

18 September 2023

Sophie Ballinger
Vail Resorts
Sophie.Ballinger@vailresorts.com.au

Dear Sophie,

**Re: On-Site Sewage Management for proposed Eyre T-bar café
expansion at Kosciuszko Road, Perisher – Lot 504 DP 1171964**

Background and Scope

Southeast Engineering and Environmental (Southeast) have been engaged to undertake an On-Site Sewage Management (OSSM) Plan for possible changes to the operation of the Eyre T-Bar Café at lot 504 DP 1171964 (the Site) and the inclusion of toilet facilities for café Staff, lift staff and the public at the Site.

The Site contains an existing café building with an associated kitchen and hand basins. Water supply is via a small diversion from upslope diverting water to a storage tank below the building. The Café has been operated by a private operator until the end of 2022. Vail resorts now operate the café.

The current wastewater management consists of a grease trap for kitchen waste which overflows to an absorption trench for disposal. As part of the change in operator, NSW National Parks and Wildlife Services (NPWS) have reviewed the operation of the grease trap and associated disposal trench and have outlined to Vail that it should be decommissioned.

This report addresses future wastewater management for the Eyre T-Bar Café to revert to production of takeaway meals, in addition to pre-prepared meals as well as the provision of toilet facilities for the café operators, Vail staff and the public.

The Site locality is shown in Figure 1 and the existing Site survey is shown in Appendix A.

This report contains:

- Wastewater generation estimation for the Café and potential toilet facilities;
- Recommendations on appropriate wastewater management upgrades; and
- Plans illustrating the proposed arrangement and location of wastewater management system.



Figure 1: Eyre T-Bar and Cafe location (source: SIX Maps)

Wastewater generation estimation.

Eyre T-Bar Café

In the past, the Café has produced take away food, such as hamburgers and chips to order as well as pre-prepared food, for example pre made sandwiches and hot food such as pies.

Into the future (2024 and onwards) it is expected that the Café will revert to production of takeaway food, such as burgers or other similar products. Food will continue to be served in disposable packaging.

The café includes a double sink for dishwashing as well as a single bowl handwashing sink. This will be retained (Figure 2).



Figure 2 Washing facilities, dual sink and hand washing basin

As the Cafe only provides food in disposable packaging, the only water use within the café is for dishwashing, cleanup, rinsing and handwashing. Without water metering, the following assumptions have been made to estimate water use and from that wastewater generation:

Staff: 4

Handbasin washing: 8L/min for 15s = 2L per wash. 4 Hand washes per day. = 8L/d per staff = 32L/d

Dishwashing: 18L/wash, 10 washes per day = 180L/d

Washdown: Tap running for 5 mins @ 18L/min = 90L/d

Total: 302 L/d = 53.8kL per winter season.

Toilets

A toilet is proposed at the Eyre T-Bar Café as a facility for the café staff, lift staff as well as the public. Wastewater generation estimates for the toilet are based on metered water use from the Pretty Valley café, pro-rated against lift numbers for that period and compared with lift use at Eyre T-Bar.

The Pretty Valley café does have some water use associated with the café, however, given that food production at this site is minimal with most food sold pre-prepared, all water use is assumed to be associated with the toilets, presenting a conservative estimate.

Comparison:

Pretty Valley Kiosk

- 271 kL over 6 months over the winter season (13wks) in 2017, (89 days)
- 2017 Lift numbers = 515,968 persons lifted
- Water use per lifted number = 0.53L/ person lifted.

Eyre T-Bar

- 2017 Lift numbers = 215,288 persons lifted
- Expected water use = $215,288 \times 0.53\text{L/ person lifted}$ = **113.1kL over the winter**

Total

Total wastewater generation for the Café and toilets is estimated at 53.8kL (Café) + 113.1kL (toilets) = 166.9kL over the winter season.

Storage duration and volume

Removal of collected wastewater is generally restricted to the end of the season. For the purpose of this assessment storage of 13 weeks is assumed, from the June long weekend, through to the end of the first week of September.

If necessary, Vail could clear the road to allow for a pump out truck to access the Site during the season, if emptying was required. This could take up to 3 to 4 days to organise depending on the weather.

Minimum storage volume requirement: 166.9kL

Treatment and Collection

The existing grease trap will be replaced with a new grease trap located closer to the existing building and at a higher level to allow for connection to septic and collection wells. A 1500L grease trap is recommended for this sized operation.

A septic tank (minimum 3500L as per AS1547:2012) is recommended for primary treatment and some removal of solids prior to transfer of wastewater to collection wells. Be aware that the sewer line will need to traverse the existing high voltage electricity line, depth of which is currently unknown.

Wastewater will drain via gravity from the septic tank to collection tanks located adjacent to the access track to Eyre T-Bar. A total collection volume of 180kL is recommended to cover the 166.9kL estimate, consisting of three 60kL concrete storage tanks, which provides about an 8% contingency. The collection tanks shall be installed at the same level and hydraulically connected at the base to act as a single storage.

The collection wells shall be equipped with an indicator for wastewater level and a warning alarm for high wastewater levels, at 80% full. Communication should also be installed to automatically notify Vail operations.

The collection wells will be connected to a pump-out stand with a 'Kamlock' (or similar) cover to enable pump-out by a qualified contractor.

A water meter should be installed immediately downstream of the supply pump in the basement of the building to allow for accurate monitoring of water use and wastewater generation within the building and future toilets.

Refer to Appendix B for conceptual design drawings.

Summary

Wastewater generation for the future Eyre T-bar Café and toilets over the winter season is estimated at **53.8kL for the Café and 113.1kL for the toilets**. The recommended wastewater storage volume is 180kL.

The system will consist of the following:

- New 1500L grease trap
- 3550L septic tank
- Three 60kL concrete collection tanks (total 180kL)
- Sewer pipework to connect the system
- Water level and alarm system for the collection tanks including notification to Vail operations
- Accessible pump-out stand with a 'Kamlock' (or similar) cover to enable pump-out by a qualified contractor

Refer to Appendix B for conceptual design drawings.

Please contact the undersigned if you have any questions.

Yours sincerely,



Lachlan Bain (BEng, MEnvMgt)

Appendix A – Existing survey



22
W6233_1604

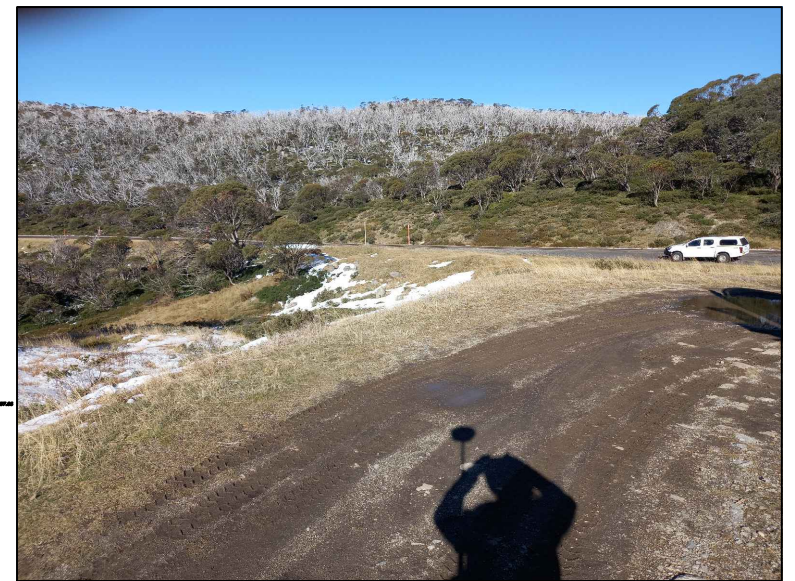
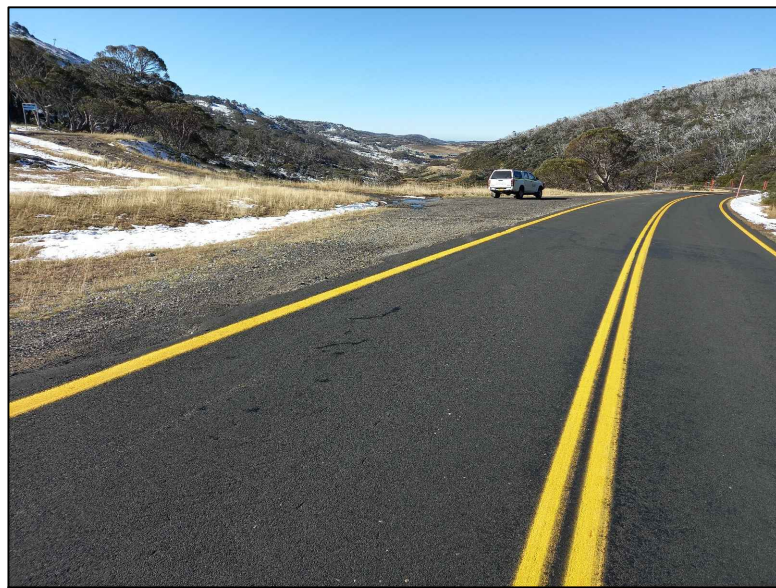
EYRE T-BAR LIFT

504
DP1171964

DECK

KIOSK

SEPTIC



LEGEND

- BOUNDARY
- MAJOR CONTOUR
- MINOR CONTOUR
- BOTTOM OF BANK
- TOP OF BANK
- EDGE OF GRAVEL
- GRAVEL AREA
- ROCK

GENERAL NOTES

- ALL AREAS & DIMENSIONS ARE IN METRES AND ARE SUBJECT TO FINAL SURVEY.
- SERVICES OTHER THAN AS SHOWN MAY ALSO EXIST AND THEIR POSITION SHOULD BE VERIFIED BY THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORKS.
- UNDERGROUND SERVICES MUST BE INVESTIGATED THROUGH DIAL BEFORE YOU DIG 1100 AND COUNTRY ENERGY BEFORE ANY EXCAVATION WORKS ARE UNDERTAKEN. POSITION OF DETAIL IS APPROXIMATE.
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106

GRAVEL AREA

SEALED ROAD

KOSCIUSZKO ROAD

DP1067727



0 10 20 30
METRES

A	CLIENT ISSUE	RJ	17/05/23
No.	DESCRIPTION	CHK	DATE

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Surveyed PB	Drafted RJ	Checked PB
REGISTERED SURVEYOR		
Scale @A1: N/A @A3: 1:500	Paper Size A3	
DO NOT SCALE		

Client	PERISHER SKI RESORT		
Title	PLAN SHOWING ACCESS AREA TO EYRE T-BAR PERISHER VALLEY KOSCIUSZKO NATIONAL PARK		
CAD file:	5720 CD 01 A	JOB REF. No:	5720
Survey Date:	16/05/2023		

HEIGHT DATUM: AHD		LGA: SNOWY MONARO REGIONAL	
AZIMUTH: MGA		Parish: KOSCIUSZKO	
CONTOUR INTERVAL: 0.25 m		County: WALLACE	
DA #:		Revision	Sheet No.
		A	01/02



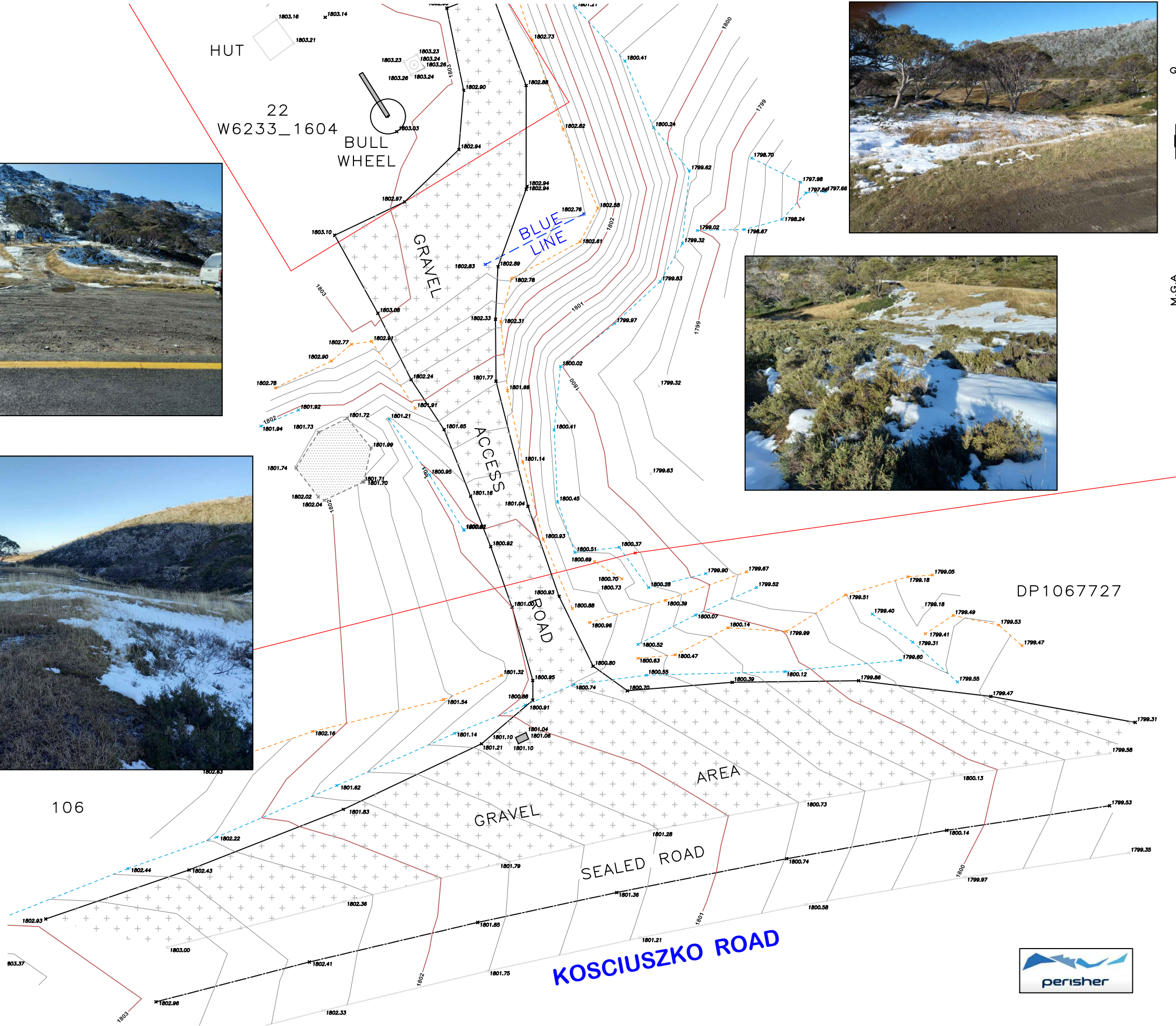


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LEGEND

	BOUNDARY
	MAJOR CONTOUR
	MINOR CONTOUR
	BOTTOM OF BANK
	TOP OF BANK
	EDGE OF GRAVEL
	GRAVEL AREA
	ROCK



G.N.
M.G.A.

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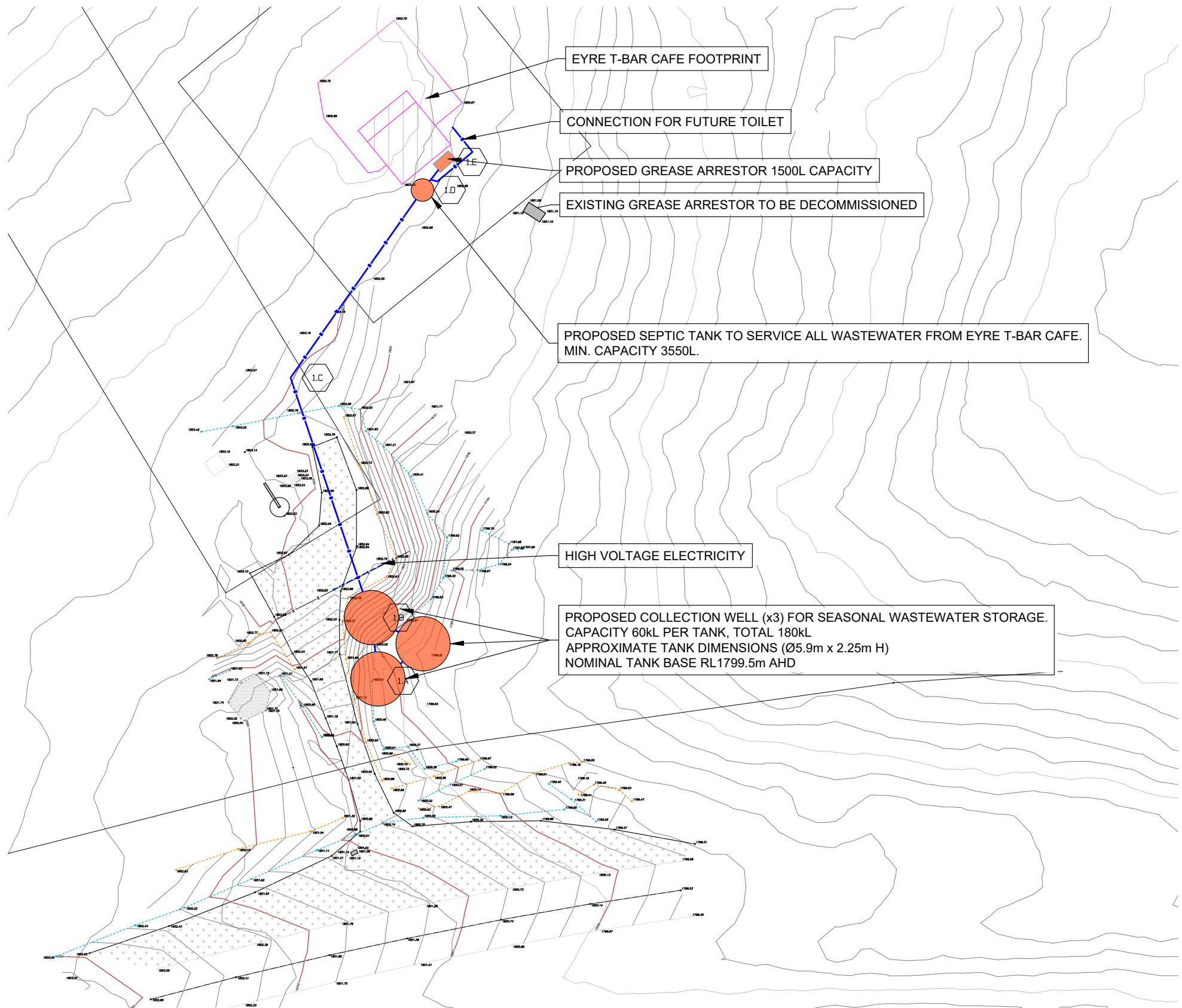


Surveyed PB	Drafted RJ	Checked PB	Client PERISHER SKI RESORT	HEIGHT DATUM: AHD	LGA: SNOWY MONARO REGIONAL
REGISTERED SURVEYOR Scale @A1: N/A @A3: 1:250 DO NOT SCALE			Title PLAN SHOWING ACCESS AREA TO EYRE T-BAR PERISHER VALLEY KOSCIUSZKO NATIONAL PARK	AZIMUTH: MGA	Parish: KOSCIUSZKO
				CONTOUR INTERVAL: 0.25 m	County: WALLACE
			CAD file: 5720_CD_01_A	JOB REF. No: 5720	Survey Date: 16/05/2023
				DA #: 	Revision A
					Sheet No. 02/02

**Appendix B – Proposed wastewater management upgrade
arrangement conceptual design drawings.**

Eyre T-bar Cafe Expansion, Perisher - Wastewater Management

DRAFT PLAN



WASTEWATER CALCULATIONS

Calculations

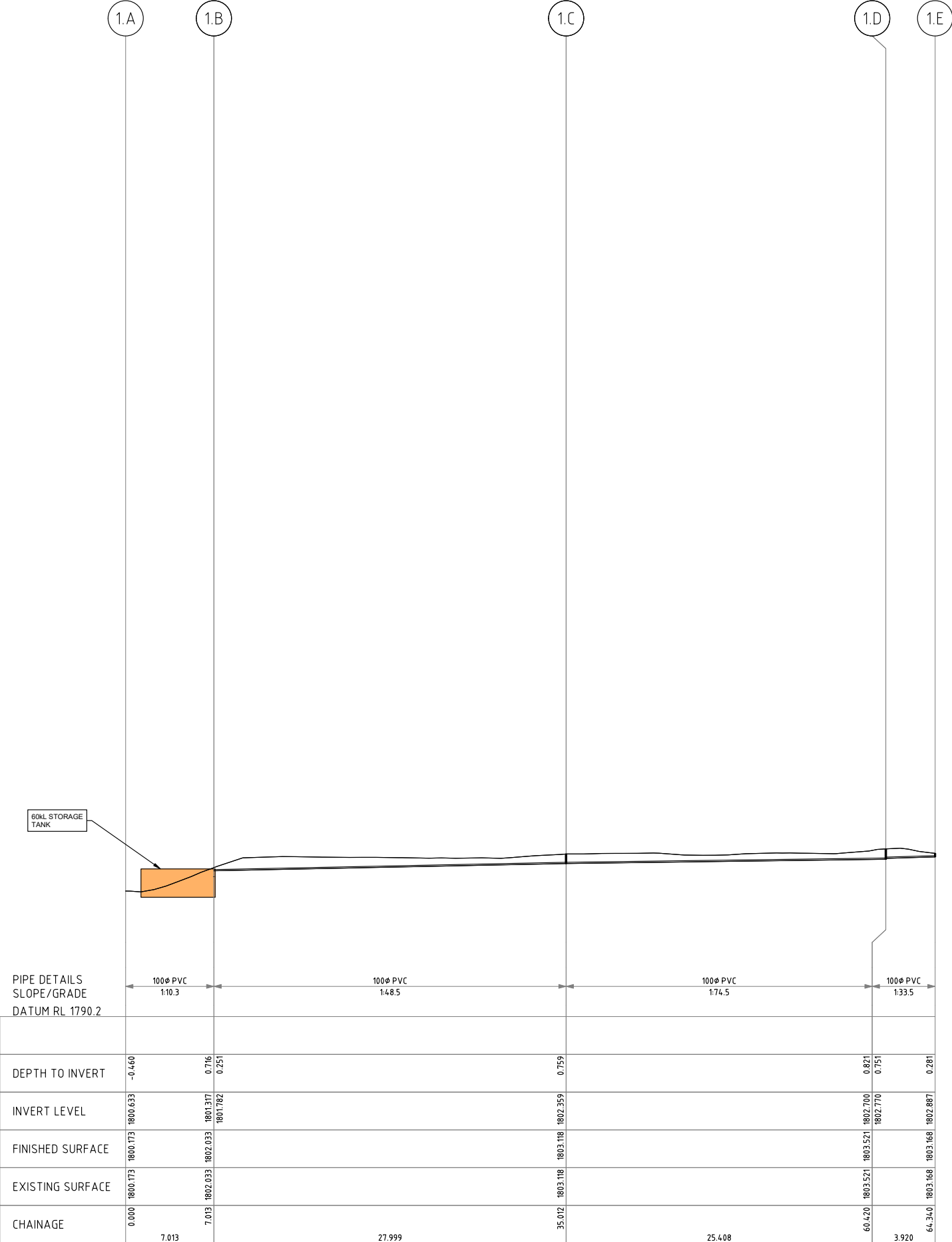
Eyre Tbar Café over season

Toilets water use estimate	113.1	kL
Kitchen water use estimate	53.8	kL
Total	166.9	kL



REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
A	UPDATE TO INCLUDE PUBLIC TOILETS	LB	18/09/23				





DRAINAGE LONGITUDINAL SECTION FOR LINE 1
SCALES: HORIZONTAL 1:200 VERTICAL 1:200



REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
A	UPDATE TO INCLUDE PUBLIC TOILETS	LB	18/09/23				