17.0	17.0	33.0	32.0	34.0	18.2	22.4
1500-1600	17.0	20.0	17.0	11.0	38.0	26.0	25.0	20.6	22.0
1600-1700	16.0	8.0	19.0	14.0	18.0	14.0	14.0	15.0	14.7
1700-1800	15.0	7.0	16.0	18.0	12.0	10.0	2.0	13.6	11.4
1800-1900	6.0	1.0	4.0	4.0	4.0	5.0	0.0	3.8	3.4
1900-2000	0.0	1.0	1.0	1.0	0.0	0.0	2.0	0.6	0.7
2000-2100	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.4
2100-2200	0.0	1.0	0.0	0.0	0.0	1.0	3.0	0.2	0.7
2200-2300	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2300-2400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	<hr/>							<hr/>	
0700-1900	157.0	129.0	152.0	160.0	235.0	205.0	217.0	165.1	177.7
0600-2200	161.0	138.0	160.0	166.0	235.0	210.0	225.0	170.5	183.4
0600-0000	161.0	138.0	160.0	166.0	235.0	210.0	225.0	170.5	183.4
0000-0000	163.0	139.0	162.0	167.0	235.0	210.0	225.0	171.7	184.3
AM Peak	1100	1100	1000	1100	1000	1100	1100		
	19.0	14.0	10.0	24.0	31.0	23.0	37.0		
PM Peak	1200	1500	1300	1300	1500	1400	1300		
	24.0	20.0	26.0	19.0	38.0	32.0	40.0		

* - No data.



Kay Rd - TC Location CH 100

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MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-768 -- English (ENA)

Datasets:

Site: [Kay Road] Intersection Kennedy H-Way (During Event) @ Ch 100 <100>
Attribute: Mareeba
Direction: 5 - South bound A>B, North bound B>A. **Lane:** 0
Survey Duration: 12:06 Wednesday, 12 July 2023 => 10:41 Wednesday, 19 July 2023,
Zone:
File: Kay Road 0 2023-07-19 1042.EC0 (Plus)
Identifier: VW61R1VD MC5900-X13 (c)MetroCount 09Nov16
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 12:07 Wednesday, 12 July 2023 => 10:41 Wednesday, 19 July 2023 (6.94074)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 1341 / 1388 (96.61%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-768

Site: Kay Road.0.1SN
Description: Intersection Kennedy H-Way (During Event) @ Ch 100 <100>
Filter time: 12:07 Wednesday, 12 July 2023 => 10:41 Wednesday, 19 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	3.0	0.0	0.0	0.0	1.0	3.0	8.0	0.8	2.1
0100-0200	4.0	0.0	2.0	0.0	0.0	0.0	6.0	1.2	1.7
0200-0300	3.0	0.0	1.0	0.0	0.0	0.0	10.0	0.8	2.0
0300-0400	14.0	0.0	0.0	2.0	3.0	2.0	1.0	3.8	3.1
0400-0500	3.0	0.0	0.0	0.0	3.0	0.0	3.0	1.2	1.3
0500-0600	4.0	3.0	3.0	3.0	1.0	0.0	3.0	2.8	2.4
0600-0700	32.0	29.0	29.0	25.0	5.0	5.0	7.0	24.0	18.9
0700-0800	11.0	15.0	9.0	12.0	21.0	7.0	9.0	13.6	12.0
0800-0900	6.0	14.0	15.0	12.0	10.0	20.0	8.0	11.4	12.1
0900-1000	6.0	13.0	18.0	10.0	14.0	13.0	11.0	12.2	12.1
1000-1100	12.0	9.0	7.0	9.0	16.0	17.0	12.0	10.6	11.7
1100-1200	4.0	9.0	*	12.0	9.0	8.0	8.0	8.5	8.3
1200-1300	8.0	6.0	4.0	8.0	11.0	12.0	7.0	7.4	8.0
1300-1400	2.0	11.0	11.0	15.0	10.0	15.0	10.0	9.8	10.6
1400-1500	11.0	10.0	12.0	14.0	12.0	17.0	13.0	11.8	12.7
1500-1600	10.0	10.0	15.0	8.0	16.0	12.0	14.0	11.8	12.1
1600-1700	15.0	17.0	20.0	18.0	11.0	18.0	9.0	16.2	15.4
1700-1800	32.0	36.0	31.0	29.0	6.0	4.0	5.0	26.8	20.4
1800-1900	5.0	8.0	11.0	9.0	7.0	15.0	11.0	8.0	9.4
1900-2000	4.0	7.0	6.0	5.0	5.0	6.0	8.0	5.4	5.9
2000-2100	2.0	6.0	0.0	5.0	2.0	5.0	2.0	3.0	3.1
2100-2200	2.0	1.0	1.0	1.0	7.0	6.0	3.0	2.4	3.0
2200-2300	0.0	2.0	0.0	1.0	1.0	4.0	6.0	0.8	2.0
2300-2400	0.0	0.0	0.0	1.0	1.0	8.0	5.0	0.4	2.1
Totals	<hr/>							<hr/>	
0700-1900	122.0	158.0	*	156.0	143.0	158.0	117.0	148.1	145.0
0600-2200	162.0	201.0	*	192.0	162.0	180.0	137.0	182.9	175.9
0600-0000	162.0	203.0	*	194.0	164.0	192.0	148.0	184.1	180.0
0000-0000	193.0	206.0	*	199.0	172.0	197.0	179.0	194.7	192.8
AM Peak	0600	0600	*	0600	0700	0800	1000		
	32.0	29.0	*	25.0	21.0	20.0	12.0		
PM Peak	1700	1700	1700	1700	1500	1600	1500		
	32.0	36.0	31.0	29.0	16.0	18.0	14.0		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-799 -- English (ENA)

Datasets:

Site: [Kay Road] Intersection Kennedy H-Way (After Event) @ Ch 100 <100>
Attribute: Mareeba
Direction: 5 - South bound A>B, North bound B>A. **Lane:** 0
Survey Duration: 10:43 Wednesday, 19 July 2023 => 11:58 Wednesday, 26 July 2023,
Zone:
File: Kay Road 0 2023-07-26 1158.EC0 (Plus)
Identifier: VW61R1VD MC5900-X13 (c)MetroCount 09Nov16
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 10:44 Wednesday, 19 July 2023 => 11:58 Wednesday, 26 July 2023 (7.05141)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 1119 / 1133 (98.76%)

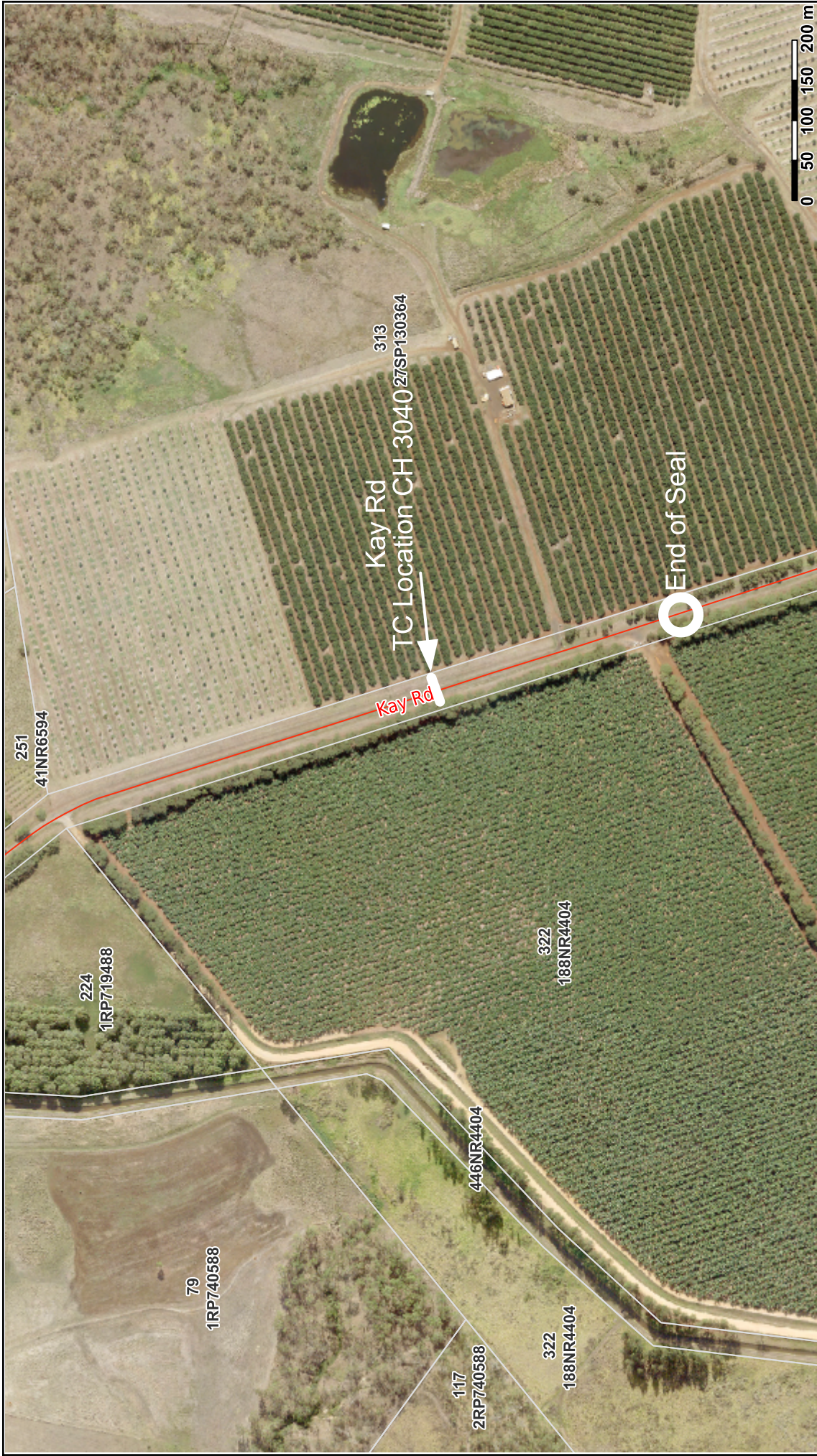
Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-799

Site: Kay Road.0.1SN
Description: Intersection Kennedy H-Way (After Event) @ Ch 100 <100>
Filter time: 10:44 Wednesday, 19 July 2023 => 11:58 Wednesday, 26 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	0.0	2.0	0.0	0.0	0.0	1.0	0.0	0.4	0.4
0100-0200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0200-0300	0.0	1.0	0.0	0.0	0.0	2.0	0.0	0.2	0.4
0300-0400	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.4	0.4
0400-0500	2.0	1.0	0.0	5.0	3.0	0.0	0.0	2.2	1.6
0500-0600	2.0	2.0	1.0	1.0	1.0	1.0	0.0	1.4	1.1
0600-0700	24.0	25.0	23.0	23.0	5.0	1.0	1.0	20.0	14.6
0700-0800	15.0	10.0	11.0	8.0	7.0	3.0	3.0	10.2	8.1
0800-0900	8.0	12.0	12.0	13.0	9.0	15.0	8.0	10.8	11.0
0900-1000	8.0	14.0	14.0	13.0	8.0	10.0	11.0	11.4	11.1
1000-1100	12.0	14.0	4.0	19.0	10.0	14.0	13.0	10.5	11.3
1100-1200	8.0	7.0	10.5	7.0	7.0	3.0	12.0	8.3	8.1
1200-1300	12.0	6.0	6.0	23.0	4.0	4.0	9.0	10.2	9.1
1300-1400	8.0	7.0	9.0	13.0	10.0	3.0	7.0	9.4	8.1
1400-1500	13.0	14.0	3.0	11.0	7.0	17.0	4.0	9.6	9.9
1500-1600	9.0	14.0	11.0	10.0	8.0	5.0	4.0	10.4	8.7
1600-1700	12.0	11.0	21.0	21.0	9.0	9.0	14.0	14.8	13.9
1700-1800	31.0	37.0	30.0	16.0	6.0	4.0	5.0	24.0	18.4
1800-1900	5.0	10.0	10.0	11.0	10.0	1.0	12.0	9.2	8.4
1900-2000	4.0	7.0	7.0	4.0	3.0	4.0	3.0	5.0	4.6
2000-2100	3.0	5.0	3.0	6.0	1.0	2.0	3.0	3.6	3.3
2100-2200	2.0	1.0	1.0	3.0	6.0	1.0	5.0	2.6	2.7
2200-2300	1.0	0.0	0.0	2.0	3.0	1.0	1.0	1.2	1.1
2300-2400	1.0	1.0	0.0	0.0	2.0	0.0	0.0	0.8	0.6
Totals									
0700-1900	141.0	156.0	141.5	165.0	95.0	88.0	102.0	138.8	126.2
0600-2200	174.0	194.0	175.5	201.0	110.0	96.0	114.0	170.0	151.4
0600-0000	176.0	195.0	175.5	203.0	115.0	97.0	115.0	172.0	153.1
0000-0000	180.0	201.0	177.5	209.0	120.0	102.0	115.0	176.6	157.1
AM Peak	0600	0600	0600	0600	1000	0800	1000		
	24.0	25.0	23.0	23.0	10.0	15.0	13.0		
PM Peak	1700	1700	1700	1200	1800	1400	1600		
	31.0	37.0	30.0	23.0	10.0	17.0	14.0		

* - No data.



Kay Rd - TC Location CH 3040

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Mareeba
SHIRE COUNCIL



Map Grid of Australia, Zone 55 (GDA94)

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-773 -- English (ENA)

Datasets:

Site: [Kay Road] Intersection Kennedy H-Way (During Event) @ Ch 3040 <100>
Attribute: Mareeba
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 12:47 Wednesday, 12 July 2023 => 10:51 Wednesday, 19 July 2023,
Zone:
File: Kay Road 0 2023-07-19 1051.EC0 (Plus)
Identifier: CS916NHM MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 12:48 Wednesday, 12 July 2023 => 10:51 Wednesday, 19 July 2023 (6.91914)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 327 / 328 (99.70%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-773

Site: Kay Road.0.1NS
Description: Intersection Kennedy H-Way (During Event) @ Ch 3040 <100>
Filter time: 12:48 Wednesday, 12 July 2023 => 10:51 Wednesday, 19 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.3
0100-0200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0200-0300	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.4	0.3
0300-0400	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1
0400-0500	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.2	0.1
0500-0600	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3
0600-0700	6.0	4.0	4.0	3.0	0.0	0.0	1.0	3.4	2.6
0700-0800	6.0	5.0	4.0	6.0	4.0	0.0	0.0	5.0	3.6
0800-0900	1.0	2.0	5.0	2.0	2.0	2.0	1.0	2.4	2.1
0900-1000	2.0	3.0	2.0	1.0	2.0	2.0	6.0	2.0	2.6
1000-1100	2.0	2.0	1.0	3.0	3.0	6.0	2.0	2.2	2.7
1100-1200	3.0	1.0	*	4.0	0.0	4.0	5.0	2.0	2.8
1200-1300	4.0	0.0	0.0	6.0	6.0	5.0	0.0	3.2	3.0
1300-1400	1.0	5.0	2.0	3.0	5.0	5.0	3.0	3.2	3.4
1400-1500	5.0	2.0	2.0	4.0	0.0	2.0	2.0	2.6	2.4
1500-1600	3.0	1.0	5.0	2.0	2.0	3.0	4.0	2.6	2.9
1600-1700	7.0	11.0	9.0	7.0	3.0	2.0	1.0	7.4	5.7
1700-1800	5.0	8.0	9.0	6.0	2.0	2.0	3.0	6.0	5.0
1800-1900	3.0	4.0	5.0	5.0	1.0	1.0	2.0	3.6	3.0
1900-2000	0.0	6.0	5.0	3.0	0.0	0.0	0.0	2.8	2.0
2000-2100	1.0	4.0	0.0	1.0	1.0	0.0	1.0	1.4	1.1
2100-2200	2.0	1.0	0.0	0.0	2.0	0.0	0.0	1.0	0.7
2200-2300	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3
2300-2400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals									
0700-1900	42.0	44.0	*	49.0	30.0	34.0	29.0	42.2	39.3
0600-2200	51.0	59.0	*	56.0	33.0	34.0	31.0	50.8	45.7
0600-0000	51.0	61.0	*	56.0	33.0	34.0	31.0	51.2	46.0
0000-0000	53.0	62.0	*	56.0	36.0	36.0	31.0	52.4	47.1
AM Peak	0700	0700	*	0700	0700	1000	0900		
	6.0	5.0	*	6.0	4.0	6.0	6.0		
PM Peak	1600	1600	1700	1600	1200	1300	1500		
	7.0	11.0	9.0	7.0	6.0	5.0	4.0		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-794 -- English (ENA)

Datasets:

Site: [Kay Road] Intersection Kennedy H-Way (After Event) @ Ch 3040 <100>
Attribute: Mareeba
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 10:57 Wednesday, 19 July 2023 => 11:55 Wednesday, 26 July 2023,
Zone:
File: Kay Road 0 2023-07-26 1156.EC0 (Plus)
Identifier: CS916NHM MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v5.07)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 10:58 Wednesday, 19 July 2023 => 11:55 Wednesday, 26 July 2023 (7.03998)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 366 / 366 (100.00%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-794

Site: Kay Road.0.1NS
Description: Intersection Kennedy H-Way (After Event) @ Ch 3040 <100>
Filter time: 10:58 Wednesday, 19 July 2023 => 11:55 Wednesday, 26 July 2023
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.2	0.3
0100-0200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0200-0300	0.0	1.0	0.0	0.0	0.0	2.0	0.0	0.2	0.4
0300-0400	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.2	0.3
0400-0500	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.4	0.3
0500-0600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0600-0700	3.0	4.0	4.0	3.0	0.0	0.0	0.0	2.8	2.0
0700-0800	9.0	9.0	4.0	4.0	2.0	1.0	1.0	5.6	4.3
0800-0900	5.0	5.0	2.0	2.0	3.0	12.0	5.0	3.4	4.9
0900-1000	4.0	3.0	2.0	5.0	1.0	5.0	4.0	3.0	3.4
1000-1100	4.0	2.0	0.0	1.0	3.0	7.0	10.0	1.7	3.4
1100-1200	2.0	2.0	2.5	3.0	6.0	2.0	5.0	3.0	3.1
1200-1300	2.0	1.0	1.0	3.0	2.0	1.0	8.0	1.8	2.6
1300-1400	2.0	1.0	0.0	9.0	4.0	1.0	2.0	3.2	2.7
1400-1500	4.0	2.0	0.0	2.0	2.0	4.0	1.0	2.0	2.1
1500-1600	1.0	5.0	5.0	1.0	3.0	3.0	0.0	3.0	2.6
1600-1700	4.0	5.0	6.0	11.0	5.0	2.0	1.0	6.2	4.9
1700-1800	8.0	9.0	7.0	8.0	2.0	2.0	0.0	6.8	5.1
1800-1900	1.0	2.0	3.0	5.0	7.0	0.0	8.0	3.6	3.7
1900-2000	1.0	3.0	5.0	3.0	0.0	1.0	0.0	2.4	1.9
2000-2100	0.0	2.0	1.0	4.0	0.0	0.0	2.0	1.4	1.3
2100-2200	1.0	0.0	0.0	2.0	5.0	0.0	2.0	1.6	1.4
2200-2300	0.0	0.0	0.0	0.0	3.0	0.0	1.0	0.6	0.6
2300-2400	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.2	0.1
Totals	<hr/>							<hr/>	
0700-1900	46.0	46.0	32.5	54.0	40.0	40.0	45.0	43.3	42.8
0600-2200	51.0	55.0	42.5	66.0	45.0	41.0	49.0	51.5	49.4
0600-0000	51.0	55.0	42.5	66.0	49.0	41.0	50.0	52.3	50.1
0000-0000	51.0	57.0	42.5	67.0	51.0	45.0	50.0	53.3	51.4
AM Peak	0700	0700	0700	0900	1100	0800	1000		
	9.0	9.0	4.0	5.0	6.0	12.0	10.0		
PM Peak	1700	1700	1700	1600	1800	1400	1800		
	8.0	9.0	7.0	11.0	7.0	4.0	8.0		

* - No data.

Appendix C

Kanjini Co-Op Vehicle Data



Kanjini Co-Op Ltd

Living Sustainable Solutions

ABN: 87442541016

30th June 2022

To:
Mareeba Shire Council
65 Rankine Street
Mareeba, 4880 QLD

RE: Expected traffic movements regarding MCU/22/0002

Dear Councillors and Council Officers,

We understand that council might wish to require us to engage an independent consultant to provide a traffic report to council for this Development Application.

We rather see more funds go towards roads than to consultants, so we herewith offer what we believe to be very generous road contributions for the various aspects and stages of our Development Application.

This offer is made with a condition that should council continue to insist on a consultant's report, this offer becomes void. Should such report provide lower traffic estimates than we offer here, those lower report figures will be used and we m also argue and request that the consultant's fee be reimbursed to us.

HISTORICAL DATA:

To establish a base line and to explore any differentiation from initially estimated to actual traffic movements, firstly we wish to share the actual yearly road usage date for our current 13 camp sites:

Kanjini Co-Op Ltd.
Post: P O Box 51 Kuranda QLD 4881 Phone: 07-0499620260
Email: info@kanjini.org URL: www.kanjini.org

	bookings received	cars registered	cars per booking	Bookings paid number	%	Cancelled number	%	Arrived %	Camp 2 paid	%
2018	173	339	1.96	120	69.4	5	4.2	66.5	35	29.2
2019	212	413	1.95	159	75	10	6.3	70.3	38	23.9
2020	361	751	2.08	330	91.4	35	10.6	81.7	49	14.8
2021	357	712	1.99	295	82.6	15	5.1	78.4	52	17.6
Total	1103	2215	2.01	904	82	65	7.2	76.1	174	19.2
20/21 average	359	732	2.04	313	87.2	25	8	80.2	51	16.3

During the 2018 and 2019 calendar years we operated only 6 camp sites. In December 2019 we opened another seven camp sites, so for this exercise I will use the average for the last two years of 732 cars which were registered with us.

87.2% of received bookings were paid for and 8% of those were then cancelled before arrival

Only 80.2% of bookings made actually arrived, leading to 19.8% less cars arriving than being registered.

Camper's cars are required to be registered on the online booking form. For a few bookings additional cars are registered by email later. We do not keep count of those, but guesstimate this to result in an extra 10-20% cars arriving. Our security cameras show that only about 5-10% of campers leave and return to the property while camping and almost all of those do that only once.

Consequently actual yearly vehicle movements caused by our existing camp sites (averaged over the last two years) were: 732 cars -19.8% = 587 cars + 15-30% = 675 to 763 cars or 1350-1526 vehicle movements per year, which is still 16-26% lower than the 1,825 vehicle movements per year we estimated and paid for in our initial 2014 Development Application.

Average actual VMpY for each camp site were 100 to 117, compared with initially estimated 140. This comparison shows that our estimates are certainly erring on the side of caution and are favouring council.

16.3% of total bookings were for camp 2, which equals between 220 to 249 vehicle movements / year were on Emerald Falls Road and between 1,130 and 1,277 vehicle movements / year on Kay Road, because our camp 2 is by far the most popular and allows for larger groups.

For the twelve camp sites accessible from Kay road, the average vehicle movements caused by each camp has been 94 to 106 per year.

Appendix D

*Extract from TMR Guideline
“Event Traffic Management Design Guidelines”*

Guideline

Event Traffic Management Design Guidelines

July 2022

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While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Feedback

Please send your feedback regarding this document to: tmr.techdocs@tmr.qld.gov.au

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Appendix E

Vehicle Axle Loading Configurations



Hilux GGN25, KUN26

Front Axle Capacity

Since January, 2005, the Toyota Hilux Workmate (WM), SR and SR5 grade 4x4 models fitted only with either 205 R16C or 255/70 R15C tyre size are capable of increasing the front axle loads to 1300 kgs. There is an additional tyre loading information placard that certifies this, which is situated above the standard tyre placard located inside the drivers door opening.

The front axle capacity can be increased to 1300 kgs with the following tyre pressure

1. Tyre size 205R16C-8PR 110/108S – Cold tyre pressure increased to 260 kPa.
2. Tyre size 255/70R15C 112/110S – Cold tyre pressure remains at 200 kPa.

Toyota Hilux SR5 & SR with VSC option grade 4x4 models fitted with 265/65 R17C 112 tyre size have a front axle capacity of 1280kg.

Additional information is available on the vehicles actual Tyre Loading Information Decal or within the vehicle’s Owner Manual under the headings “tires or weight limits”.

This axle loading specification supersedes the axle loading specification in the Repair Manual and Body Builders Guide.

Please use this information to respond to owner enquiry on this subject.

■ **Gross axle weight**
 The load on either the front or rear axle resulting from distribution of the gross vehicle weight on both axles must not exceed the following:

2WD models

Single-cab models
 Front: 1145 kg (2524 lb)
 Rear: 1750 kg (3858 lb)

Extra-cab models
 Front: 1200 kg (2646 lb)
 Rear: 1725 kg (3803 lb)

Double-cab models
 Front: 1200 kg (2646 lb)
 Rear: 1550 kg (3417 lb)

4WD models
 Front: 1280 kg (2822 lb)
 Rear: 1600 kg (3527 lb)

Alternate Front Axle Capacity (Four-wheel drive models only)
 Where Toyota genuine accessories are fitted, such as a steel bullbar and winch combination, or for specific vehicle passenger/payload combination requirements, then front axle capacity can be increased as shown below:

Tyre size 255/70R15C 112/110S
 Front 1300 kg (2866 lb)

Tyre size 205R16C-8PR 110/108S
 Front 1300 kg* (2866 lb)

*Cold tire inflation pressure must be increased to 260 kPa.
 Please refer to the vehicle tire pressure label or page 406 for tire pressure specification summary.

DAILY €6 VAN SPECIFICATIONS



IVECO

Your partner for sustainable transport

DAILY SPECIFICATIONS 35S VAN

DIMENSIONS (mm)

	35S14V Euro VI				35S18V Euro VI				35S21V Euro VI		
X Wheelbase	3000	3520	3520L	4100	3520	3520L	4100	3520	3520L	4100	
Y Rear overhang	1119	1119	1519	2104	1119	1519	2104	1119	1519	2104	
K Overall length	5476	5687	6087	7252	5687	6087	7252	5687	6087	7252	
H Overall height – unladen	2315	2314	2660	2663	2281	2662	2665	2281	2662	2665	
O Front track	1740	1740	1740	1740	1740	1740	1740	1740	1740	1740	
N Rear track	1704	1704	1704	1704	1704	1704	1704	1704	1704	1704	
E Overall width (Cab)	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	
Turning circle kerb to kerb	10546	12084	12084	13800	12084	12084	13800	12084	12084	13800	
Turning circle wall to wall	11200	12744	12744	14466	12744	12744	14466	12744	12744	14466	

CARGO AREA (mm)

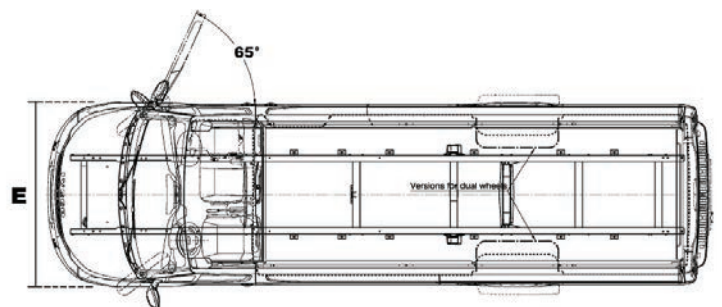
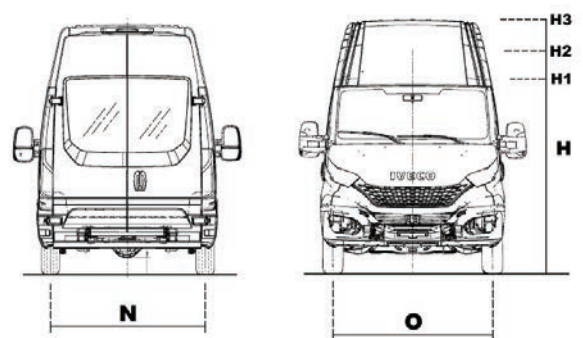
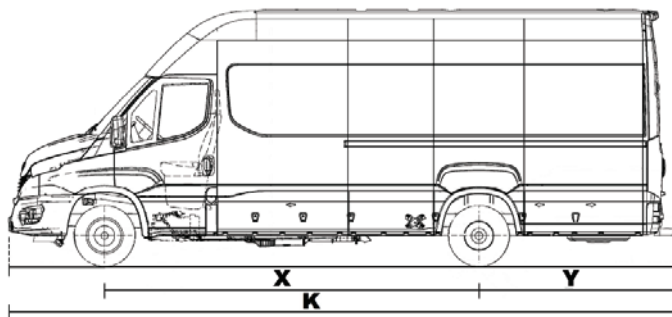
	35S14V Euro VI				35S18V Euro VI				35S21V Euro VI		
Volume (m ³)	7,3	9	12	16	9	12	16	9	12	16	
Internal length	2610	3130	3540	4680	3130	3540	4680	3130	3540	4680	
Internal width	1740	1740	1740	1740	1740	1740	1740	1740	1740	1740	
Internal height	1545 (H1)	1545 (H1)	1900 (H2)	1900 (H2)	1545 (H1)	1900 (H2)	1900 (H2)	1545 (H1)	1900 (H2)	1900 (H2)	
Height of loading floor - unladen	715	685	682	685	685	682	685	685	682	685	
Wheel house distance (int.)	1317	1317	1317	1317	1317	1317	1317	1317	1317	1317	
Rear door opening width	1530	1530	1530	1530	1530	1530	1530	1530	1530	1530	
Rear door opening height	1450	1450	1800	1800	1450	1800	1800	1450	1800	1800	
Side door opening width	1100	1260	1260	1260	1260	1260	1260	1260	1260	1260	
Side door opening height	1425	1425	1800	1800	1425	1800	1800	1425	1800	1800	

MASS (kg)

	35S14V Euro VI				35S18V Euro VI				35S21V Euro VI		
GVM	3800*	3800*	3800*	3800*	3800*	3800*	3800*	3800*	3800*	3800*	
GCM	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	
Towing capacity with braked trailer	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	
Front axle capacity	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Rear axle capacity	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	
Kerb mass front axle	1359	1444	1372	1420	1447	1375	1421	1447	1375	1421	
Kerb mass rear axle	806	777	907	1013	788	919	1020	788	919	1020	
Kerb mass total**	2165	2221	2279	2433	2235	2294	2441	2235	2294	2441	
Payload capacity	1635	1579	1521	1367	1565	1506	1359	1565	1506	1369	

* 3500kg GVM and 6700kg GCM with rear air suspension

** Kerb masses are with minimal fuel, spare wheel, tools and no driver



DAILY SPECIFICATIONS 50C VAN

DIMENSIONS (mm)

	50C18V Euro VI				50C21V Euro VI			
X Wheelbase	3520L	4100	4100	4100L	3520L	4100	4100	4100L
Y Rear overhang	1541	2126	2126	2526	1541	2126	2126	2526
K Overall length	6109	7274	7274	7674	6109	7274	7274	7674
H Overall height - unladen	2748	2752	2944	2945	2748	2752	2944	2945
O Front track	1724	1724	1724	1724	1724	1724	1724	1724
N Rear track	1542	1542	1542	1542	1542	1542	1542	1542
E Overall width (Cab)	2010	2010	2010	2010	2010	2010	2010	2010
Turning circle kerb to kerb	12744	14564	14564	14564	12744	14564	14564	14564
Turning circle wall to wall	13366	15190	15190	15190	13366	15190	15190	15190

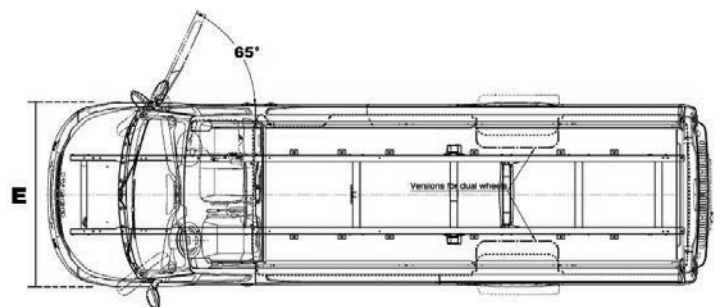
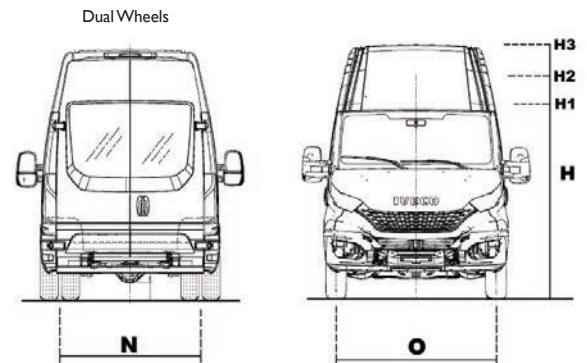
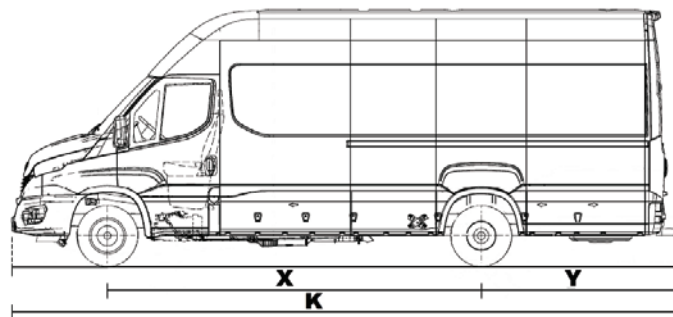
CARGO AREA (mm)

	50C18V Euro VI				50C21V Euro VI			
Volume (m ³)	12	16	18	19.6	12	16	18	19.6
Internal length	3540	4680	4680	5125	3540	4680	4680	5125
Internal width	1740	1740	1740	1740	1740	1740	1740	1740
Internal height	1900 (H2)	1900 (H2)	2100 (H3)	2100 (H3)	1900 (H2)	1900 (H2)	2100 (H3)	2100 (H3)
Height of loading floor - unladen	770	774	774	775	770	774	774	775
Wheel house distance (int.)	1032	1032	1032	1032	1032	1032	1032	1032
Rear door opening width	1530	1530	1530	1530	1530	1530	1530	1530
Rear door opening height	1800	1800	2000	2000	1800	1800	2000	2000
Side door opening width	1260	1260	1260	1260	1260	1260	1260	1260
Side door opening height	1800	1800	1800	1800	1800	1800	1800	1800

MASS (kg)

	50C18V Euro VI				50C21V Euro VI			
GVM	4495	4495	4495	4495	4495	4495	4495	4495
GVM Option	5200	5200	5200	5200	5200	5200	5200	5200
GCM	7995	7995	7995	7995	7995	7995	7995	7995
GCM Option	8700	8700	8700	8700	8700	8700	8700	8700
Towing capacity with braked trailer	3500	3500	3500	3500	3500	3500	3500	3500
Front axle capacity	2100	2100	2100	2100	2100	2100	2100	2100
Rear axle capacity	3700	3700	3700	3700	3700	3700	3700	3700
Kerb mass front axle	1488	1512	1520	1513	1488	1512	1520	1513
Kerb mass rear axle	1065	1177	1193	1230	1065	1177	1193	1230
Kerb mass total*	2553	2689	2713	2743	2553	2689	2713	2743
Payload capacity	1942	1806	1782	1752	1942	1806	1782	1752

* Kerb masses are with minimal fuel, spare wheel, tools and no driver



DAILY SPECIFICATIONS 70C VAN

DIMENSIONS (mm)

	70C18V Euro VI			70C21V Euro VI		
X Wheelbase	4100 (H2)	4100 (H3)	4100L (H3)	4100 (H2)	4100 (H3)	4100L (H3)
Y Rear overhang	2116	2116	2516	2116	2116	2516
K Overall length	7264	7264	7664	7264	7264	7664
H Overall height unladen	2849	3041	3054	2849	3041	3054
O Front track	1725	1725	1725	1725	1725	1725
N Rear track	1660	1660	1660	1660	1660	1660
E Overall width (Cab)	2052	2052	2052	2052	2052	2052
Turning circle kerb to kerb	14108	14108	14108	14108	14108	14108
Turning circle wall to wall	14758	14758	14758	14758	14758	14758

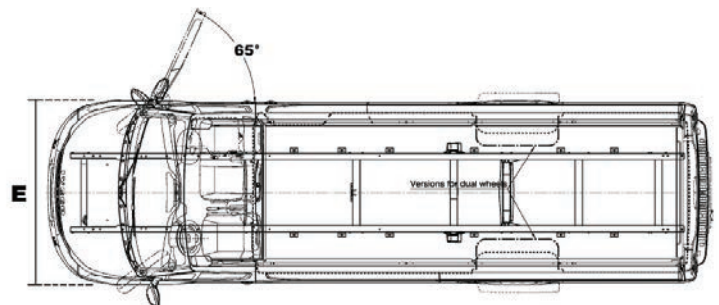
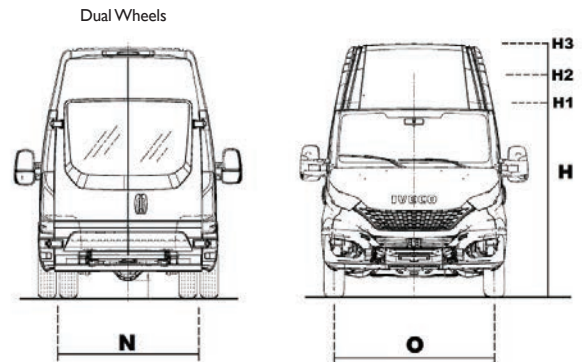
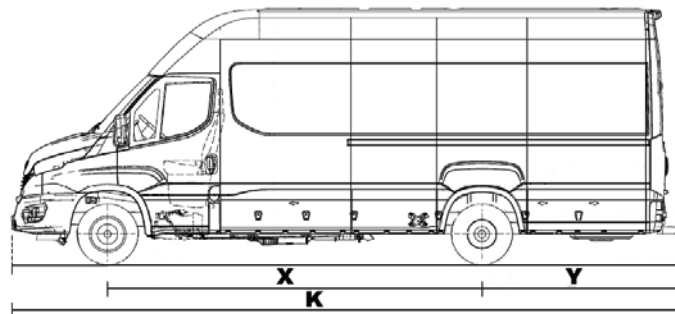
CARGO AREA (mm)

	70C18V Euro VI			70C21V Euro VI		
Volume (m ³)	16	18	19.6	16	18	19.6
Internal length	4680	4680	5125	4680	4680	5125
Internal width	1740	1740	1740	1740	1740	1740
Internal height	1900 (H2)	2100 (H3)	2100 (H3)	1900 (H2)	2100 (H3)	2100 (H3)
Height of loading floor - unladen	871	871	884	871	871	884
Wheel house distance (int.)	1032	1032	1032	1032	1032	1032
Rear door opening width	1530	1530	1530	1530	1530	1530
Rear door opening height	1800	2000	2000	1800	2000	1800
Side door opening width	1260	1260	1260	1260	1260	1260
Side door opening height	1800	1800	1800	1800	1800	1800

MASS (kg)

	70C18V Euro VI			70C21V Euro VI		
GVM	7000	7000	7000	7000	7000	7000
GCM	10500	10500	10500	10500	10500	10500
Towing capacity with braked trailer	3500	3500	3500	3500	3500	3500
Front axle capacity	2500	2500	2500	2500	2500	2500
Rear axle capacity	5350	5350	5350	5350	5350	5350
Kerb mass front axle	1590	1602	1601	1590	1602	1601
Kerb mass rear axle	1433	1445	1475	1433	1445	1475
Kerb mass total*	3023	3047	3076	3023	3047	3076
Payload capacity	3977	3953	3924	3977	3953	3924

* Kerb masses are with minimal fuel, spare wheel, tools and no driver



DAILY SPECIFICATIONS

ENGINE

I36EVID FIA Euro 6 Heavy Duty engine (standard on 35S) 4 stroke diesel with direct-injection, intercooler and electronic-controlled variable geometry turbine (e-VGT).

Maximum Output I36EVID: 100 kW (136 hp) @ 3600 rpm

Maximum Torque I36EVID: 350 Nm (258 ft-lbs) @ 1500 rpm

I80EVID FIC Heavy Duty Euro 6 engine (Standard on 50C & 70C) 4 stroke diesel with direct-injection, Variable Geometry Turbocharger (VGT) and intercooler

Maximum Output: I80EVID: 132 kW (180 hp) @ 3500 rpm

Maximum Torque: I80EVID: 430 Nm (317 ft-lbs) @ 1500 rpm

Emissions Technology: Exhaust Gas Recirculation and Selective Catalytic Reduction

Total Displacement: FIA: 2.3 litre, FIC: 3.0 litre

Exhaust: Muffler horizontally positioned on the right side and tailpipe located mid-way down right side of vehicle

Optional Engines available on 35S:

I80EVID - Engine FIC 180 Hp Euro 6 Heavy Duty 4 stroke diesel with direct-injection and Variable Geometry Turbine (VGT)

210EVID - Engine FIC 210 Hp EURO 6 Heavy Duty 4 stroke diesel with direct-injection and electronically-controlled variable geometry turbine (e-VGT)

Optional Engine available on 50C and 70C:

210EVID - Engine FIC 210 Hp EURO 6 Heavy Duty 4 stroke diesel with direct-injection and electronically-controlled variable geometry turbine (e-VGT)

Maximum Output: I80EVID: 132 kW (180 hp) @ 3500 rpm

Maximum Torque: I80EVID: 430 Nm (317 ft-lbs) @ 1500 rpm

Maximum Output: 210EVID: 155 kW (210 hp) @ 3500

Maximum Torque: 210EVID: 470 Nm (347 ft-lbs) @ 1500

TRANSMISSION

6-speed Synchromesh Double Overdrive Manual Transmission

Type: 2835.6 DOD (136 hp)

1st 5.004, 2nd 2.635, 3rd 1.503, 4th 1.000, 5th 0.812 OD, 6th 0.685 DOD, Rev. 4.189

6-speed Synchromesh Manual Transmission

Type: 2840.6 OD (180 hp) 1st 5.375, 2nd 3.154, 3rd 2.041, 4th 1.365, 5th 1.000, 6th 0.791 OD, Rev. 4.838

Optional Transmission: 8-speed ZF Torque Converter Automatic (Hi-Matic)

Type: 8V470A

1st 4.696, 2nd 3.130, 3rd 2.104, 4th 1.667, 5th 1.285, 6th 1.000, 7th 0.839 OD, 8th 0.667 DOD, Rev. 3.297

STEERING

Type: Hydraulic power steering

Diameter: 380 mm diameter steering wheel with telescopic adjustment

CLUTCH

Type: Single dry plate hydraulic control

Diameter: 267 mm (136 hp); 280 mm (180 hp)

FRONT AXLE & SUSPENSION

Capacity: 1900 kg (35S)

Capacity: 2100 kg (50C)

Capacity: 2500 kg (70C)

Suspension Type: Double wishbone with transversal leaf spring (35S)

Suspension Type: Independent with adjustable steel torsion bar (50C and 70C)

REAR AXLE & SUSPENSION

Capacity: 2430 kg (35S)

Capacity: 3700 kg (50C)

Capacity: 5350 kg (70C)

Suspension Type: Rear parabolic spring

Optional Suspension: ECAS - Rear air suspension (35S 3.5T GVM)

Optional Suspension: ECAS - Rear air suspension (50C and 70C)

Capacity: 2240 kg (35S 3.5T GVM)

Rear axle ratio: 35S - 3.60: 1

Rear axle ratio: 50C - 3.60: 1

Rear axle ratio: 70C - 4.30: 1

Optional Differential: Driver Controlled Differential Lock (50C and 70C)

BRAKES

Front / Diameter: Disc brakes / 300 mm (35S)

Front / Diameter: Disc brakes / 290 mm (50C)

Front / Diameter: Disc brakes / 301 mm (70C)

Rear / Diameter: Disc brakes / 296 mm (35S)

Rear / Diameter: Disc brakes / 290 mm (50C)

Rear / Diameter: Disc brakes / 306 mm (70C)

Parking brake: Electronic

Service brakes: Full ABS disc brakes with floating calipers and auto wear adjustment.

Hydraulically operated with vacuum servo assistance. Dual circuit configuration; cross split on 35S & independent from 50C up to 70C. Low Brake fluid level indicator - front & rear pad wear sensors. Asbestos free pads.

SAFETY

- **ESP9** - Includes: ABS (Antilock Braking System), EBD (Electronic Brake force Distribution), ASR (Anti Slip Regulator), MSR (Motor Drag torque control) Hill Holder (Assisted uphill departure), HBA (Hydraulic Brake Assist), LAC (Load Adaptive Control), TSM (Trailer sway mitigation), RMI (Roll Movement Intervention), ROM (Roll Over Mitigation) & Crosswind assist
- Four SRS airbags
- Advanced Emergency Braking System (AEBS)

FUEL SYSTEM

100 litres with fuel cap location on passenger side (70 litres on 7.3m³)

20 litre Adblue

ELECTRICAL SYSTEM

Type: 12V

Battery: 12V-110 Ah (Smart-charging)

Smart Alternator: 12V-220 A

Trailer: Wiring to rear of chassis

CHASSIS

Type: C Section steel longitudinal side members and tubular cross members

WHEELS & TYRES

Wheels: Steel 6.5J x R16 (35S); Steel 5J x R16 (50C); Steel 6J x R16 (70C)

- Spare wheel included - in load compartments on some models
- Single rear wheel (35S)
- Dual rear wheels (50C and 70C)

Tyre Size: 235/65 R16 (35S); 195/75 R16 (50C); 225/75 R16 (70C)

CABIN FEATURES

- Driver, passenger and curtain airbags with seat belt pretensioners
- Suspended, heated and fully adjustable driver seat with armrest
- Bench seat with two occupant capacity, under seat storage and fold down table
- Adaptive cruise control
- Electric windows
- Exterior mirrors with integrated wide angle and direction indicators, heated and electronically adjustable
- Overhead console with storage shelf
- Large dual storage pockets in doors
- Document storage compartment
- Body builder connections
- 2 cup and 2x bottle holders
- Air conditioning
- Electronic parking brake
- Ecoswitch Pro
- 2 spotlights
- 4 loud speakers

LIGHTS

- Daytime running lights
- Optional full LED headlights

DASHBOARD

- 3.5" high resolution TFT colour display and silver dial rings
- TFT Display Panel includes: digital speedometer, ADAS (Advanced Driver-Assistance Systems) dashboard, ADAS quick menu, TPMS, oil, battery and service information. Navigation and phone multimedia, fuel economy, trip computer, vehicle settings, display settings and diagnostics.
- Engine oil level display
- Instrument light dimmer switch
- Dash-mounted gear lever
- 3 storage areas on top of dash
- MP3 player, USB and AUX connectivity, Bluetooth with steering wheel controls

SECURITY

- Central locking with remote control
- Steering lock
- Engine immobiliser
- Run Lock Function (Only available if Expansion Module option is selected)

LOAD AREA

- Floor - steel ribbed with load lashing rings
- Side access via top hung side sliding door internal step and grab handle
- Rear access by hinged doors with stops at 90° and 270° (180° on 7.3 m³) and grab handle
- Interior lights at side and rear (door operated with individual isolation)
- Full bulkhead with window




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Overview

Model	SCT6703XZB53LEX
Brand Name	 TOYOTA Toyota Coaster
Bulletin	#247
Type of vehicle	Bus
VIN	LFME1581xxxxxxxx
Country of origin	China
Chassis	SCT6703XZB53L III mfg by Sichuan FAW Toyota Motor Co., Ltd., China

Technical specifications

Performance

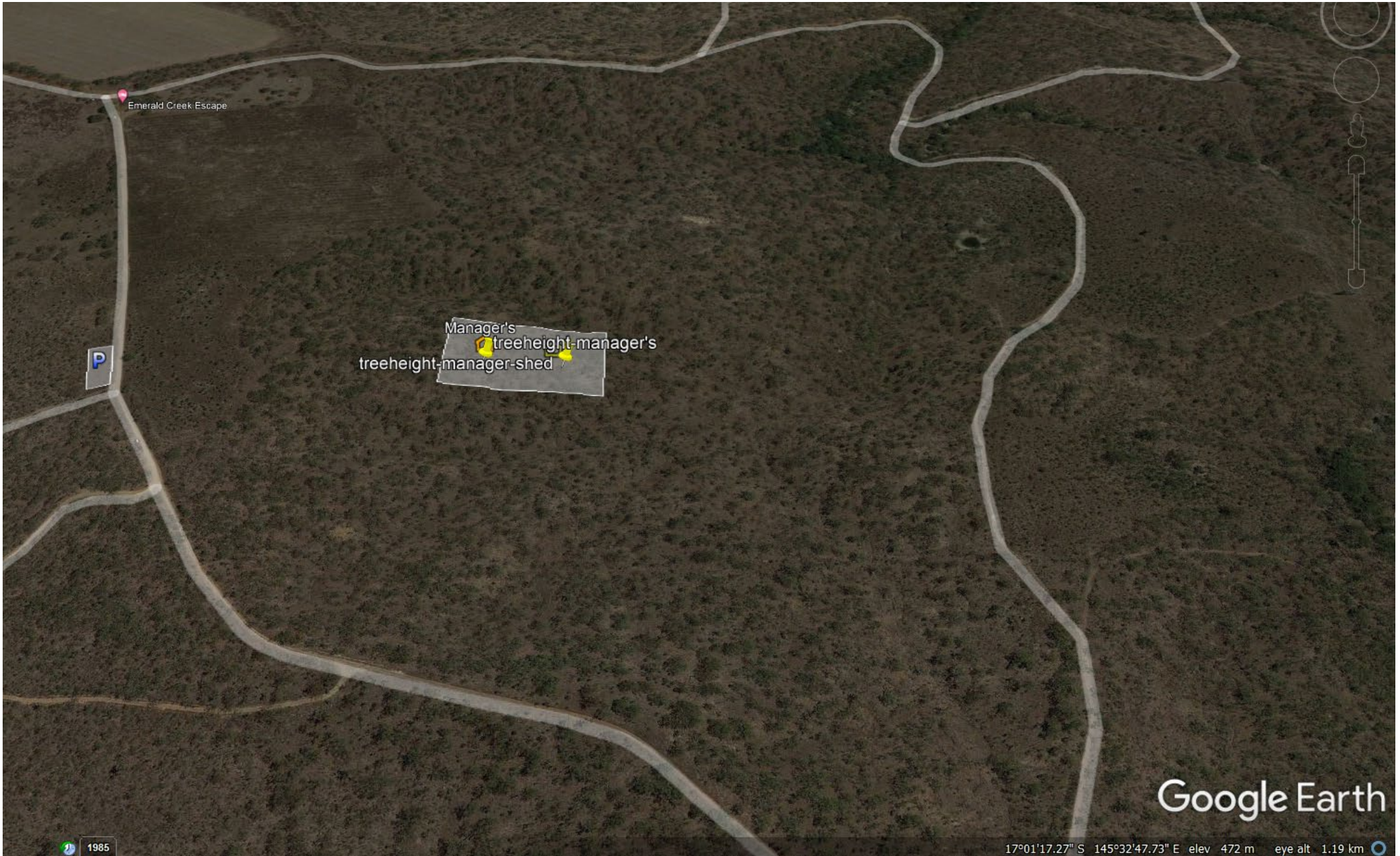
Fuel	diesel fuel
Environmental standard	National IV / Euro 4
Maximum speed	120 km/h
ABS	have

Capacity

Passenger capacity (including driver)	10-23
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Weights and Ground pressure

Curb weight	3670 kg, 3680 kg, 3835 kg
Gross vehicle weight rating	5500 kg
Axle load distribution	2300 kg / 3200 kg 2.3 t / 3.2 t 5,100 lbs / 7,100 lbs



Emerald Creek Escape

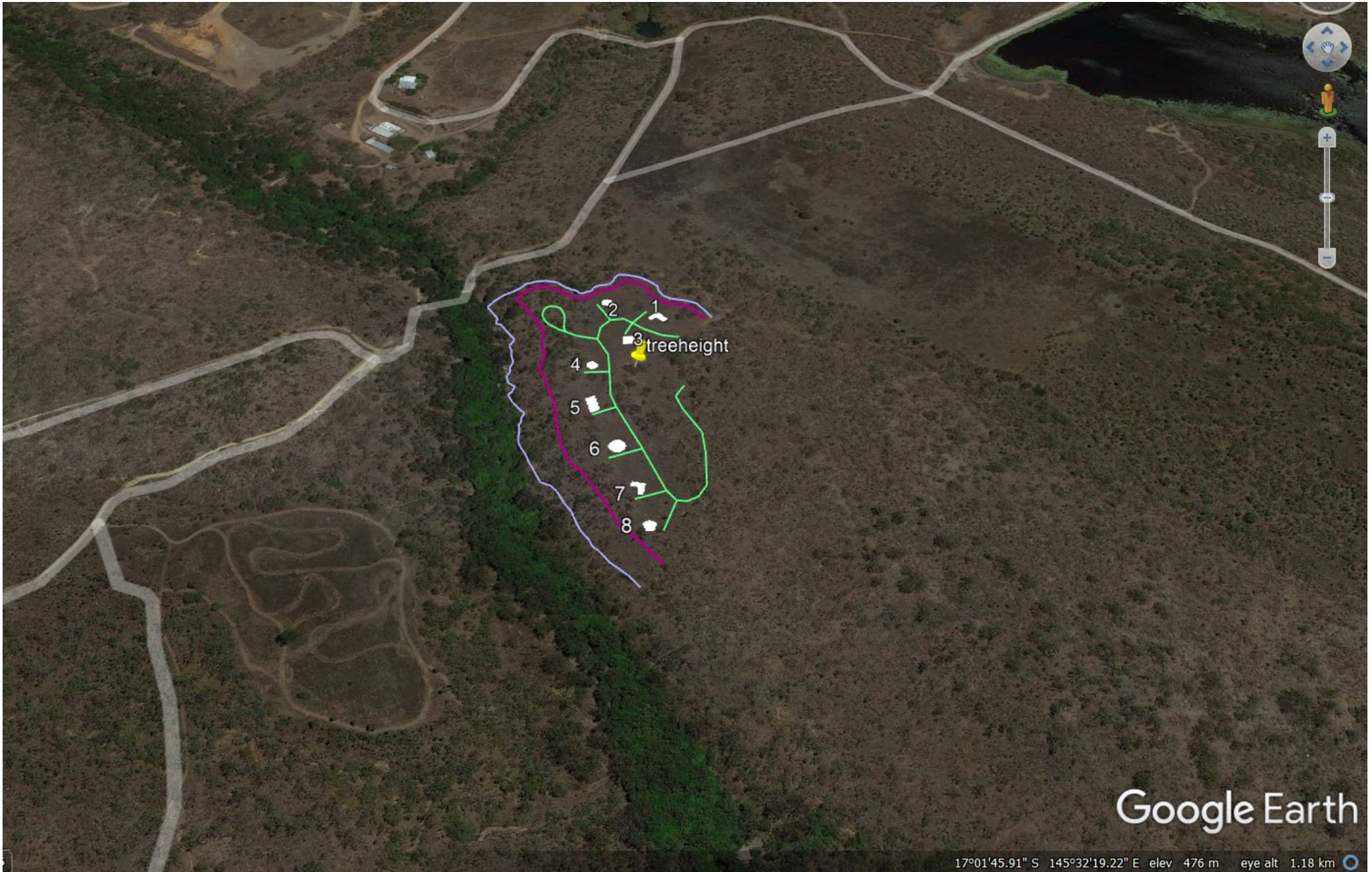
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Manager's
treeheight-manager's
treeheight-manager-shed

Google Earth

1985

17°01'17.27" S 145°32'47.73" E elev 472 m eye alt 1.19 km



Google Earth

17°01'45.91" S 145°32'19.22" E elev 476 m eye alt 1.18 km



Emerald Creek Escape

treeheight

Function Facility

Manager's treeheight-manager's treeheight-manager-shed

Google Earth

17°01'11.26" S 145°32'28.80" E elev 494 m eye alt 1.21 km