Site Environmental Management Plan (SEMP)

Merritts Mountain House Restaurant Services Upgrade

Thredbo Alpine Resort
Kosciuszko National Park, NSW

March 2022

Merritts Mountain House Restaurant Services Upgrade

Site Environmental Management Plan (SEMP)

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Document Control

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1 Introduction

This Site Environmental Management Plan (SEMP) has been prepared for the Merritts Mountain House Restaurant Services Upgrade (the Project).

The Project is located within Thredbo Alpine Resort, approximately 30 kilometres (km) south-west of Jindabyne, New South Wales.

The works comprise:

- services upgrade (new water supply pipe and sewer) from Merritts Mountain House Restaurant to existing UV treatment building (predominately within existing access track);
- extension of existing UV water treatment building to house new pump equipment;
- new power supply to new pump house (route to following existing conduit servicing existing UV plant).

1.1 Purpose

This SEMP has been developed to outline how construction processes for the Project are to be managed in order to maintain and protect the environmental values of the Project site and surrounds.

1.2 Objective

The objectives of this SEMP are to:

- provide mitigation measures to minimise the potential for environmental harm and/or environmental nuisance;
- provide guidance for the development of detailed construction environmental management plans;
- ensure all project personnel understand individual roles and responsibilities;
- provide corrective actions to be implemented in the event of environmental harm and/or environmental nuisance; and
- ensure project personnel understand incident and emergency response procedures.

1.3 Applicable Legislation

The Project will be carried out in accordance with the applicable legislative requirements outlined in the following Acts and subordinate legislation:

- *Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)*;
- *Biodiversity Conservation Act 2016*;
- *Environmental Planning and Assessment Act 1979*;
- *Environmentally Hazardous Chemicals Act 1985*;
- *National Parks and Wildlife Act 1974)*;
- *Protection of the Environment Operations Act 1997*;
- *Soil Conservation Act 1938;*
- *Waste Avoidance and Resource Recovery Act 2001;*
- *Water Management Act 2000;* and
- *Work Health and Safety Act 2011.*

2 Project Description

2.1 Project Location

The new services commence at Merritts Mountain House Restaurant, located at the bottom of Merritts ski area and Cruiser Chairlift and the top of the Merritts Gondola. The services predominately follow an existing disturbed corridor / access track to the existing UV treatment building.

The new power supply from the existing UV water treatment building follows an existing access corridor / existing conduit servicing the existing UV plant and connects to an existing pillar (nearby Lot 607/DP 1118588 – Rockpool Lodge, 30 Mountain Drive, Thredbo NSW) (refer **Appendix B**).

2.2 Construction Detail and Activities

A summary of the construction program and activities is provided in **Table 1**.

Table 1: Construction Detail and Activities

Aspect	Details
Site Access	The Project site is accessible off Friday Drive, via the summer Mountain access road and the Merritts access road which provides vehicle access from the Friday Flat base area (refer **Appendix B**).
Construction Program and Activities	The proposed construction program will comprise the following: • establishment of site e.g. marking out proposed pipework route, erection of signage etc.; • vegetation clearing (approx. 100m^2); • establishment of erosion and sediment controls (where required); • excavation and trenching to prepare ground for pipe laying (from Merritts Mountain House to existing UV treatment building) and installation of new electricity cable and conduits (from existing UV treatment building to existing Essential Energy LV pillar nearby Woodridge Lot 607); • laying of new pipes; • backfilling and compaction of trench; • extension of existing UV plant, including minor vegetation clearing, installation of new metal roof, wall cladding and solid core doorset; and • rehabilitation of the disturbed area.
Machinery, Plant and Equipment	Construction vehicles and plant will include (but not limited to): • 4WD vehicles and utilities; • Excavator; and • Delivery trucks.
Stockpile Sites	The main stockpile locations are identified in **Appendix B**. Access to these locations will be restricted to KT staff and contractors. Temporary stockpiles may be required within the construction corridor to effectively manage materials during the works. Where required, these sites will be located on disturbed areas and avoid native vegetation. Soil stockpiles will be managed in accordance with the *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park* (OEH 2017) (Soil Stockpile Guidelines) and ESCP (**Appendix C**).
Site Facilities and Temporary Structures	Existing amenities at Merritts Mountain House Restaurant will be available for construction staff. There will be no compound or temporary structures within the construction corridor.
Project Timing	The anticipated timing for the commencement of construction works is October 2022. Project completion is anticipated by the end of November 2022.
Working Hours	The working hours for construction will be stipulated in the conditions of consent.

3 Environmental Management

3.1 Environmental Management Structure and Responsibility

3.1.1 Project Team Structure

The Project team structure is provided in **Figure 1**.

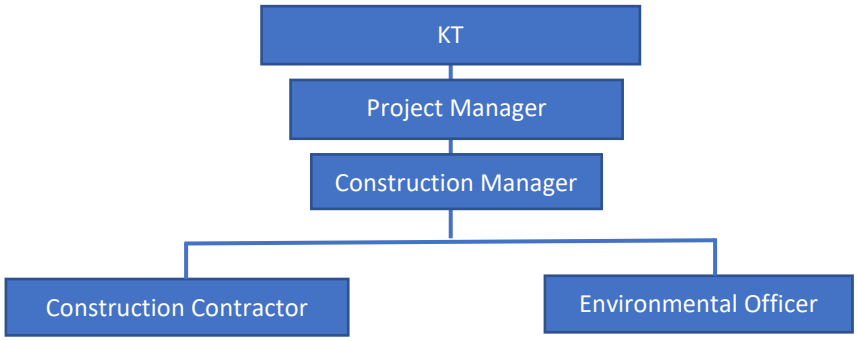

Figure 1: Project Team Structure

3.1.2 Roles and Responsibilities

The roles and responsibilities for on-site activities and ensuring that management measures outlined in this SEMP are being implemented during construction are outlined in **Table 2**.

Table 2: Roles and Responsibilities

Role	Responsibilities
Project Manager	• ensure the SEMP is made available, communicated, maintained and understood by all Project staff; • responsible for the overall management of the construction and operation of the Project; • ensure the SEMP is updated with applicable conditions of approval following the provision of Development Consent from DPE; • ensure that the requirements of the SEMP and sub-plans have been addressed in all contractor environmental management documentation; • review of incidents, non-conformances and non-compliance; and • ensuring Project personnel and contractors are adequately trained and qualified to fulfil their roles.
Construction Manager	• implement and maintain the SEMP; • ensure all Project personnel comply with the requirements of the SEMP; • report any incidents, non-conformances to the Project Manager; and • responsible for managing the implementation of corrective actions on-site.
Environmental Officer	• oversee all works which are part of the Project on behalf of KT; • ensure compliance with all environmental protection measures detailed in the SEMP, supporting management plans and conditions of approval; and • ensure all environmental controls are in place and adequately functioning during construction; and • conduct construction inspections and complete reporting requirements e.g. progress reports, environmental incidents, non-compliance, corrective action and auditing.
Construction Contractor	• comply with SEMP and legislative requirements; and • construction contractor to develop and implement management plans in accordance with this SEMP, conditions of approval and contractual obligations.
All Personnel	• comply with requirements of this SEMP; • report any actual or potential environmental incidents to the Construction Manager immediately; • identify and report non-conforming or potentially hazardous work practices, equipment, machinery or products; • only perform tasks for which they are trained and competent; • assist with environmental incident investigations and applying corrective actions; and • ensure all machinery, plant and equipment are in good working order and condition prior to use.

3.2 Key Contacts

Key contacts for the Project are provided in **Table 3**. Prior to commencement of works, contact details (name and contact number) for key Project personnel will be provided.

Table 3: Key Project Personnel Contact Details

Company / Agency	Role / Reason	Name	Contact
Key Project Personnel			
EVENT	Project Manager	TBC	TBC
KT	Environmental Officer	TBC	TBC
TBC	Construction Manager	TBC	TBC
TBC	Construction Contractor	TBC	TBC
Government Agency Contacts			
DPE (Alpine Resorts Team)	Development approval and compliance	-	(02) 6456 1733
National Parks and Wildlife Service (NPWS)	Flora, fauna, archaeology	-	(02) 6450 5600
Environment Protection Agency (EPA)	Water, noise, air pollution and regulation	-	131 555
NSW Soil Conservation Service	Soil erosion and sediment control	-	02 9842 8300
Thredbo Village Services			
Thredbo Medical Centre	General medical attention	-	(02) 6457 6254
Fire and Rescue Thredbo, NSW	Incident / emergency	-	(02) 6457 6144
Emergency Contacts			
NSW Police	In case of fire, medical or police emergency	-	000
NSW Fire and Rescue		-	
NSW Ambulance		-	

3.3 Communication

Consultation with relevant stakeholders has been undertaken to inform the development of this SEMP and ensure appropriate controls are implemented on-site. During construction, consultation activities will be undertaken with internal and external stakeholders. These activities will include (but not limited to): site inductions, pre-start meetings, toolbox talks, face-to-face meetings, phone and email correspondence.

3.3.1 Notification Protocols

A summary of the key notification protocols is provided in **Table 4.** Notification requirements will be updated as required.

Table 4: Regulatory Agency Notification Protocols

Party to Notify	What to Notify	When to Notify	Responsibility to Notify Regulatory Agency
DPE	Commencement of construction	DPE will be notified in writing at least 48 hours prior to the commencement.	Project Manager
NPWS	Details of any material suspected of being a European or Aboriginal culturally significant site, relic or artefact.	Immediately upon discovery of any archaeological/culturally significant site or relic that are encountered. NSW Police to also be notified immediately upon discovery of human remains.	Project Manager / Construction Manager

NSW Environmental Protection Agency	Details of pollution incident – who, what, when, where, how, any other supporting information and evidence (e.g. photos)	Immediately upon identification of pollution incident causing or threatening material harm to the environment, in accordance with ***KT's Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***.	KT Environmental Manager / Construction Manager

3.4 Competence and Training

All Project staff will be made aware of the site-specific environmental controls through a site induction, and pre-start meetings / toolbox talks prior to the commencement of construction.

The site induction will cover the following key aspects:

- roles and responsibilities;
- overview of environmental risks and specific locations of environmental and/or cultural heritage significance;
- the scope of legislative requirements and other licences and approvals;
- communication and notification requirements e.g. procedures for notifying and reporting incidents and complaints;
- environmental management and controls stipulated in this SEMP;
- workplace health and safety issues;
- emergency preparedness and response; and
- procedures for notifying and reporting incidents and complaints.

3.5 Environmental Incident and Emergency Response

All Project personnel are required to follow KT's ***Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***. The procedure will be available on-site and all Project staff will be trained on their implementation through the site induction. The procedure classifies examples of emergencies and incidents and provides specific procedures for response to such events, such as:

- serious injuries requirement urgent medical help;
- there are threats to property or life;
- criminal activity e.g. you have witnessed a serious crime or accident;
- sewer or water service breaks;
- bushfire, building fire, spot fire on-site;
- electricity service faults;
- leaking gas;
- fires and explosions; and
- release of pollution e.g. release of sediment into watercourse, chemical spill.

The procedure also outlines general site management principles, incident reporting and notification requirements and provides an emergency contacts list.

In the event of an environmental incident, emergency or near-miss, the following steps should be taken:

1) **STOP** works in the area and if safe to do so ensure the safety of personnel within the vicinity;
2) **NOTIFY** relevant persons e.g. emergency services or Construction Manager;
3) **ISOLATE** the risk or hazard e.g. turn off machinery/plant, implement immediate site controls, set up exclusion zone; and
4) **REPORT** and notify relevant persons (e.g. Project Manager, regulatory agencies).

The construction contractor must prepare an emergency and incident response procedure. The construction contractor will be responsible for responding to any environmental emergency caused by any action (or inaction) of the contractor's staff, including notification requirements to external parties such as EPA and Fire, Fire and Rescue NSW.

Environmental incident and near-miss reporting requirements are detailed in **Section 7.1**.

3.6 Communicable Diseases

To minimise the risks associated with the potential spread of communicable disease such as Covid-19, the following mitigations are to be implemented:

- implementation of hygiene protocols to minimise the risk of potential spread of communicable disease during construction works;
- following the current health directions from the NSW Government at the time. Given the changing climate of NSW Government health directions, the latest heath directions should be communicated via pre-start meetings or similar; and
- all construction staff to be made aware of hygiene protocols during the site induction and the Construction Contractor is responsible for implementing appropriate controls in line with current health directions from the NSW Government.

4 Risk Assessment

To ensure that potential environmental risks are identified and managed, an environmental risk review has been included in **Table 5**. A risk matrix (**Appendix A**) was used to consider the likelihood and consequence of impacts identified in the SEE (Dabyne 2022).

Table 5: Environmental Risk Assessment

Aspect	Activity / Project Phase	Potential Impact	Inherent Risk			Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Reduction in fauna habitat as a result vegetation clearing and earthworks	Vegetation clearing; earthworks	Removal of 0.01 ha of native vegetation, with a very small amount of known or potential habitat for Broad-toothed Rat, Gang-gang Cockatoo, Olive Whistler, Pink Robin and Flame Robin. ELA (2022) determined the impact to be relatively minor. The effects of the Development on habitat connectivity will be minor (ELA 2022).	4	1	Low (4)	Flora and Fauna Management (**Section 5.3**)	3	1	Low (3)
Injury/death to fauna as a result of vegetation clearing and earthworks	Vegetation clearing; earthworks	Loss in population of fauna.	3	1	Low (3)	Flora and Fauna Management (**Section 5.3**)	2	1	Low (2)
Release of sediments and soils through disturbance of land	Earthworks; stockpiling; trenching	Loss of topsoil, reduction in water quality from the release of sediment laden water.	3	3	Mod (9)	Soil and Water Management (**Section 5.2**)	2	3	Mod (6)
Generation of dust through movement of vehicles and plant	Removal of topsoil, stockpiling, excavating and backfilling.	Tourist accommodation (Woodridge lots) located within 50 m of the new power upgrade works (refer **Appendix B**). Potential nuisance or health impacts from the release of dust on land users from the works are considered to be low.	2	2	Low (4)	Air Quality Management (**Section 5.7**)	2	1	Low (2)
Leak or spill of fuel or oil from fuel storage, plant and vehicles	Earthworks; removal / installation of infrastructure.	Land and water contamination caused by the release of hydrocarbons.	2	3	Mod (6)	Fuels, Chemicals and Hazardous Substance Management (**Section 5.8**)	2	2	Low (4)
Release of noise and/or vibrations through use of heavy/loud plant or equipment	Earthworks; construction activities	Tourist accommodation (Woodridge lots) located within 50 m of the new power upgrade works (refer **Appendix B**). Noise and/or vibration nuisance resulting from the use of construction machinery and equipment is considered low.	2	2	Low (4)	Noise and Vibration Management (**Section 5.6**)	2	1	Low (2)

Transport and loading/unloading of goods and materials and equipment and plant operation	All Project phases	Potential noise impacts on tourist accommodation (Woodridge lots) is considered low.	2	2	Low (4)	Noise and Vibration Management (**Section 5.6**)			Low (2)
Introduction and/or proliferation of weed/pest species in vehicles, plant, shoes and materials	All Project phases	Loss of biodiversity.	2	2	Low (4)	Biosecurity Management (**Section 5.4**)	2	1	Low (2)
Excavation works causing damage to unexpected archaeological finds or Aboriginal objects/sites	Earthworks	Past Traces (2022) concluded no heritage sites and no areas of Potential Archaeological Deposit were identified within the project area. No areas of potential archaeological deposits or heritage sites were identified during the field survey and the potential for Aboriginal or historical heritage objects within the development area was assessed as low.	2	2	Low (4)	Cultural Heritage Management (**Section 5.9**)	2	1	Low (2)
Storage and disposal of waste	All Project phases	Increase in pest numbers; impacts to road users and/or the environment from vehicles with unsecured loads.	3	1	Low (3)	Waste Management (**Section 5.5**)	2	1	Low (2)
Construction vehicles and plants utilising existing road network	All Project phases	Inconvenience to existing transport networks/potential traffic impacts from the works are considered to be low.	3	1	Low (3)	Traffic and Transport Management (**Section 5.10**)	2	1	Low (2)
Rehabilitation of disturbed areas	Rehabilitation	Failure of rehabilitation and stabilisation works resulting in increased erosion.	3	2	Mod (6)	Flora and Fauna Management (**Section 5.3**); Soil and Water Management (**Section 5.2**)	2	2	Low (4)

5 Mitigation and Management Measures

To mitigate and manage potential Project impacts identified in the risk review (**Table 6**), the following environmental management activities and controls will be implemented.

5.1 General

The following measures will be implemented:

- ensure works are conducted by suitably qualified and trained personnel;
- ensure all approvals, licences and permits have been obtained and available on site or other suitable location so that they are easily assessible by all construction staff;
- ensure all site environmental management controls relevant to that stage of work are implemented in accordance with the approved plans and conditions of consent;
- prior to commencement of works, the construction corridor will be temporarily fenced, roped or flagged to clearly delineate the construction area and no-go zones;
- site access to be restricted to authorised personnel;
- plant and equipment to be removed off-site following construction completion; and
- maintain copies of incident and complaints register, inspection and monitoring reports.

5.2 Soil and Water

	Soil and Water
Objective	Minimise potential impacts to receiving water sources. Reduce the potential for erosion and sediment moving offsite.
Mitigation Measures	**General / Erosion and Sediment Control Principles** • site access points will be appropriately managed to minimise the risk of sediment being tracked onto sealed, public roadways; • drainage, erosion and sediment controls (**Appendix C**) to be designed and installed in accordance with *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition* (Landcom 2004); and • all erosion and sediment control measures are to be checked regularly to ensure they remain in good working order at all times (e.g. prior to forecast rain, daily during extended periods of rainfall and after significant rainfall events); • appropriate sediment control measures should be implemented prior to any construction work for the proposal and retained in place until exposed areas of soil or vegetation are stabilised and/or revegetated (ELA 2022); • sediment control measures are to have particular regard to the prevention of any sedimentation of watercourses or vegetation communities adjoining the study area (ELA 2022); • erosion protection measures must be maintained to prevent concentrated flows (e.g. for the access track, this has been achieved with regularly spaced berms on the access track to direct flows across the track and downslope of the road embankment via corrugated open channel) (AssetGeoEnviro 2022); and • where erosion does occur, it should be promptly repaired (AssetGeoEnviro 2022). **Excavations and Trenching** • ensure trench depths and widths are the minimum necessary; • excavation for the UV building extension may be cut vertically up to maximum 1.5 m depth (AssetGeoEnviro 2022); • excavation sides may be cut vertically for the trenches up to a maximum 1 m depth (AssetGeoEnviro 2022); • leave excavations open for the minimum practical time; • the maximum length of pipeline to remain open overnight is approximately 100 metres (m); • divert surface water away from trench openings; • backfill to be placed at equivalent compaction of the surrounding soil with an excavator to minimise possibility of soil subsidence; and

	• where trenches are left open overnight, egress points for fauna (e.g. timber ramps) will be installed. **Works within Merritts Creek Riparian Corridor** • appropriate controls to be installed prior to works nearby the pedestrian bridge over Merritts Creek; • following completion of trench works adjacent to stairs (leading to bridge), the access track stairs are to be reinstalled; and • mulch should be used rehabilitate and stabilise the trench. Coir logs (or similar) may also be required to help retain mulch on the slope following completion of works. **Soil and Stockpile Management** • all stockpiles will be constructed and managed in accordance with *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park* (OEH 2017); • Any excess excavated material will be removed from site and transported to the designated soil stockpiles sites identified in **Appendix B**; and • temporary stockpile sites within the construction corridor will adhere to the following criteria (Landcom 2004; OEH 2007): – not exceed 2 m in height, have a slope <50% (26°) – be at least 2 m from vegetation, concentrated water flows, roads, publicly accessible areas or hazardous areas – avoid impacts to native vegetation and be located on disturbed areas – located directly adjacent to the works – located on relatively flat ground, where possible – in areas with sufficient room to accommodate the volume of material being stockpiled – be contained by appropriate ESCs. **Rehabilitation** • all exposed areas shall be progressively stabilised/rehabilitated; • sections of pipeline through disturbed terrain should be vegetated over after construction to aid with erosion control (AssetGeoEnviro 2022); • only weed-free or natural thatch/litter should be used in sediment control activities (ELA 2022); • all ESC measures will remain in place until all exposed areas of soil are stabilised and/or revegetated; and • all rehabilitation should be undertaken in accordance with the *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (DECC 2007).
Performance Criteria	No significant sediment deposition observed leaving the site.
Corrective Actions	If sediment is observed leaving the site, identify the source and amend the ESCs on-site to ensure appropriate controls are in place. If required, additional ESCs to be installed.

5.3 Flora and Fauna

The Ecological Assessment (ELA 2022) concluded the Development will not result in any substantial adverse impacts on native vegetation communities or associated fauna habitats, nor will there be any impacts on flora species of conservation significance, important fauna habitats, habitat connectivity or any other biodiversity values of conservation significance.

Flora and Fauna Management	
Objective	Minimise potential impacts to native flora. Minimise potential impacts to native fauna, their breeding places and habitat. Minimise the introduction or proliferation of invasive species. Rehabilitate the site as soon as possible following completion of works to restore the habitat. Reduce the risk of introducing invasive pest species.
Mitigation Measures	**Vegetation and habitat management** • all disturbance should be kept to the minimum required to achieve the Development (ELA 2022); • the proposed works should be constructed and implemented in accordance with best practice design standards to ensure that there are no adverse modifications to the hydrological environment that may impact on surrounding vegetation and associated habitats (ELA 2022);

	• appropriate safeguards should be in place during the proposed works to limit the potential for invasive plants or pathogens, chemicals or any other pollutants to enter the environment in association with the proposed development (ELA 2022); • the construction works will be confined to the approved construction corridor; • ensure equipment and construction materials are stored on previously disturbed areas to avoid impacts to native vegetation; • maintain a clean and tidy work area to ensure animals are not attracted to the site, including provision of covered bins during proposed works; • all disturbed areas to be progressively stabilised and/or revegetated in accordance with the Rehabilitation Plan so that no areas remain exposed if works are completed in that area; and • disturbance areas are to be rehabilitated immediately following the completion of works. **Fauna** • reasonable and practicable native fauna management measures will be implemented during construction to avoid environmental harm and nuisance to native fauna, known habitats and breeding places; and • prior to the commencement of the proposed works, a wombat management plan should be prepared to manage impacts on the active wombat burrow that was detected between the UV building and Merritts Creek (within the existing access track) (ELA 2022).  ***Active wombat burrow between the existing UV building and Merritts Creek (Source: ELA 2022)*** **Biosecurity** • prior to the commencement of construction works, all weed species identified within the construction corridor will be treated in accordance with best practice methods to ensure these weeks are not spread further within the site or throughout KNP; • project machinery and vehicles to arrive/depart from KNP and the Project site in a clean condition, free of mud and vegetative propagules and pathogens; • all vehicles and machinery entering Thredbo must adhere to the ***Standard Operating Procedure: Use and Maintenance of Wash Down Bay, March 2019 (KT055)*** which requires all vehicles and machinery to utilise the weed wash-down bay prior to entering site to ensure no new weed seeds are introduced to the site and KNP; • machinery to be regularly maintained and manoeuvred to prevent the spread of weeds and pathogens; • storage of plant and machinery is to be restricted to the designated disturbed areas within the construction corridor; and • follow up weed control to be carried out if deemed necessary.
Performance Criteria	• no death or injury to fauna as a result of on-site activities; • no disturbance outside the approval disturbance area; and • no introduction of invasive species as a result of construction activities.
Corrective Actions	• review and implement suitable strategies to dissuade fauna from coming to site; • contact NPWS / LAOKO if injured fauna is identified as a result of site activities; and • review existing biosecurity procedures (e.g. clean down procedure) and implement additional controls if required.

5.4 Waste Management

The Project will generate the following waste streams:

- general solid waste (putrescible) – waste from litter bins, food waste; and
- general solid waste (non-putrescible) –plastic, paper, carboard, construction waste.

The following waste receptacles will be provided for the storage and disposal of waste associated with the construction of the Project:

- general litter bins for waste such as food waste and non-recyclable plastic;
- recycling bins for waste such as carboard packaging, paper, recyclable plastic;
- skip bins; and
- KT's waste transfer facility (materials to be segregated for re-use, recycling etc.).

Excess spoil from excavations will be taken off-site and placed within the resort's existing stockpile area located at the carpark adjacent to the Thredbo Waste Transfer Station (see **Appendix B**) for re-use within the resort.

Waste Management	
Objective	Minimise construction waste as much as practicable. Reduce the impact of waste on-site and beyond the site boundary.
Mitigation Measures	• all waste will be managed and disposed of in accordance with the KT's waste management procedures; • where possible, construction materials will be salvaged for reuse to divert waste from landfill; • no burning or burying of waste on-site; • all waste will be separated into waste streams and contained within appropriate receptacles and/or disposed of in accordance with the EPA guidelines; • all receptacles will be in good condition; • all waste that cannot be recycled shall be disposed of appropriately at a licenced landfill site; • designated waste collection areas will be established on-site with covered receptacles; • no material is to be swept or hosed into any waterways or waterbodies; • all waste transportation vehicles will be covered appropriately to ensure waste cannot spill, leak or escape onto the road or wash into stormwater drains; and • the site shall be left in a tidy state with no evidence of waste left on-site.
Performance Criteria	No litter or waste material to be released from site in an uncontrolled manner.
Corrective Actions	• investigate cause of inappropriate waste disposal/management; • review on-site waste handling facilities and implement corrective actions e.g. change in receptacle size and/or waste management signage; and • if required, implement administrative controls e.g. additional waste management training for staff.

5.5 Noise and Vibration

Noise and Vibration Management	
Objective	Minimise potential noise and vibration nuisance in the surrounding environment.
Mitigation Measures	• project staff will take reasonable and practicable management measures to avoid and mitigate environmental nuisance from noise associated with the works; • works will be undertaken during standard work hours as stipulated in the conditions of approval; • appropriate noise management strategies will be implemented for construction works and operation of plant in accordance with the Australian Standard AS 2436-2010 *Guide to noise and vibration control on construction, demolition and maintenance sites* and the *Interim Construction Noise Guideline* (DECC 2009) e.g.

	ensure plant is regularly maintained, and repair or replace equipment that becomes noisy, turn off plant that is not being used; and • all justifiable noise complaints should be investigated, managed and reported.
Performance Criteria	No construction related noise and vibration complaints received.
Corrective Actions	If complaints are received, the following steps will be taken: • investigate specific cause of complaint; • review site activities/processes and identify the source of the noise emissions; • implement immediate corrective actions e.g. swap out noisy equipment; and • if required, implement administrative controls e.g. additional staff training or change work hours to minimise noise.

5.6 Air Quality Management

Air Quality Management	
Objective	Minimise potential impacts to the existing air quality in the surrounding environment.
Mitigation Measures	• construction staff will take reasonable and practicable measure to prevent dirt and dust from affecting the amenity or the surrounding environment during construction e.g. minimise the area of soil disturbance; • plant and equipment to be maintained and operated in an efficient manner to reduce air pollution; • all vehicles carrying spoil or rubble to/from site should be covered to prevent the escape of dust or other material; • areas of exposed soil restricted as much as practicable; • when there is a risk of works creating dust nuisance, the Project site is to be watered; trucks carrying spoil/rubble/waste covered to reduce dust nuisance; and • all justifiable air quality-related complaints should be investigated, managed and reported.
Performance Criteria	No complaints received in relation to air pollution.
Corrective Actions	If complaints are received, the following steps will be taken: • investigate specific cause of complaint; • review site activities/processes and identify the source of air emissions; • implement immediate corrective actions on-site e.g. water site, replace equipment deemed to be poorly maintained; and • if required, implement administrative controls e.g. additional staff training, alter construction methods or timing for undertaking dust generating activities.

5.7 Fuels, Chemicals and Hazardous Substances

Fuels, Chemicals and Hazardous Substances Management	
Objective	Eliminate the potential for release of fuels, chemicals and hazardous substances to the environment.
Mitigation Measures	• emergency procedure developed and available on-site at all times; • all construction plant and machinery shall be properly maintained and inspected to avoid spills / leaks; • in the event on an on-site spill, construction staff will follow KT's ***Construction Site Incident and Emergency Procedures Thredbo Village, 2021/2022***; • a copy of KT's ***Thredbo Spill Kit Map (June 2019)*** will be available on-site and all Project staff will be made aware of their locations in the site induction; • hazardous substances, toxic materials or dangerous goods must not be stored or processed on-site at any time without prior approval from the DPE Secretary or nominee; and • appropriate controls must be implemented when refuelling vehicles and machinery e.g. refuelling of vehicles and machinery performed on hard-stand areas, or with temporary bunding in place, or with appropriate spill kit on-site.
Performance Criteria	No fuel, chemical or hazardous substance spills.
Corrective Actions	Corrective actions will be taken in accordance with the ***Construction Site Incident and Emergency Procedures Thredbo Village, 2021/2022,*** including: immediate spill response, implementation of any necessary control measures as directed by authorities. Where required, an investigation will be undertaken to determine the root cause.

5.8 Cultural Heritage

Cultural Heritage Management	
Objective	Minimise potential impacts on places and objects of cultural heritage significance.
Mitigation Measures	• where unexpected items of potential archaeological, built or Aboriginal cultural heritage significance are discovered, Project personnel will follow the below procedure: – **STOP:** Stop work and leave the site or item where it is. – **NOTIFY:** Notify the Project Manager. If human remains are found, the NSW Police must also be notified. NSW Heritage must be notified of the find and advice sough on the proper steps to be undertaken (Past Traces 2022). After confirmation with NSW Heritage, a heritage consultant should be engaged to undertake assessment of the find and provide appropriate management recommendations to the proponent (Past Traces 2022). – **MANAGE:** Management may involve securing the find by erecting a no-go zone. Past Traces (2022) recommends a buffer zone of 10 m should be fenced in all direction of the find and construction personnel made aware of the no-go zone. – **REPORT:** The Project Manager will complete any reporting requirements, as directed by NSW Heritage. • further archaeological assessment would be required if the proposed works extend beyond the area of the current investigation outlined in the (Past Traces 2022). This would include consultation with the RAPs for the project and may require further field surveys.
Performance Criteria	No loss of cultural heritage values.
Corrective Actions	If a suspected item/artefact of Aboriginal, built or archaeological cultural heritage significance is encountered, follow procedure above – Stop, notify, manage and report. All Project personnel to be made aware of any additional management requirements e.g. no-go zones.

5.9 Traffic and Transport

Traffic and Transport Management	
Objective	Minimise potential impacts on existing road network.
Mitigation Measures	• traffic and construction vehicle access will be managed as per regular daily operation in the resort; • all Project vehicles and machinery to adhere to speed limits and signage and stay within construction corridor; • all construction vehicles to enter/exit site via dedicated access; and • mountain bike trail and pedestrian access within the construction corridor will be managed and redirected (if required) by KT or an authorised contractor through the use of signage and exclusion from the construction corridor.
Performance Criteria	• no impacts to existing road network or users; and • no complaints in relation to traffic or vehicle operators.
Corrective Actions	If complaints are received, traffic management procedures will be reviewed and amended (if necessary).

6 Monitoring and Review

6.1 Environmental Monitoring

The Environmental Officer will conduct monitoring during all Project phases (pre-construction, during construction and post-construction) to ensure compliance with this SEMP, associated management plans and conditions of approval. The Environmental Officer will undertake weekly inspections utilising the **SEMP Weekly Inspection Report** (**Appendix D**).

The Environmental Officer will be responsible for ensuring that all erosion and sediment controls are installed in accordance with best practice and are regularly maintained and monitored by the construction contractor. The Environmental Officer will undertake inspections utilising the **Erosion and Sediment Control Inspection Report** (**Appendix D**).

6.2 SEMP Review

SEMP reviews will generally be undertaken –

- if there is a change in the scope of the Project;
- prior to commencement of construction to ensure any relevant conditions of consent and/or other approval, licence or permit requirements are incorporated;
- if there is a need to improve environmental controls to protect environmental values;
- if there is an increase or introduction of a new environmental risk or impacts; and
- at the end of a Project to allow for improvements in subsequent Projects.

7 Reporting

7.1 Weekly Environmental Reporting

The Environmental Officer will provide copies of the **SEMP Weekly Inspection Report** (**Appendix D**) to the Project Manager on a weekly basis. All records will be stored within KT's files and distributed to relevant persons / regulatory authorities as required.

7.2 Environmental Incident Reporting

All incidents and near misses will be managed in accordance with KT's ***Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***. The document provides procedures for responding to incidents and emergences, reporting and notification requirements and emergency contacts.

The following information should be recorded:

- time and date of the incident / near miss;
- a description of the incident / near miss;
- a sequence of events that led to the incident / near miss occurring;
- person/s involved in the incident / near miss (including witnesses);
- written statements from person/s involved (as applicable); and
- details of corrective actions.

The **Environmental Incident Report Form** (**Appendix D**) or similar should be completed for all environmental incidents. All parts of the form must be completed in accordance with KT's incident procedure and following the instructions within the form. The form must be signed by the person making the report and the Construction Manager/person in charge of the site.

7.3 Complaints Management

Should complaints be received from the public in relation to the Project they will be recorded using the **Complaints Form** (**Appendix D**). All records will be stored within KT's files and distributed to relevant persons / regulatory authorities as required.

7.4 Non-conformance

A non-conformance is the failure to comply with the requirements of this SEMP and supporting management plans. Non-conformances identified via site inspection or during day to day activities will be documented on the **SEMP Weekly Inspection Report** (**Appendix D**) and closed out in subsequent inspections.

7.5 Corrective Actions

Corrective actions should be prioritised on the following hierarchy of controls:

1. **elimination** – can activities and processes be eliminated to reduce the risk of reoccurrence?
2. **substitution** – Can activities be substituted with another activity of lesser risk?
3. **isolation** – can you isolate the hazard from any person exposed to it?
4. **engineering controls** – can you reduce the risk of reoccurrence through engineering changes?
5. **administrative controls** – can a change in work practices, additional training or additional checks reduce the risk?
6. **personal Protective Equipment (PPE)** – can PPE be worn to protect personnel from harm?

7.6 Document Control

All Project related documentation will be maintained within KT's and the Construction Contractor's filing system. Documents stored within the file include (but are not limited to) the following:

- copies of relevant planning approvals and documents, licences and permits;
- all completed induction forms and visitor sign-on register;
- records of routine environmental inspections; and
- records of any environmental incidents, complaints, non-conformances and no-compliances.

8 References

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Past Traces Pty Ltd 2022, Aboriginal Cultural Heritage Due Diligence Assessment Merritts Mountain House Restaurant, Thredbo – Services Upgrade. Report prepared for Event Hospitality Pty Ltd.

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9 Appendices

Appendix A Risk Matrix

Likelihood and consequence is defined as follows:

- **Likelihood**: the chance that something might happen; and
- **Consequence:** the outcome of an event which may have the potential to change the existing environmental values.

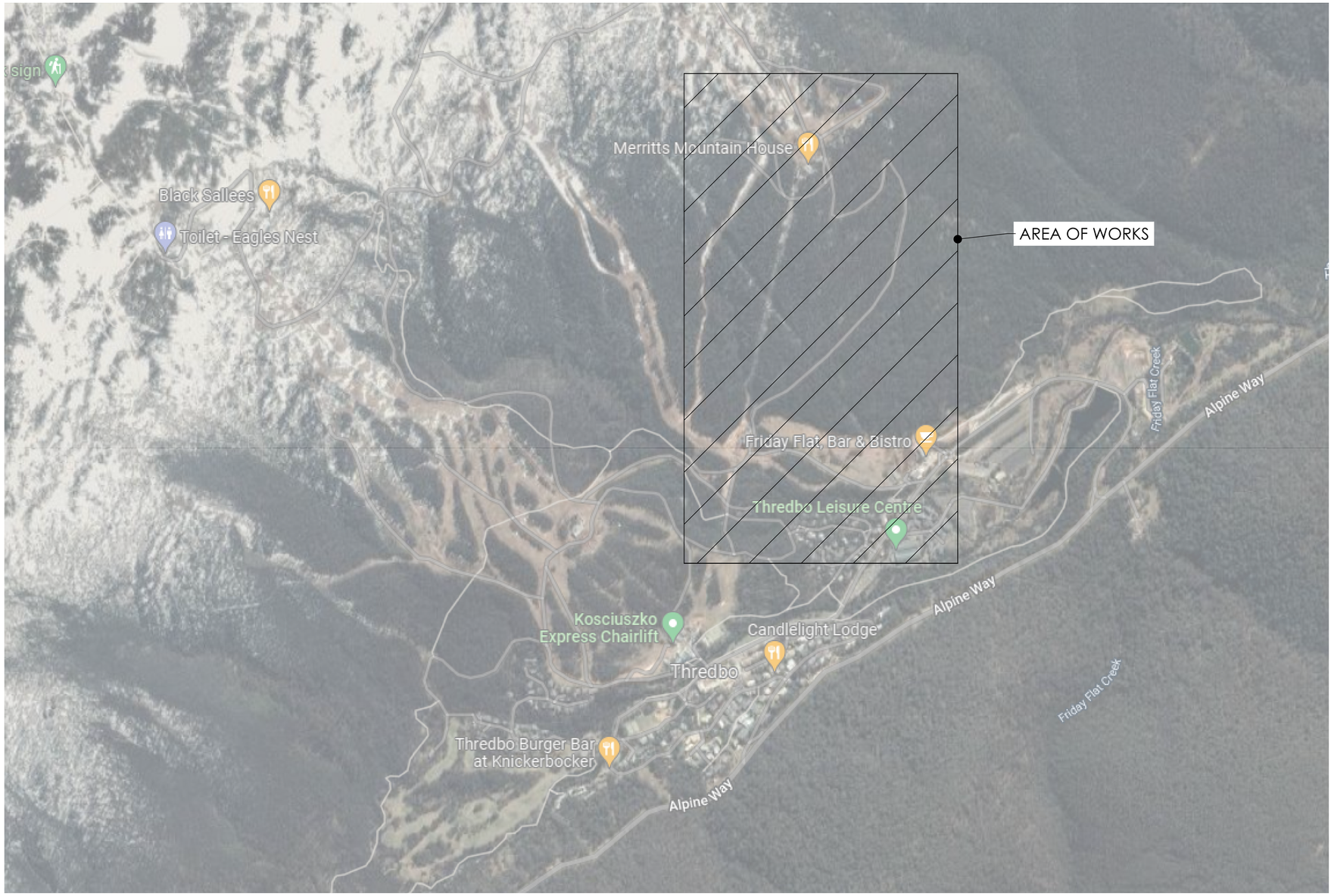
Likelihood	Consequence				
	Extreme (5)	**Major (4)**	**Moderate (3)**	**Minor (2)**	**Insignificant (1)**
Almost certain (5)	Extreme (25)	Extreme (20)	Extreme (15)	High (10)	Moderate (5)
Likely (4)	Extreme (20)	Extreme (16)	High (12)	Moderate (8)	Low (4)
Possible (3)	Extreme (15)	High (12)	Moderate (9)	Moderate (6)	Low (3)
Unlikely (2)	High (10)	Moderate (8)	Moderate (6)	Low (4)	Low (2)
Rare (1)	Moderate (5)	Low (4)	Low (3)	Low (2)	Very low (1)

Likelihood Rating		Definitions
Rare	**1**	Unlikely to occur during a lifetime or very unlikely to occur
Unlikely	**2**	Could occur but considered unlikely
Possible	**3**	Might occur at some time
Likely	**4**	Will probably occur
Almost certain	**5**	Is expected to occur in most circumstances

Consequence Rating		Definitions
Insignificant	**1**	Very low environmental impact confined to a small area within the Project area. Prompt (typically within a shift) clean-up.
Minor	**2**	Low environmental impact confined within the Project area. Short-term (typically within a week) clean-up.
Moderate	**3**	Reversible offsite environmental impact, requiring short-term clean-up (weeks). On-site medium term (weeks) clean-up.
Major	**4**	Major, offsite, environmental impact requiring medium-term clean-up (months). On-site impact requiring significant clean-up effort (months).
Extreme	**5**	Prolonged or severe, offsite or regional environmental impact requiring long-term clean-up (years) with irreversible residual damage. Extensive, Project area impact requiring long-term clean-up and recovery (years).

Appendix B Figures and Maps

MERRITS MOUNTAIN HOUSE
TOP OF MERRITS GONDOLA,
THREDBO NSW 2625
PROPOSED SEWER PRESSURE MAIN AND WATER SUPPLY



LOCATION PLAN
SCALE NTS

DRAWINGS LIST

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SERVICES NOTE:
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ISSUED FOR DA	16.03.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
B.R	N.K	MAR 22	A1	TX16479.00 - C01

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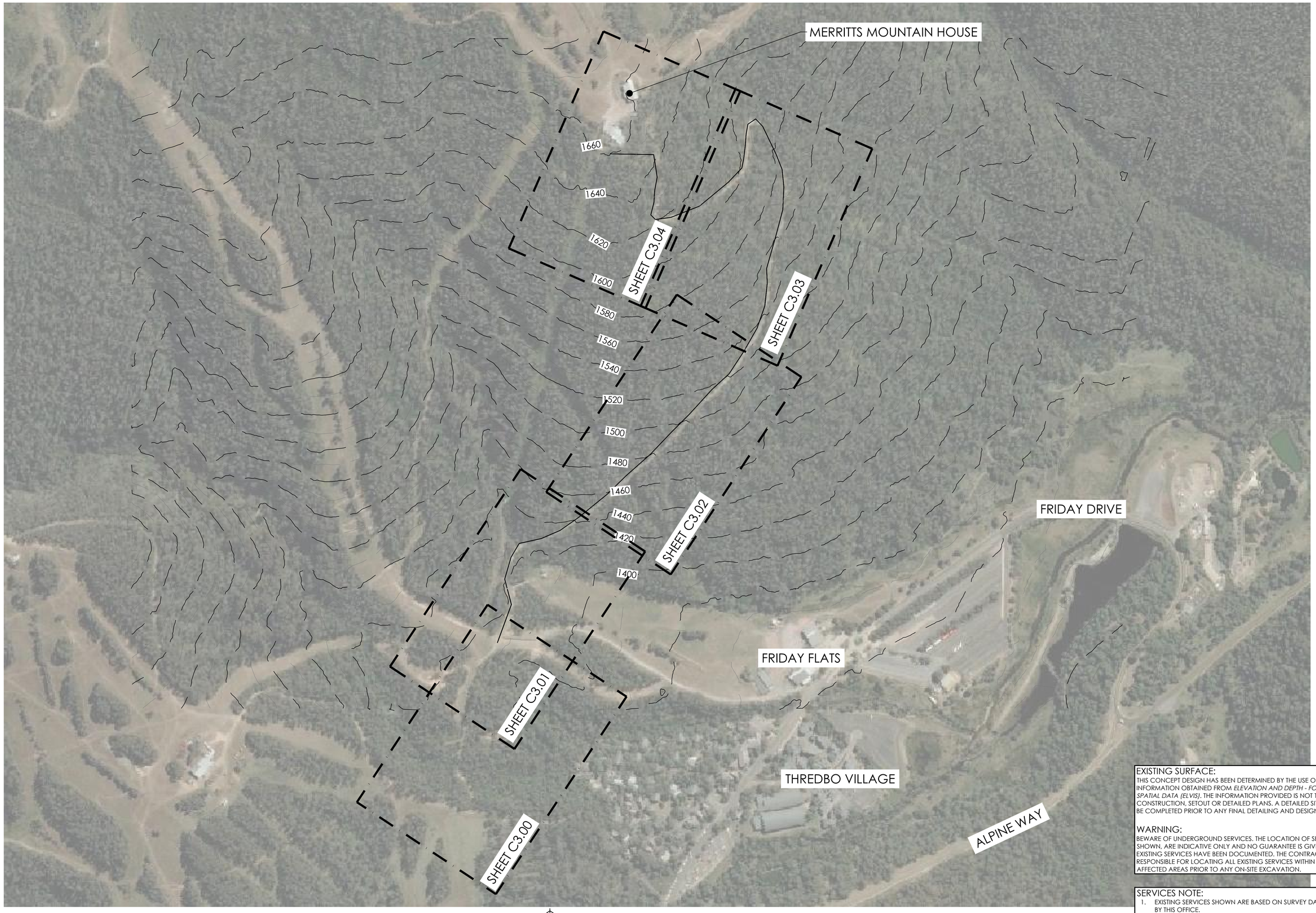

KEY PLAN
N.T.S.

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KEY PLAN

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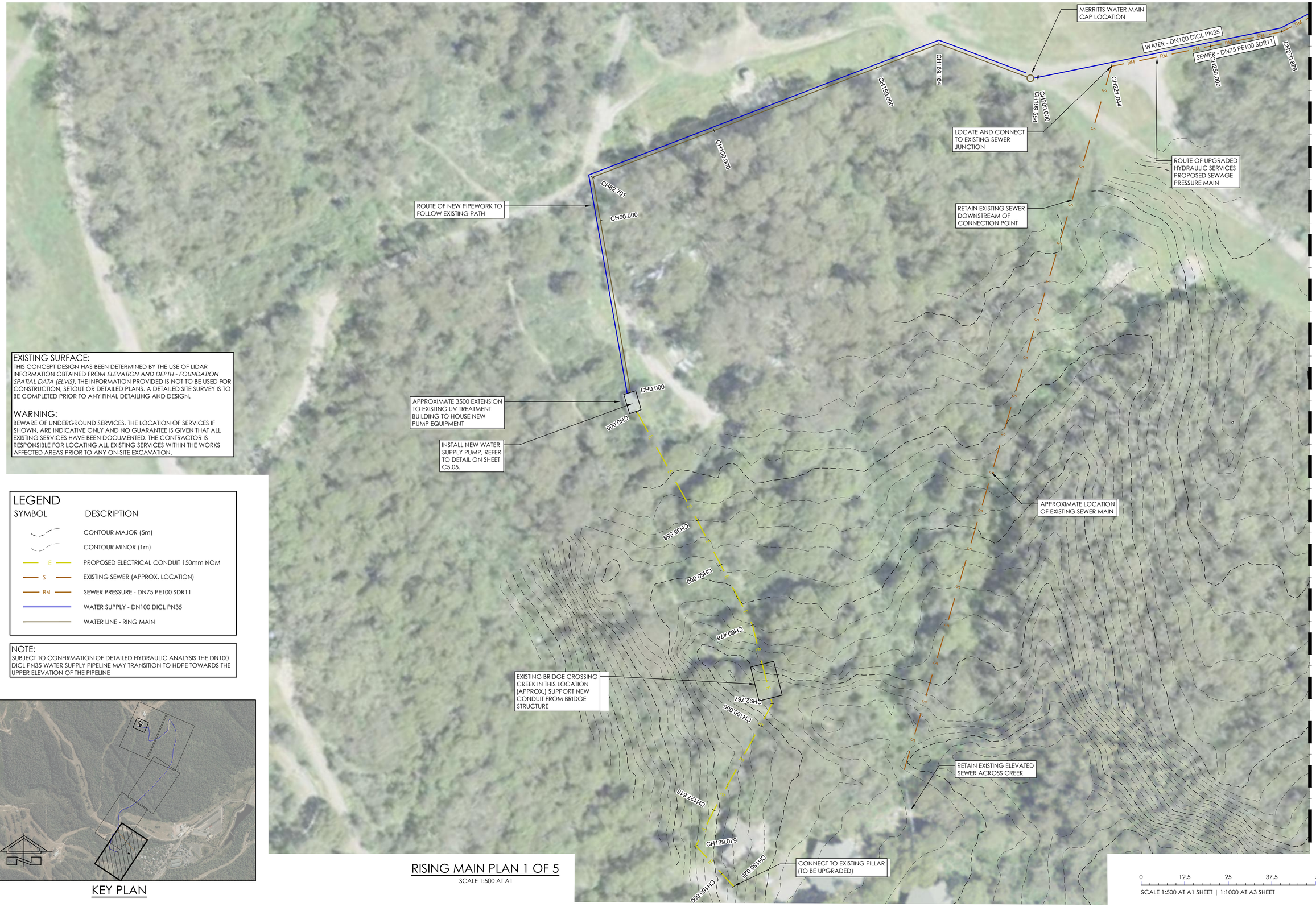

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LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

KEY PLAN

RISING MAIN PLAN 1 OF 5

SCALE 1:500 AT A1

0 12.5 25 37.5 50m

SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

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RISING MAIN PLAN SHEET 1 OF 5

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C3.00	D

ADJOINS SHEET C3.00

ADJOINS SHEET C3.02

MERRITTS WATER MAIN CAP LOCATION

WATER - DN100 DICL PN35

SEWER - DN75 PE100 SDR11

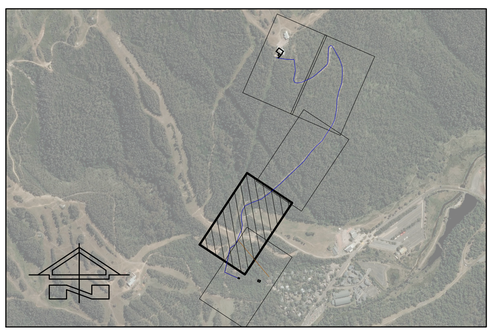
LOCATE AND CONNECT TO EXISTING SEWER JUNCTION

ROUTE OF UPGRADED HYDRAULIC SERVICES PROPOSED SEWAGE PRESSURE MAIN

RETAIN EXISTING SEWER DOWNSTREAM OF CONNECTION POINT

EXISTING CULVERT CROSSINGS. DETAILS OF NEW PIPE CROSSINGS TO BE CONFIRMED AT CC STAGE

CH150.000 CH169.164 CH199.554 CH200.000 CH221.044 CH250.000 CH270.876 CH281.389 CH300.000 CH307.800 CH335.886 CH350.000 CH354.479 CH378.274 CH400.000 CH403.477 CH450.000 CH450.598 CH494.755 CH500.000 CH500.435 1400 1405 1410 1415 1420 1425 1430



KEY PLAN

LEGEND

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	CONTOUR MINOR (1m)
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S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

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RISING MAIN PLAN 2 OF 5

SCALE 1:500 AT A1

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SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
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NORTH POINT U.N.O.

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EVENT

HOSPITALITY
AND ENTERTAINMENT

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THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
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PROJECT No. TX16479.00 - DRAWING No. C3.01 ISSUE D

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ADJOINS SHEET C3.03

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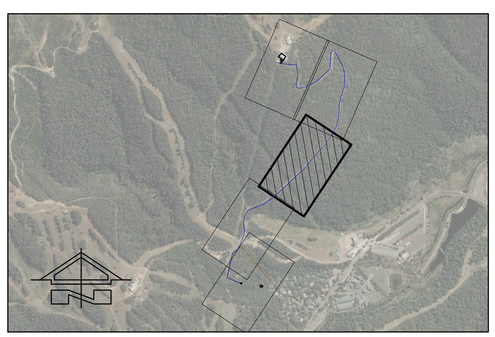
1500 1495 1490 1485 1480 1475 1470 1465 1460 1455 1450 1445

WATER - DN100 DICL PN35

SEWER - DN75 PE100 SDR11

RM

CH550.000 CH557.804 CH600.000 CH627.754 CH650.000 CH697.512 CH700.000 CH740.845 CH750.000 CH778.490 CH800.000 CH819.826 CH850.000



KEY PLAN

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
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RISING MAIN PLAN 3 OF 5

SCALE 1:500 AT A1

0 12.5 25 37.5 50m

SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY
AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

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RISING MAIN PLAN SHEET 3 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.02 ISSUE D

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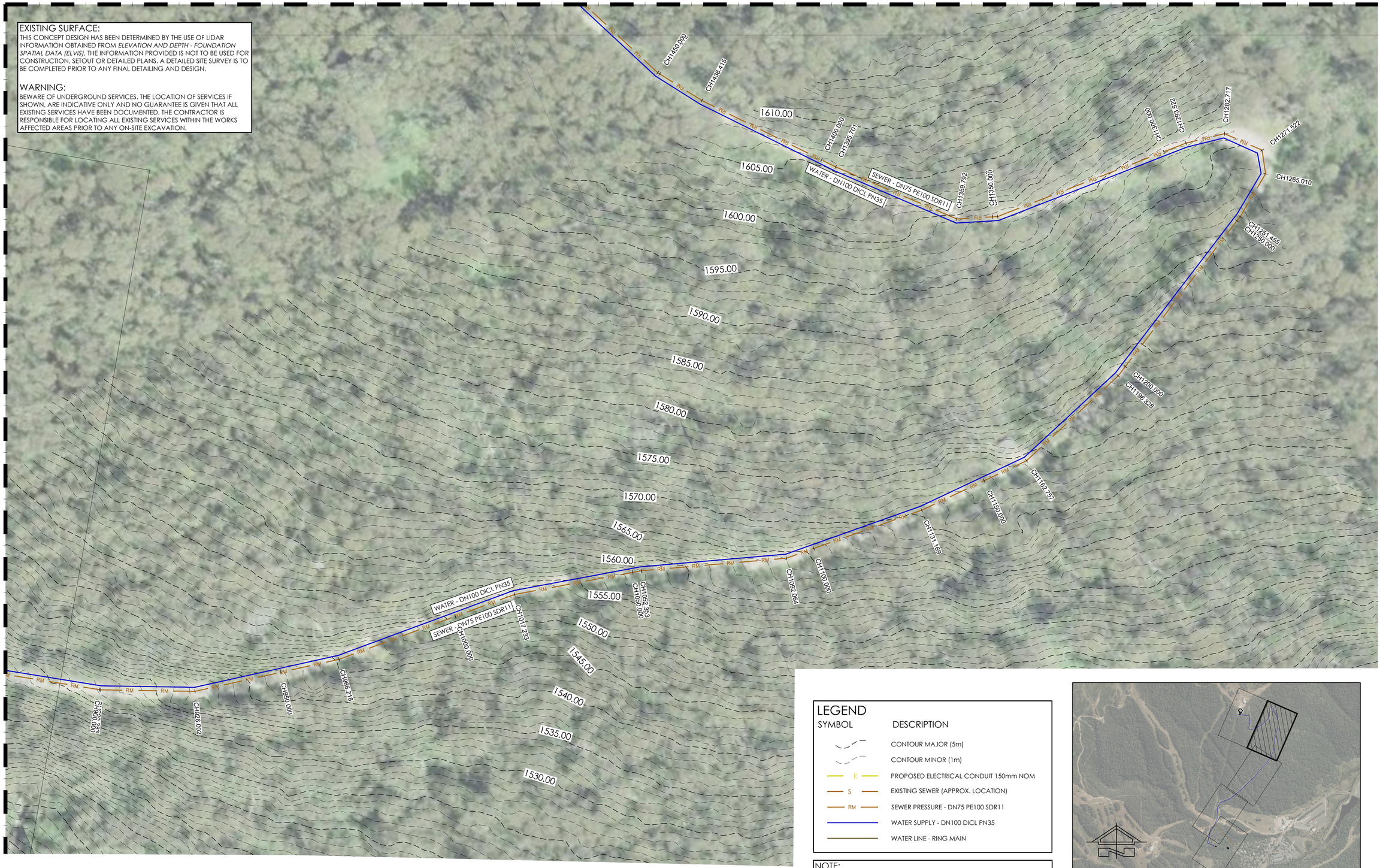

RISING MAIN PLAN 4 OF 5
SCALE 1:500 AT A1

LEGEND

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KEY PLAN

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

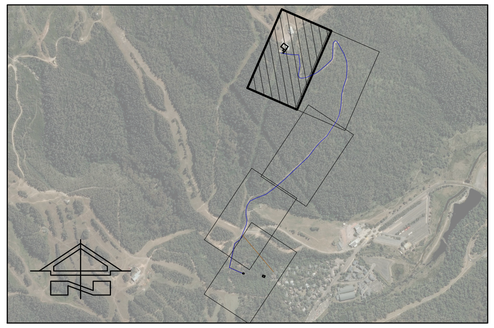
EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
RISING MAIN PLAN SHEET 4 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.03 ISSUE D



KEY PLAN

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

1670
1665
1660
1655
1650
1645
1640
1635
1630
1615
1610
1605
1600
1595

MERRITTS MOUNTAIN HOUSE

CH1694.556
CH1691.039
CH1661.273
CH1650.000
CH1626.271
CH1600.000
CH1577.321
CH1550.000
CH1534.987
CH1522.931
CH1512.338
CH1500.000
CH1494.152

WATER - DN100 DICL PN35
SEWER - DN75 PE100 SDR11

SHEET C4.00

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

ADJOINS SHEET C3.03

RISING MAIN PLAN 5 OF 5
SCALE 1:500 AT A1

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

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NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY
AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

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DRAWING TITLE
RISING MAIN PLAN SHEET 5 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.04 ISSUE D

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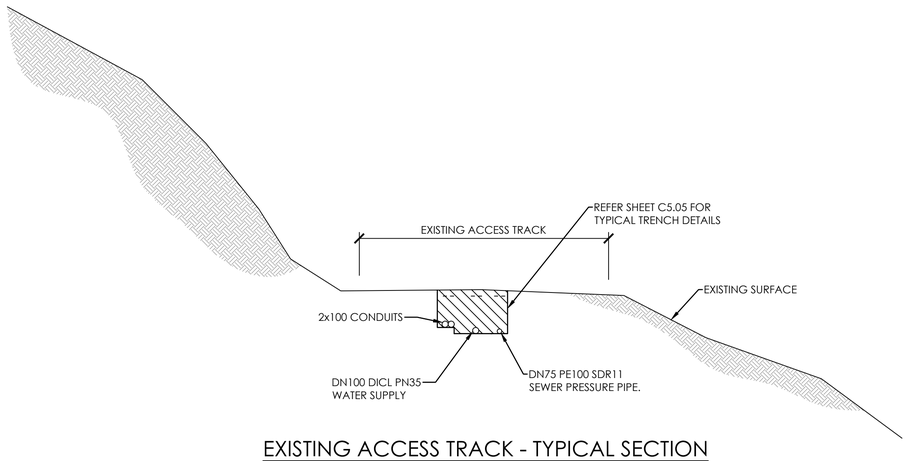
MERRITTS MOUNTAIN HOUSE SITE PLAN
SCALE 1:200 AT A1



EXISTING ACCESS TRACK - TYPICAL SECTION
SCALE 1:50

ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K
AMENDMENTS	DATE	ISSUE	BY

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

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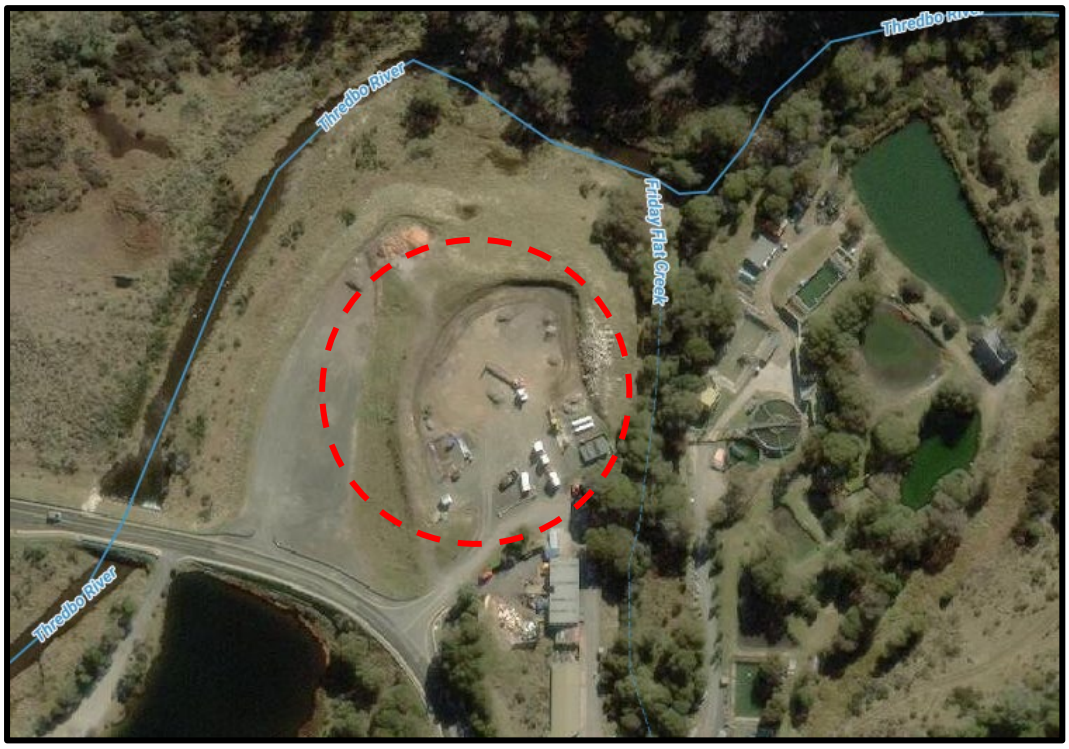
DRAWING TITLE
MERRITTS MOUNTAIN HOUSE SITE PLAN, ACCESS TRACK TYPICAL SECTION

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C4.00	B



Main stockpile locations located at the carpark adjacent to the Thredbo Waste Transfer Station

Appendix C Drainage, Erosion and Sediment Controls

Activity	Control	Purpose	Timing	Location	Materials required
Excavations, trenching	Sediment fence	To prevent sediment run-off	Where required, installed prior to commencement of activity and retained in place until exposed areas of soil are stabilised / rehabilitated	Downslope side of any excavations; wetter areas of trenches	Geotextile fabric (non-woven), star pickets/wooden stakes
Trenching	Straw bale filter fencing	To prevent sediment run-off	Where required, during excavation of trenches	Drier areas of trenches, across or at the toe of slope	Straw bales; support posts/stakes; geofabric
Down-slope excavations	Straw bales	Divert water around and away from open excavation works	Installed once the trenches have been excavated and retained in place until excavations are stabilised/rehabilitated	To be placed at each end of the open trenches	Straw bales; stakes
Cross-slope excavations	Straw bales; Coir logs	Divert water around and away from excavation works	Installed once trenches have been excavated, where required	To be installed on the uphill side of excavations running cross-slope (where required)	Straw bales; stakes; coir logs

Control Installation Notes

Sediment Fence

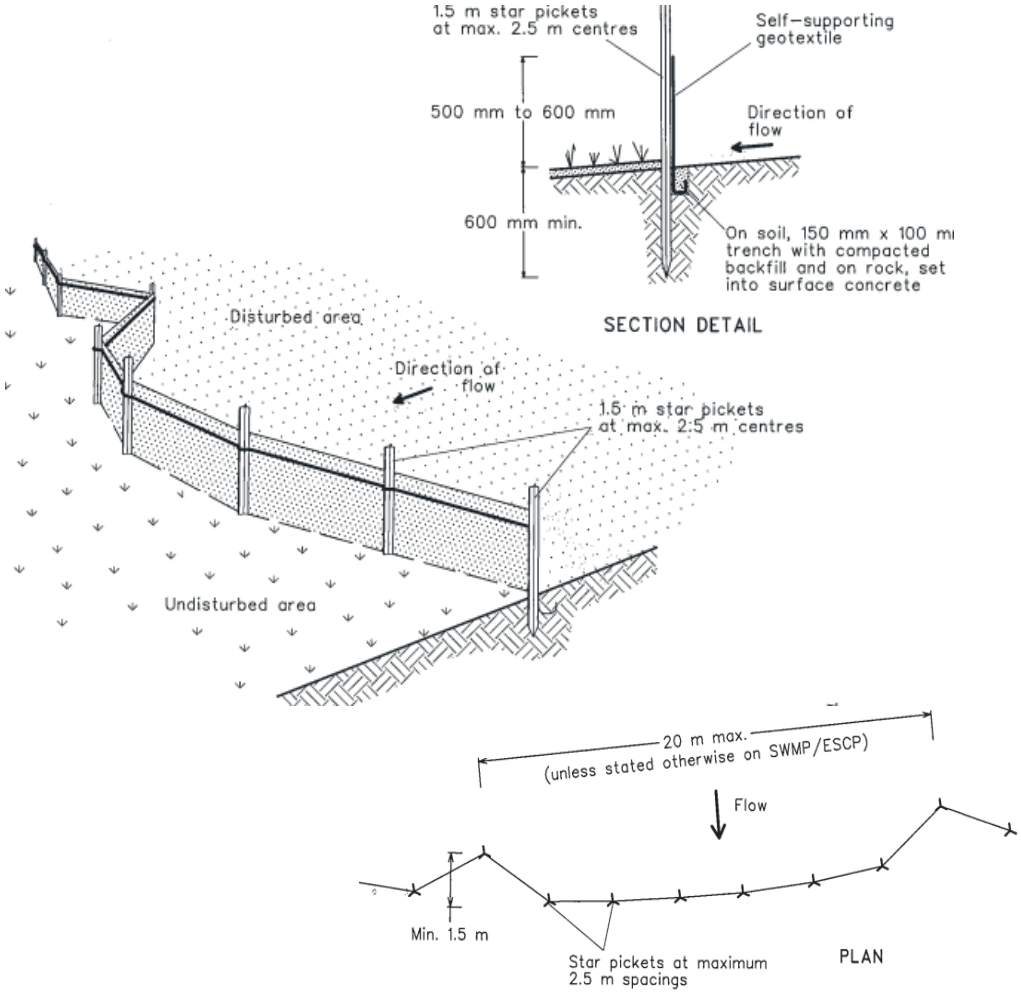
Construction notes:

1) Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns to limit the catchment area of any one section. **The catchment area should be small enough to limit water flow if concentrated at one point to 50 L/s in the design storm event, usually the 10-year event.*

2) Dig a 150 mm deep trench along upslope line of fence for the bottom of the fabric to be entrenched.

3) Install 1.5 m long star pickets into ground at 2.5 m intervals (max) on the downslope edge of the trench. **Fit star pickets with safety caps.*

4) Fix geotextile to the upslope side of the posts ensuring it goes to the base of the trench.



Standard Sediment Fence Installation (Source: Landcom 2004)

Cross Drainage and Sediment Barriers

The recommended spacing for cross drainage and sediment barriers is provided below:

Slope Grade (%)	Cross Drain / Sediment Barrier (m)
5-10	15-20
10-15	10-15
15-25	8-10
>25	5-8

Source: NPWS 2007; Parr-Smith and Polley (1998)
Note: To calculate the grade of a slope: (rise/run) x 100 = slope grade

Coir Logs

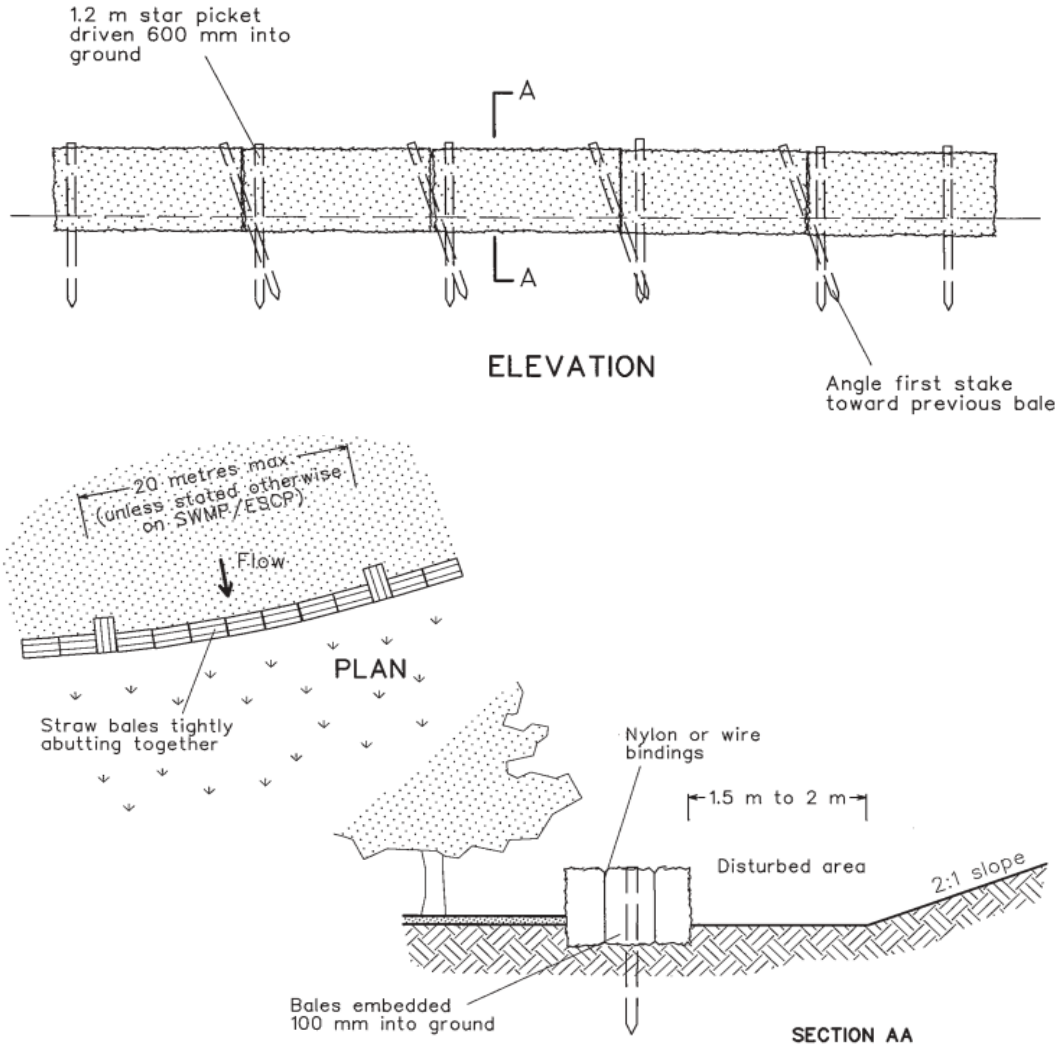
Construction notes:

1) Secure logs by driving the stakes between the outer netting and the core material each side of the logs and secured into the ground (not through centre of log).
2) Ensure spacing of stakes does not exceed an interval of 1 m.
3) Once driven into ground, the stakes should sit at least two-thirds below the ground and one-third above.

Straw Bale Filter

Construction notes:

1) Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2) Place bales lengthwise in a row with ends tightly abutting (1 bale = max height of filter). Fill gaps between bales with straw and wrap with geofabric where necessary.
3) Embed each bale in the ground 75-100 mm and anchor with two 1.2 m stakes/star picket. Angle the first stake in each bale towards the previously laid bale. Stakes should be driven 600 mm into ground, sitting flush with top of bale (if possible). **If using star pickets which protrude above bales, fit with safety caps.*
4) Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1-2 m downslope from the toe.

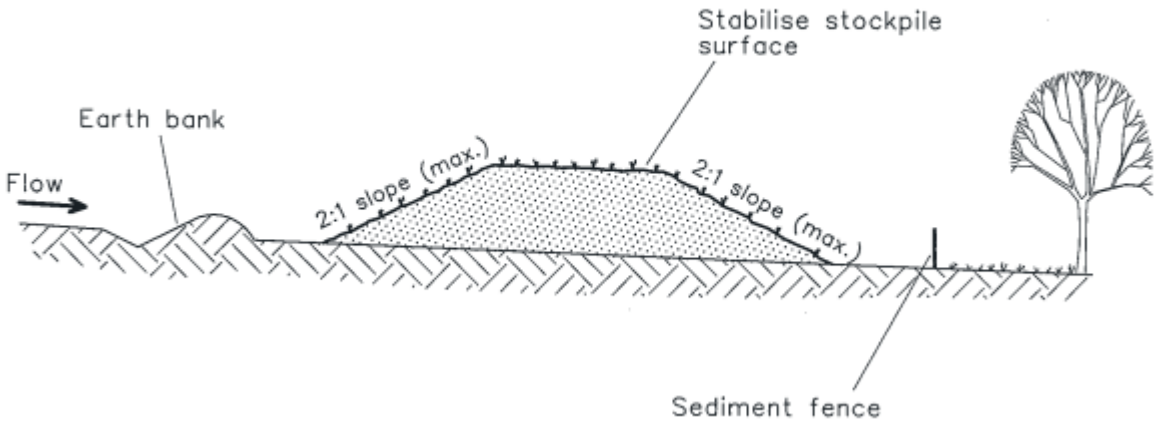


Standard Straw Bale Filter Installation (Source: Landcom 2004)

Soil Stockpile Management

Construction notes:

1) Stockpiles should be located at least 2 m (preferably 5 m) from existing vegetation and waterbodies, concentrated water flows, roads and hazard areas. Recommended location within weed free, disturbed area if possible.
2) Construct stockpiles as low, flat mounds (<2 m high) with a slope <50% (26˚).
3) Install appropriate sediment controls (e.g. sediment barriers 1-2 m downslope) around stockpiles.
    - It is recommended to cover stockpiles (e.g. with anchored geofabric) during strong wind or high rainfall events.
    - Straw bales used for sediment and erosion control must be certified weed free.



Stockpile Management (Source: Landcom 2004)

Appendix D Environmental Schedules

The following environmental schedules are included:

- SEMP Weekly Inspection Report;
- Environmental Incident Reporting Form;
- Complaints Form; and
- Erosion and Sediment Control Inspection Report.

THREDBO ENVIRONMENTAL SERVICES

SEMP WEEKLY INSPECTION REPORT

Sheet _____of_____

Project: _____ Inspection Date: _____

Inspected by: _____

Weather:	**Morning** Clear/Overcast Fine/Rain/Snow	**Afternoon** Clear/Overcast Fine/Rain/Snow	
Operation	Condition	Plant/Labour	Comments
Erosion and sediment controls			
Site Signage			
Vehicle Wash-down			
Waste Skips			
Tree Protection			

Verbal Discussion with Contractor:	Verbal discussion with others:
Materials Received / Required:	Site Instructions Issued:
Inspectors Report / Summary:	Action required:

Signature:_____ Date:_____

Kosciuszko Thredbo Pty Ltd

Environmental Incident Reporting Form

Confidential document after first entry

The purpose of this form is to report any incident that may have resulted in Environmental harm on Kosciuszko Thredbo Pty Ltd premises. Remember to be succinct, stick to the facts and do not make assumptions. Only record information you know to be correct.

The only persons authorised to contact external agencies eg EPA in relation to environmental incidents are the Kosciuszko Thredbo General Manager and Environmental Services Manager or their approved delegates.

Return completed form to the Environmental Services Manager as soon as practicle, on completion of the Environmental incident.

Date of Incident:	**Time of incident:**
Reported by:	**Department:**

Location of Incident

EXACT location of the incident (include landmarks and features, nearest cross street etc to make it easier to identify later)		
Site:	Building:	Room:

Description of incident

Provide description and extent of incident: …… …… …… …… ……
Have relevant photos been taken and attached? Yes ☐ No ☐
If 'No', provide sketch and attach to the rear of this document.
What was the estimated duration of the incident?

Type of incident

☐ Spill (including fuel,oil,waste material or other polluting substance)	☐ Erosion and sedimentation incident	☐ Contaminated water discharge
☐ Noise emission/complaint	☐ Unauthorised/accidental damage to heritage item	☐ Unauthorised/accidental vegetation removal or harm
☐ Air Emission	☐ Wildlife habitat/nesting area disturbed	☐ Other (specify)

Environmental Incident Reporting Form

Level of incident

Level	Example
☐ Minor	eg. No material has escaped the site or caused material harm to the environment – it is easy to clean up without additional assistance.
☐ Major	eg. Material has escaped the site causing pollution downhill/downstream areas, which will require clean up involving other agencies and/or additional resources not available to local site management. Damage has occurred or is likely to occur to the environment.

Hazardous Material Spilt

☐ Petroleum based products/ Hydrocarbons	☐ Chemicals domestic or industrial grade
☐ Biological waste / Clinical and related waste	☐ PCB insulating liquids
☐ CFC containing equipment	☐ Paints or paint products
☐ Radioactive waste	☐ Other (specify)
Detail type/ingredient spilt: (UN, MSDS details)	
Detail concentration of material spilt:	
Detail quantity of material spilt:	

Type of Spill

☐ Spilt onto ground	☐ Spilt into stormwater drain
☐ Spilt into waterway	☐ Poured down sink
☐ Poured down sewer	☐ Released into atmosphere
☐ Caused odour	☐ Caused fire/explosion
☐ Caused infectious contamination	☐ Other (specify)

Immediate Actions

Was spill contained? Yes ☐ No ☐
Detail immediate actions/controls measures taken to rectify or contain the incident …… …… …… …… …… …… …… ……

Environmental Incident Reporting Form

Corrective Actions

Detail corrective clean up action taken

……

……

……

……

Disposal

Detail disposal method/plans and location

……

……

……

Recommended follow up and preventative actions

Detail recommendations

……

……

……

Persons present at Incident

Were there any witnesses to the accident? Yes ☐ No ☐ If 'Yes', please provide names

……

……

Declaration

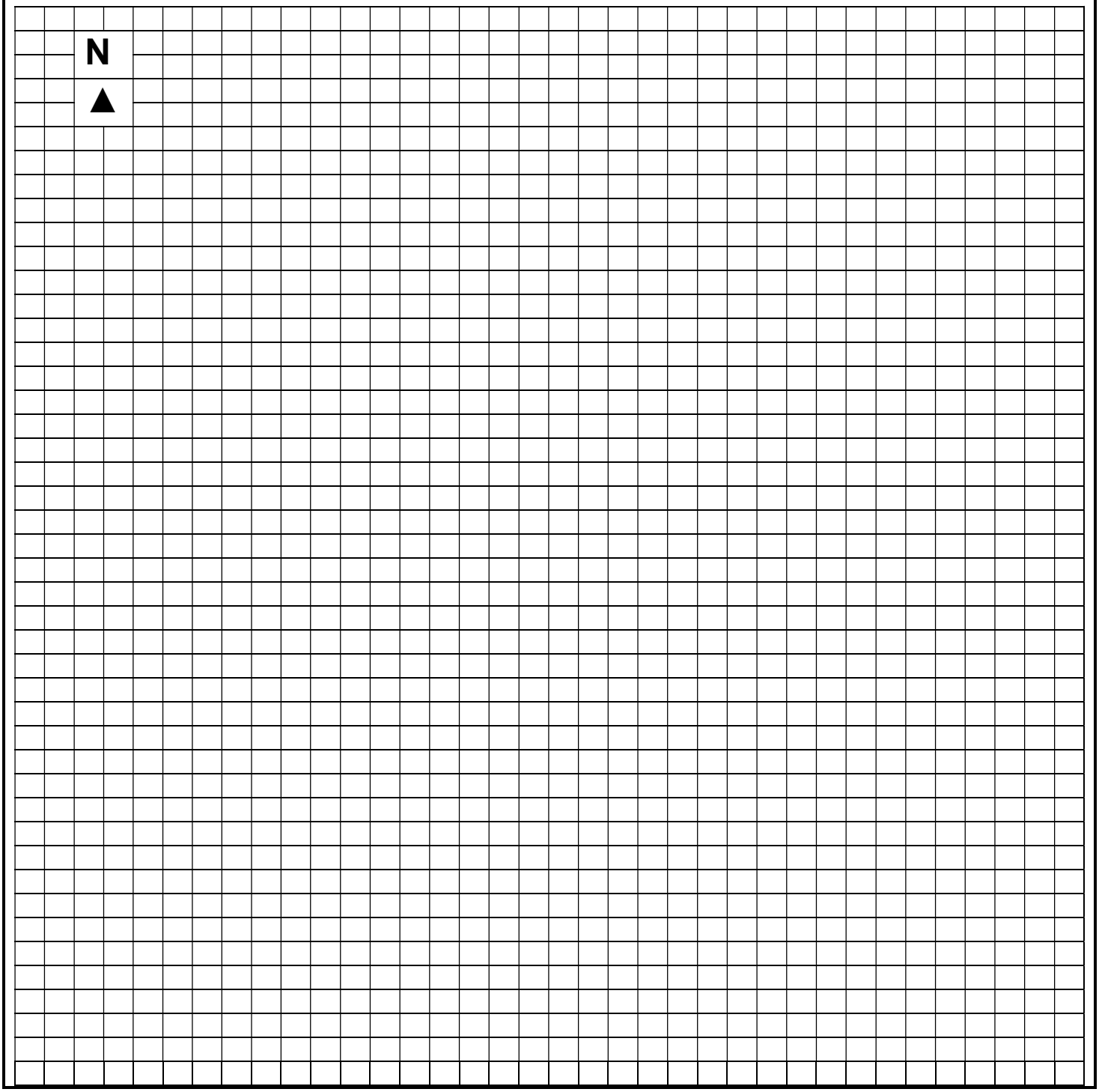
The information and answers given above are true in every detail and no information has been withheld.

Departmental Supervisors Name	
Departmental Supervisors signature	*Date*

Departmental Managers Name	
Departmental Managers signature	*Date*

Environmental Incident Reporting Form

Diagram: (do not scale)



Created By: Paul Corcoran
Created Date: 24 Mar 2009
Review Date: 24 Mar 2017
Reviewed Date: 7th January 2020, by E Diver

THREDBO ENVIRONMENTAL SERVICES

Record of complaint

Sheet _____of_____

Project: _____ Date / Time: _____

Received by: _____ Reference Number: _____

Complainant details:	Witness details:

Nature of complaint:

.....

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.....

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..... Complainant sign:

Action taken:

.....

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THREDBO ENVIRONMENTAL SERVICES

INSPECTION REPORT FOR TEMPORARY EROSION/SEDIMENTATION CONTROLS

Sheet _____of_____

Project: _____ Inspection Date: _____

Inspected by: _____ Inspect the site weekly or immediately after rain.

1. Are temporary drains effective in diverting all runoff from exposed areas to silt traps or other sediment structures before leaving site? If No, state location and action required:	Yes/No
2. Have new areas been disturbed which need temporary controls? If Yes, state where:	Yes/No
3. Are there any disturbed areas where work is sufficiently advanced for revegetation to be undertaken? If Yes, state where:	Yes/No
4. Is any dirty runoff water bypassing or overflowing existing silt traps/sediment control structures? Do existing traps need to be increased in capacity? Are any additional traps needed? If Yes, state location, action needed and priority:	Yes/No Yes/No Yes/No
5. Do any silt traps/sediment control structures need maintenance or repair to operate effectively? If Yes, state location, action needed and priority	Yes/No
6. Are any silt/sediment control structures more than 60% full or otherwise in need of cleaning out? If Yes, state location	Yes/No
7. Are actions taken after last inspection adequate and effective? If NO, list outstanding actions:	Yes/No

Signature:_____ _____Date:_____