FINAL REPORT

Stage 1 Environmental Site Assessment

Lithgow Mountain Bike Park, State Mine Gully Road, State Mine Gully, Lithgow NSW

Date:
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Prepared for:
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Executive Summary

This Stage 1 Environmental Site Assessment (Stage 1 ESA) was commissioned by Central Tablelands Mountain Bike Club (the Club) for part of the land formerly occupied by the State Coal Mine operation located off State Mine Gully Road in an area known as State Mine Gully (historically also known as Morts Gully), Lithgow NSW (the Site). The Club is proposing to establish a mountain bike park across the Site, to be known as the Lithgow Mountain Bike Park (the LMB Park) with proposed (& subject to approval) interconnecting trails to be constructed by National Parks and Wildlife Services (NPWS). The location of the LMB Parkis provided on Figure 1 and the proposed mountain bike park overlay that is to be constructed by the Club on the Site is provided on Figure 2.

The LMB Park proposed for the Site will provide access to areas of the Site that are currently inaccessible and will continue the current open space and recreational uses of those areas currently accessible. The LMB Park will require the construction of mountain bike trails through the Site, as shown on Figure 2 and the construction of the carpark and amenities areas on the southern part of the Site, as shown on Figure 5. The carpark is to be constructed on top of the existing mounded area, with a ramp to be constructed for access from the entrance to the State Mine Heritage Park and associated outdoor picnic areas, landscaping, limited toilet facilities and signage. The proposal does not include any major earthworks, landforming or similar and does not include the construction of any buildings or indoor spaces, with the LMB Park to be an outdoor park.

The results of this Stage 1 ESA have identified that the majority of the Site is comprised of native bushland which, apart from the establishment of fire trails and some limited bushwalking tracks and a limited area where a mine shaft formerly operated, has never been subject to development for any use. The only area of the Site that has been subject to significant development is the area in the south of the Site that is within the southern part of the State Mine Heritage Park. This southern area of the Site was formerly part of the Lithgow Coal Mine operations, which had its main headworks, including main shafts, railway lines, powerhouse and associated buildings that occupied the majority of the northern and central parts of the now State Mine Heritage Park. However, it does not appear that this southern area of the Heritage Park was occupied by any mine shafts, railway operations, powerhouses or other mine structures. Since the closure of the mine in the early 1950s the former mine site has remained relatively unchanged, with no significant developments apart from the demolition of some structures and construction of a new shed.

After the closure of the mine, it appears that the southern area of the State Mine Heritage Park site had placed to it stockpiles of discarded coal chitter, a byproduct of the burning of coal used in the power house. It is understood that these stockpiles also could comprise sandstone rocks, shales and some raw coal resulting from the washing of coal. Ultimately, these stockpiles were placed to form the current elevated mound that occupies this area of the Site. Whilst a source of potential contamination to the surface and sub-surface of the southern area of the Site could be from the underlying coal chitter, raw coal or any associated coal ash, given that the mounded area has been present for many decades and is covered by grasses and potentially a layer of soils, the risk of a contamination being present at the surface or near surface that would present a risk of harm to human health is considered to be low to negligible.

Further, whilst abandoned coal mine workings can present at risk of producing methane, the depth and extensive nature of the underground coal mine workings beneath areas of the Site and that they are known to be flooded, means that the risk of such gas being generated and migrating to the surface such that it could create a risk of harm to users of the Site is considered to be unlikely. Similarly, coal chitter present in stockpiled or placed areas can have a risk of combusting, which could pose a risk to the safety of users of this area of the Site, however, it is considered that such a risk under usual conditions would be unlikely.

The results of this Stage 1 ESA have not identified conditions or potential conditions that are considered to affect the suitability of the Site for the open space and recreational uses proposed by the LMB Park. Overall, it is considered that the Site is suitable for open space and recreational land use.

1 Introduction

CONSARA Pty Ltd (CONSARA) was commissioned by Central Tablelands Mountain Bike Club (the Club) to undertake a Stage 1 Environmental Site Assessment (Stage 1 ESA) on part of the land formerly occupied by the State Coal Mine operation located off State Mine Gully Road in an area known as State Mine Gully (historically also known as Morts Gully), Lithgow NSW (the Site).

The Club is proposing to establish a mountain bike park across the Site, to be known as the Lithgow Mountain Bike Park (the LMB Park). The location of the Site is provided on Figure 1, which also shows adjacent proposed (& subject to approval), interconnecting trails planned by National Parks and Wildlife Service (NPWS) – the total network of trails. The proposed mountain bike park overlay on the Site that is to be constructed by the Club, and that is the subject of this Stage 1 ESA, is provided on Figure 2, in the Figures section of this report.

This Stage 1 ESA has been completed to assess the environmental condition of the Site, assess whether contamination is potentially present and to provide an assessment of the suitability of the Site for use for open space and recreational uses proposed by the LMB Park. The Stage 1 ESA has been prepared to address the requirements of Chapter 4 of the *State Environment Planning Policy (Resilience and Hazards)* 2021 (RH SEPP) as part of the development approval process for the LMB Park.

This report has been prepared where possible and relevant with reference to the requirements of the relevant guidelines made and approved by the NSW Environmental Protection Authority (EPA), including the National Environment Protection Council (NEPC) (2013) *National Environmental Protection Measure 1999* (ASC NEPM).

1.1 Proposed Lithgow Mountain Bike Park

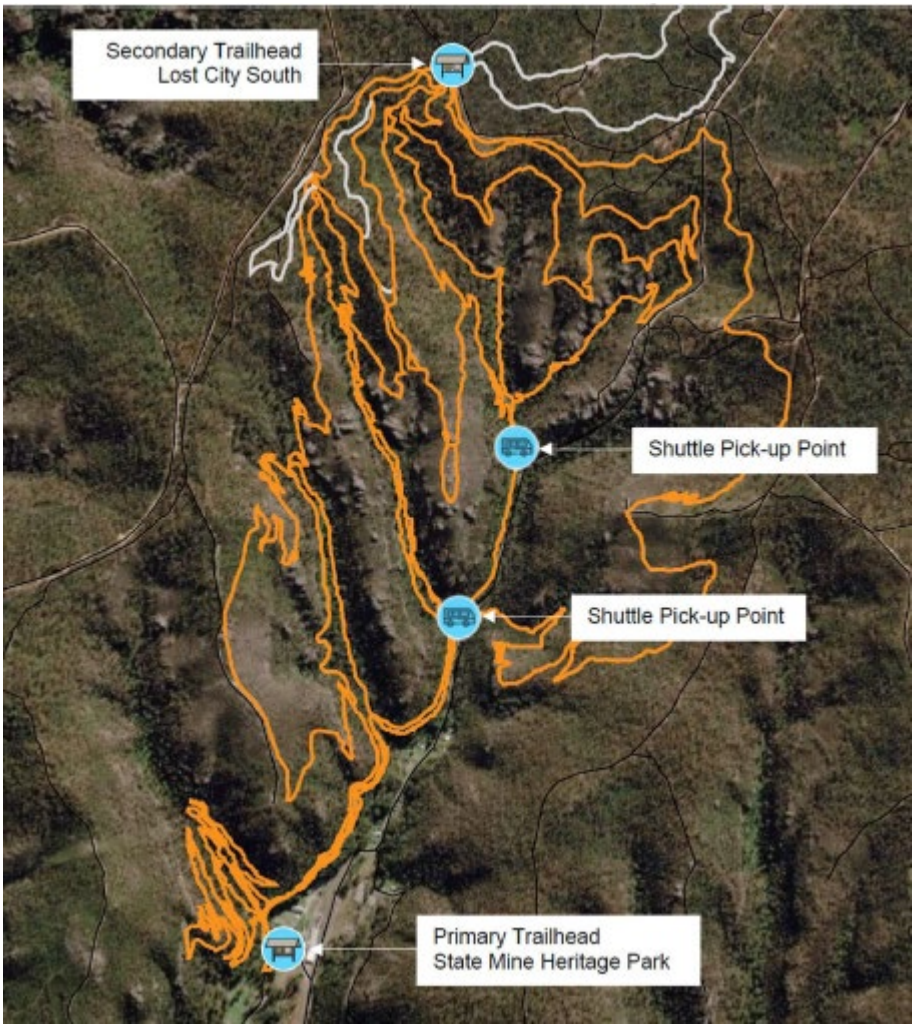
The Club are proposing that the Lithgow Mountain Bike Park (the LMB Park) will comprise 24.54 km of mountain bike trails composed of a range of different type of trails with a range of difficulty ratings. The LMB Park is planned to intersect with a proposed NPWS mountain bike trail development that extends across some of the northern areas of the LMB Park and to the north-east through the Gardens of Stone State Conservation Area (SCA) (seen in Figure 1), potentially creating an overall (proposed and subject to approval) 'on Park' mountain bike network of 38.17 km. With regards to the LMB Park, this will comprise of the Club's 24.54 km of trails with NPWS proposing 14.54 km of intersecting trails (subject to approval).

The LMB Park, when combined with the NPWS trail development, includes two main trailhead areas, with the (Lower) 'Primary Trailhead' on part of the current State Mine Heritage Park in the southern area of the Site and a proposed (Upper) 'Secondary Trailhead' at the northern area of the Site off State Mine Gully Road at a location referred to as 'Lost City South', located on NPWS land. These are shown on Figure 3 below.

It is noted that parts of the NPWS proposed trails are located within Gardens of Stone SCA and are the subject of a separate approval pathway (environmental assessments and proposed, publicly exhibited REF) so do not form part of the Site that is the subject of this Stage 1 ESA. The trails that are located on the Site for the LMB Park are 24.54 km in length and are shown in orange in Figure 3 below and the NPWS trails extend beyond the boundaries of the Site to make-up the 38.17 km park shown in Figure 1. These proposed NPWS trails are the subject of assessment and determination by others and are not the subject of this Stage 1 ESA.

It is proposed that all primary access to the LMB Park will be via the (Lower) Primary Trailhead where the majority of car parking and amenities will be located, with access to the proposed (Upper) Secondary Trailhead (NPWS's) primarily via private vehicles or licensed shuttle bus services (shuttle buses subject to NPWS Eco Pass Program). Shuttle bus services are proposed to operate between the two trailheads, with two additional shuttle pick-up points planned at key locations along State Mine Gully Rd, allowing riders more flexibility in how they choose to utilise the trail network.

Figure 1: Proposed Layout of LMB Park showing Upper and Lower Trailhead Locations and Shuttle Bus pick up points.



Combined NPWS and LMB Park Trails – 37.6 km

The (Lower) Primary Trailhead area will be located on a large open area just south of the existing museum building and will comprise a carpark for 111 vehicles and associated driveway and amenities such as picnic tables, automated public toilet, drinking fountains and signage. This area is proposed to be separated from the remainder of the State Mine Heritage Park by fencing with some retaining walls, paths, bollards and other associated landscaping to also be completed.

The proposed (Upper) Secondary Trailhead area (NPWS's) will be located at the highest point of the LMB Park and offer only limited parking. The concept plans and civil design for the LMB Park are provided in Appendix A and the proposed layout for the Primary Trailhead provided in the concept plan is shown on Figure 5 and the civil design shown on Figure 6.

1.2 Objectives

The objectives of this Stage 1 ESA is to review available information on the Site (for the 24.54 km of trails shown in orange in Figure 3 above) and provide an assessment of the environmental condition of the Site, including the potential for soil and/or groundwater contamination to be present.

The specific objectives of this Stage 1 ESA are to:

- Identify potentially contaminating activities;
- Identify potential areas of environmental concern (AEC) and potential contaminants of concern (COC);
- Provide an assessment of the environmental condition of the Site, its suitability for its use for the open space and recreational land uses proposed by the LMB Park and recommendations (if any) for the requirement for further investigations or remediation.

1.3 Scope of Work

The following works were undertaken in order to meet the objectives described above:

- Complete searches and review of information relating to the Site from the following sources:
    - Previous reports and local historical information on the former coal mine and power station operations undertaken in the State Mine Gully area, including the activities of the former coal mine on the area of the Site;
    - Local Council records, including current planning and/or zoning certificates, previous land uses (where available);
    - NSW EPA environment management and contaminated land registers and overlays;
    - Available historical aerial photographs;
    - Available geological and hydrogeological information;
    - Complete an inspection of the Site and surrounding area to assist in the identification of potential on and offsite sources of contamination;
    - Completion of interviews with current State Mine Heritage Park operators on their knowledge of the historical activities completed on the Site;
- Undertake a preliminary assessment of the nature, location and general conditions of features at the Site and within the adjoining areas;
- Based on the results of the review of the historical and background information and inspection determine the potential AEC and COC;
- Preparation of this report detailing the results of the background and desktop searches, the results of the inspections and interpretation of the results with respect to achievement of the objectives of the Stage 1 ESA.

2 Site History, Condition and Location

2.1 Site Identification

The Site is located across a five parcels of land covering an area of approximately 210 hectares, within the area known as State Mine Gully, located on the northern extent of Lithgow NSW. Figure 4 below shows these five parcels with their Lot and Deposited Plan identifiers. The broader contextual location of the Site is presented on Figure 1 and its layout is also presented on Figure 2, provided in the Figure section of this report.

Figure 2: Cadastral Boundaries and Lot and Deposited Plan Identifiers

Orange lines show the proposed 24.54 km of mountain bike trails on the Site

For the purpose of this Stage 1 ESA, the Site is defined as only the areas of land on which the LMB Park will be located and, as such, in the majority, as seen on Figure 5 above, comprises narrow lengths of the proposed mountain bike tracks that extend primarily through existing bushland present across steep hills and gully slopes, sandstone outcrops, ridges and escarpments. The Site also includes a limited area in the south in the lower areas of the gully, located within part of the existing State Mine Heritage Park site, that will be converted to the primary trailhead area to comprise a carpark with associated picnic and amenities area and shuttle bus pick up area that will form the main access to the trails of the LMB Park. The proposed layout of this primary trailhead area is shown in detail on Figure 5 and Figure 6, in the figures section of this report.

The five parcels of land on which the Site is located are owned by Lithgow City Council (Lots 1 and 3 DP1110346), the Greater Lithgow Mining Museum Incorporated (Lot 11 DP1240259 and Lot 2 DP787403) and Crown Land (Lot 2 DP 787403). The certificates of title are provided in Appendix B.

It is noted that parts of the LMB Park extend further to the north and north-west of the Site on land that is part of the Gardens of Stone SCA. This Stage 1 ESA has been prepared for the parts of the LMB Park located on the Site, as described above and as shown on Figures 1 to 4.

2.2 Site History and Background Information

2.2.1 Lithgow State Mine – History of Operation

The Site is located across part of the former Lithgow State Mine, which was an underground coal mine that commenced being constructed in 1916, mined its first coal from its underground workings in 1921 and then continued as an underground coal mine until its operations ceased due to water ingress and some flooding events in 1951.

The headworks of the mine primarily operated from a number of main shafts located on the current State Mine Heritage Park area in the base of the State Mine Gully, with a ventilation shaft and another also constructed at approximately 4 km from the gully just off what is know known as State Mine Gully Road. The mine headworks in the gully also comprised a large power house comprised of eight boilers where coal was burned to power the mine workings. A railway line extended into the gully from the Lithgow Railway Yard, with coal export from the mine using coal fired rail locomotives. A number of magazine huts were also located in the western part of the mine site and were used to store explosives used in the mining operations.

In 1927, the power station, locate to the east of the mine site and on the eastern side of State Mine Gully Road in the gully, commenced being constructed. This power station operated between 1928 and 1969 and was originally built to supply power to the mine and to various factories within Lithgow, however, over time it was increased in size and provided power to the local area as well as to the Blue Mountains. The decommissioning of the power station and demolition works were completed in 1976.

The former Lithgow State Mine operated to extract or work coal from the lower units of the Lithgow Coal Seam with the main shafts extended to more the 80 metres below ground surface and mined coal from a seam that ranged between 1 to 3 m in thickness. The coal produced from this coal seam was a high energy thermal coal, yielding medium ash with a low to moderate sulphur and phosphorus content.

2.2.2 Greater Lithgow Mining Museum

In 1976 the former mine site was purchased by Austen and Butta (Collieries) Pty Limited, with historical records indicating that their was an intent to establish a cement works on the abandoned mine site, however, this was never undertaken, with the mine site left vacant until 1990 when ownership was given to Lithgow City Council to establish a mining museum in the surviving buildings on the mine site.

Since this time, the mine site has been owned and operated by the Greater Lithgow Mining Museum Incorporated who have undertaken various heritage conservation works, repurposed some of the remaining buildings as a

museum and for rental as events spaces, artists studios, constructed a rail carriage shed, refurbished some of the remaining railway lines and encouraged public use of the Heritage park for open space, recreational and light commercial uses, known as the State Mine Heritage Park.

This work has included managing the remnant areas of placed coal chitter which exist to the west of the main Heritage Park area along the base of the gully slopes near the former magazine huts and also in the south which is proposed to form part of the Site. These areas of placed coal chitter are comprised mainly of coal chitter but are also understood to contain sandstone rocks, shales and some raw coal.

It is understood that in 2013, some of the coal chitter piles in the western area started to burn. This also occurred again in late 2019, when bushfires threatened the State Mine Heritage Park and caused large areas of surrounding bush to be burnt. These fires caused some of the historically placed coal chitter materials located to the west of the Heritage Park and also present in the elevated mound area that forms part of the Site to burn. The fires within the coal chitter mounds were observed by the State Mine Heritage Park operators to be extinguished by the NSW Fire and Rescue Services using water and the excavators to place other types of soil materials over the chitter to extinguish the fire.

2.2.3 Local Environmental Plan Review

The Planning Certificates and Property Reports for the Site identify that it is located within the Lithgow Local Government Area and are covered by the Lithgow Local Environment Plan 2014. The Site is on land that is zoned C3 Environmental Management with the former mine site in the gully (Lot 11 DP1240259) and the area further to the north along State Mine Gully Road where some of the former mine shafts are present (Lot 2 DP787403), both owned by Greater Lithgow Mining Museum Incorporated identified as a heritage item.

2.2.4 Historical Aerial Photograph Review

Aerial photographs of the Site and surrounding area were obtained from NSW Government Spatial Services with photographs sourced from 1969 through to 1998. Aerial photographs of the Site in the 2000s to 2010s were not available, with the next available photograph taken in 2019 and then in 2024 and were sourced from Nearmaps. All the aerial photographs sourced and reviewed are provided in Appendix C of this report. The most recent aerial image dated September 2024 is also shown in Figures 1 and 2. A review of selected aerial photographs with respect to the development of the Site is provided below

1969: The southern area of the Site in the gully on the southern part of the now State Mine Heritage Park appears to be occupied by a mounded area and some stands of trees that is surrounded by unsealed roadways The area further to south, appears to contain various stockpiles and an unsealed road extends to the south-west. The remainder of the State Mine Heritage Park can be seen to be occupied by remnant structures and buildings of the former mine site, many of which remain present today. The power station can be seen to the east of the former mine site and is separated from the mine site by a road that continues to the north and up into the higher areas of the gully appearing to stop a couple of kilometres up the mountains at what is the location of the higher mine shafts. A few residential houses can seen on the road to the north of the mine site and power station and also residential housing can be seen to the south. The majority of the Site appears to be native bushland, with some fire trails and roadways present on the higher ridgelines at the top of the escarpments.

1975: The Site appears relatively unchanged from the 1969 photograph. The former mine site also appears generally unchanged, however the power station appears to have been partially demolished. The roadway between the power station and the former mine site remains present and continues to the same location seen in the 1969 photograph.

1984: The Site appears relatively unchanged from the 1975 photograph. The southern area of the Site on the southern part of the now State Mine Heritage Park continues to occupied by a mounded area and some stands of trees that is surrounded by unsealed roadways and it can seen in this photograph that the materials appear consistent with a coal chitter or similar and have an uneven surface, with no grasses appearing to be present

across the area but stands of trees present along the western edge. The former mine site also appears generally unchanged, however the power station now appears to have been demolished, with some remnant building footprint and tanks present. The roadway between the power station and the former mine site remains present and now appears to continue to a higher location than seen in the 1975 photograph, following the alignment of the now State Mine Gully Road. The location of the former higher mine shaft off the roadway a few kilometres from the mine site can seen to have been further cleared a couple of unsealed tracks extending for a short way into the bush.

1991: The Site appears relatively unchanged from the 1984 photograph. The southern area of the Site on the southern part of the now State Mine Heritage Park continues to occupied by a mounded area and some stands of trees that is surrounded by unsealed roadways and it can seen in this colour photograph that the materials can more clearly seen to be consistent with a coal chitter or similar and have an uneven surface, though it does appear that further to the south the edge of the mounded area has been infilled to create a sloped surface down to the southern surrounding area. The former mine site also appears generally unchanged, through does appear to have roadways more well established than in the previous photograph. There appears to have been some further demolition works on the power station site with some of the remnant structures seen in the 1984 photograph no longer present. The roadway between the power station and the former mine site remains present and now appears to continue as part of a continuous roadway across the top of the mountains to the north.

1998: The majority of the Site and surrounding area has not changed significantly since the 1991 photograph, however, the southern area of the Site, in the southern part of the State Mine Heritage Park appears to have been subject to some earthworks, with the excavations into the mounded area appearing to have been undertaken, with the removed coal chitter relocated further to the south into stockpiles. It appears that the earthworks are being undertaken to reshape the mound and the sloping area of the mound down to the adjacent creekline to the south-east. On the State Mine Heritage Park site a large shed has been erected over part of the remaining railway lines

2019: The Site and surrounding area appears as it does today. Since the 1998 photograph the majority of the Site has not significantly changed. The southern area of the Site, in the southern part of the State Mine Heritage Park appears as the levelled elevated mounded area as it does currently. There is no evidence of any remnant stockpiling or other materials seen in the 1998 photograph. The large shed that was seen to be present on the State Mine Heritage Park site has been extended to approximately triple the size of the original shed. The roadways, parking and other features on the State Mine Heritage Park site appear well established.

2024 (Figure 2): The Site and surrounding area do not appear to have significantly changed since the 2019 photograph. The conditions of the Site in this photograph are consistent with the observations made by CONSARA in April 2025.

2.3 Site Description

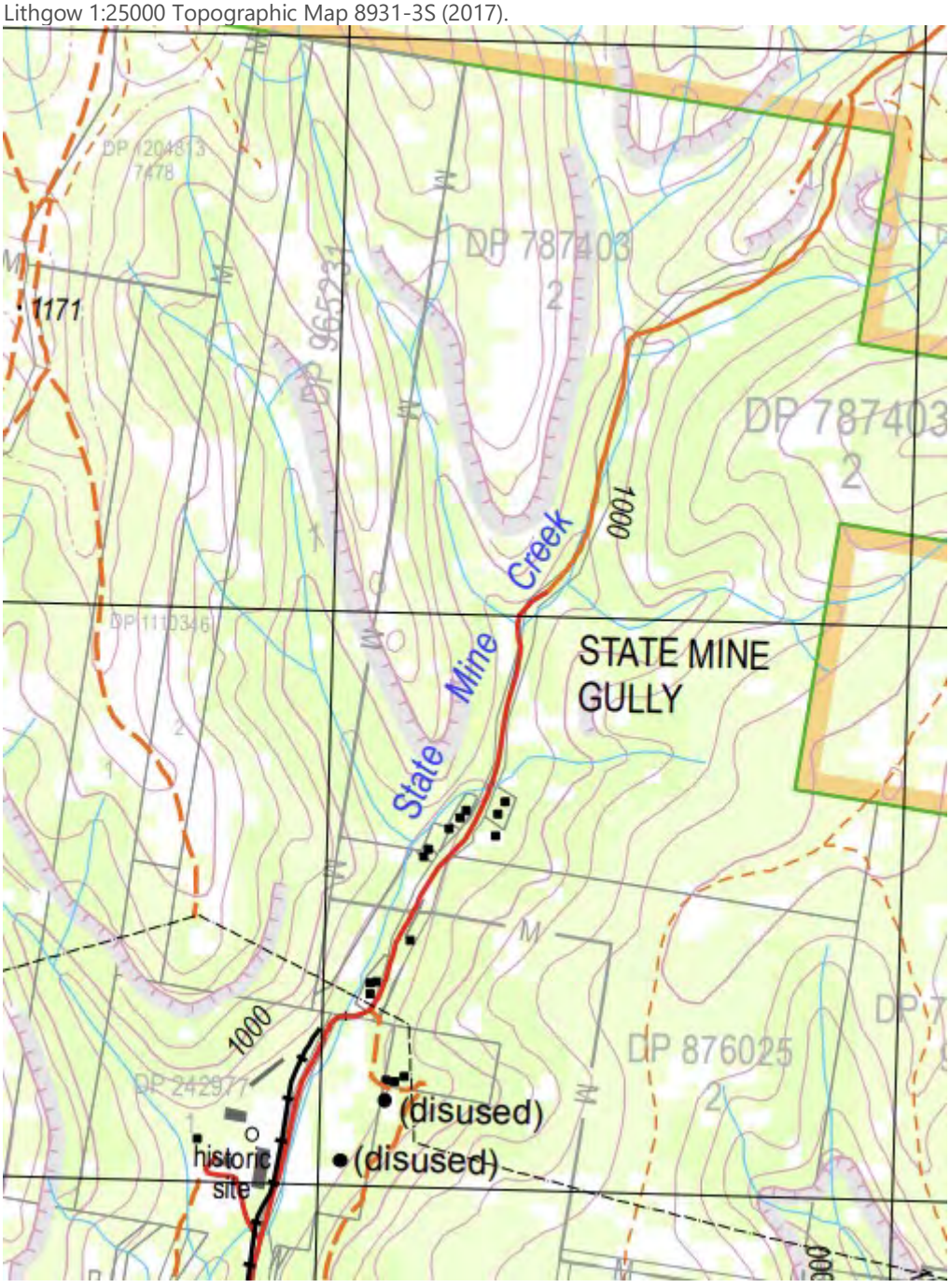
A site inspection was completed by CONSARA Principal Environmental Scientist Rebecca Organo on the 30 April 2025 and the observations are detailed in Table 1 below and photographs of the Site are provided in the Plates section of this report. As part of this inspection, interviews with the State Mine Heritage Park operator Mr Ray Christison were conducted. The information gained from these interviews are also included, where relevant in Table 1 below.

Table 1: Site Inspection Observations

Category	Current Observations
Weather	Cloudy, light rain, approximately 8^0C
Current Use	The Site is primarily comprised of existing bushland present across steep hills and gully slopes, sandstone outcrops, ridges and escarpments that are not readily accessible, though some

Category	Current Observations
	unsealed fire trails and bushwalking tracks were observed in areas proximal to State Mine Gully Road. A large cleared and unsealed area formerly used to access some of the now sealed off mine workings was present directly off State Mine Gully Road, at approximately half way between the Heritage Park at the northern most point of the LMB Park, referred to as the NPWS Secondary Trailhead at Lost City South. At this midpoint some fire trails and bushwalking tracks into the existing heavily forested areas extended from this area. It is understood this location will serve as one the proposed shuttle bus stops for the LMB Park to be constructed directly on State Mine Gully Road. The southern area of the Site where the primary trailhead is to be located is on the southern area of the current State Mine Heritage Park. The Heritage Park is currently accessible via roadway off State Mine Gully Road and is periodically open to the public and comprises a number of former mine related buildings and remanent aboveground mining structures that have been converted into a museum, with some spaces also hired as artists studios and for other similar purposes. The Heritage Park also includes a number of small former magazine huts, that are vacant and unused. The areas surrounding the buildings and other features are primarily grassed, with a number of bitumen sealed and gravel roadways and carparking areas, primarily around the museum building. A number of small mounds are present in areas near the magazine huts which appear to be comprised of a mix of reworked clays and sandstone, coal fragments and coal chitter. The southern part of the Heritage Park forms the part of the Site on which the primary trailhead area (carpark and amenities) of the LMB Park will be located, as shown on Figure 5. This area is distinct from the surrounding area of the Heritage Park as it is a mounded area that is approximately 0.5 to 1.5 m higher than its surrounds and is covered with grass. The area was noted to be vacant and not used for any specific purpose. It is understood that this mound has been formed from the placement of coal chitter, a by-product of the historical combustion of coal that occurred in a number of boilers that operated on the former mine area to provide power to the former mining operations. The chitter is understood to have been covered with a capping layer comprising crushed sandstones and natural clays that is covered by grasses. This area of the Site is currently accessible to users and visitors of the remaining areas of the Heritage Park.
Site Features	At the time of inspection, the following features and surface coverings were observed and noted at the Site: - From accessible vantage points from State Mine Gully Road and the State Mine Heritage Park the majority of the Site was observed to be natural bush, dominated in the lower areas, gullies and gully slopes by wet sclerophyll forests characterised by tall eucalypt trees with straight trunks and leafy tops. The understories was dominated by shrubs and smaller trees, ferns and similar species. The Site is dominated by distinct steep sloping areas, areas of large sandstone outcrops, ridgelines and escarpments. Along the ridgelines and escarpments toward and at the highest northern area of the Site, the vegetation was dominated by native grasses, small shrubs and smaller trees, typical of a dry sclerophyll forest; - The only areas that weren't covered by natural bush on the Site were as follows: o The State Mine Heritage Park located in the south, with the area of the Site on the southern part of the Heritage Park observed to be mounded area that is approximately 0.5 to 1.5 m higher than its surrounds and is covered with grass. The area was noted to be vacant and not used for any specific purpose. It is

Category	Current Observations
	understood that this mound has been formed from the placement of coal chitter. The chitter is understood to have been covered with a capping layer comprising crushed sandstones and natural clays that is covered by grasses. o A larger cleared unsealed area located just off to the west of State Mine Gully Road at approximately half way between the State Mine Heritage Park and the Secondary Trailhead. It is understood that this area was formerly one of the access points into the mine workings. A bricked up area and another large concrete structure also formerly used as part of the coal mining operation were observed in this area. This area was covered with gravels and further to the east, the bush commenced. A fire trail and other smaller bushwalking tracks could be seen. A creekline could also be seen running along the eastern extent of this area down to the south to south-east; o A small cleared unsealed area just off to the west of State Mine Gully Road at the northern most point of the LMB Park where the proposed Secondary Trailhead at Lost City South will be located. It appears cars have used this small cleared area for parking and some narrow bushwalking trails could be seen to extend into the bush from this area. This area is not within the Site and is part of the proposed NPWS trail development.
Chemical and/or Hazardous Goods Storage	During the inspection there was no evidence of current or historical presence of large scale storage of fuels, oils or other chemicals on the Site itself, however, it is likely that the operation of the former mine on the areas of the State Mine Heritage Park would have historically used fuels, though it is understood that the coal mine was powered by coal that was combusted in boilers that were historically located on the State Mine Heritage Park area, but not within the southern area that forms part of the Site. The former magazine huts also would have historically stored various types of explosives for use in the coal mining activities, however, during inspection they were noted to be empty. There was no evidence of recent or current chemical or hazardous goods storage on the State Mine Heritage Park site or on the Site itself.
Surface Coverings	The surfaces of the Site are primarily covered by native vegetation. The southern area of the State Mine Heritage Park that is within the Site was covered with grasses and some stands of trees along its western edge. The cleared unsealed area located just off to the west of State Mine Gully Road at approximately half way between the State Mine Heritage Park and the Secondary Trailhead was covered with gravels and further to the west, the bush commenced. Observed fire trails and bushwalking trails into the Site were noted to be unsealed. The grassed areas and vegetation across the Site were noted to be in good condition with no evidence of stress.
Surface Drainage	The Site comprises steep gully slopes, ridgelines and escarpments, with any surface water flows dominated along natural creeklines that flowed from the higher northern areas of the Site, down towards the base of the gully in the south. On the State Mine Heritage Park site there did not appear to be any constructed drainage system, with surface water flows likely to drain to the creekline that runs to the east to south-east. The southern area of the Site is noted to be a grassed elevated mound, with the creekline located to the south. It is unlikely any sheet flows of surface water would be generated during rainfall, with waters likely to accumulate on the surface and be subject to vertical infiltration or evapotranspiration.
Topography	The topography of the Site is dominated by a series of escarpments and ridgelines in the north,

Category	Current Observations
	north-east and west of the Site at elevations of between 1000 to 1200 m ADH, that slope steeply to the south forming valley, or gully, with a relatively flat area at the base at approximately 940 m AHD. The topography of the Site can be seen below, extracted from the Lithgow 1:25000 Topographic Map 8931-3S (2017). 
Security	The State Mine Heritage Park site has a fence and locked gates at the entrance from State Mine Gully Road. The remainder of the Site remained unfenced with main access direct from State Mine Gully Road.

Category	Current Observations
Vegetation	The vegetation that was present on the Site appeared healthy and no sign of stress was observed.

2.4 Site Environmental Setting and Condition

2.4.1 Surrounding Land Use

The majority of the Site is located across an area of relatively untouched native bush which continues beyond the western, northern and eastern boundaries of the Site. In the southern areas of the Site at the base of the gully, the State Mine Heritage Park and former power station sites occupy the majority of the land. Just to north along part of State Mine Gully Road are a number of single residential dwellings that remain occupied for residential purposes.

In the gully area, the Site only covers the southern area of the State Mine Heritage Park, with the areas directly to the north and east occupied by the State Mine Heritage Park. Directly to the south are areas of remanent bush, cleared grassed areas and some fire trail unsealed roads and tracks. This area appears to be unoccupied for any purpose and contains some areas with mounded areas that appear to be placed coal chitter. Further to the south are the residential areas of Lithgow.

2.4.2 Climatic Conditions

The Site is located in Lithgow NSW which is in the lower western reaches of the Blue Mountains and has a moderate oceanic climate with mild to warm summers and cool to cold winters. located in the far south-eastern area of Australia. The climate is temperate oceanic that has a cool winters and is warm to hot in the summer. Average annual temperatures in Lithgow range from a minimum of 0.7 to 12 °C in the winter to a maximum of 23 to 25°C in the summer. Average annual rainfall in Lithgow is approximately 860 mm per year.

2.4.3 Topography and Soils

As described in Table 1, the topography of the Site is dominated by a series of escarpments and ridgelines in the north, north-east and west of the Site at elevations of between 1000 to 1200 m ADH, that slope steeply to the south forming valley, or gully, with a relatively flat area at the base at approximately 940 m AHD. The topographic contours shown on the image from the Lithgow 1:25000 topographic map provided in Table 1 illustrate how steep the slopes are to the base of the gully.

The soil landscapes on the escarpments, ridgelines and upper slopes on the Site are likely to comprise siliceous sands and lithosols. Soils on the midslopes are likely to be yellow, red and brown podzolic soils and on the lower areas at the base of the gully are likely to be grey to brown alluvial soils, peaty loams or grey hydrosols

2.4.4 Surface Water, Drainage and Flood Potential

The Site comprises steep gully slopes, ridgelines and escarpments, with any surface water flows dominated along natural creeklines that flowed from the higher northern areas of the Site, down towards the base of the gully in the south. On the State Mine Heritage Park site there did not appear to be any constructed drainage system, with surface water flows likely to drain to the creekline that runs to the east to south-east. The southern area of the Site is noted to be a grassed elevated mound, with the creekline located to the south. It is unlikely any sheet flows of surface water would be generated during rainfall, with waters more likely to accumulated in surface depressions and be subject to the process of evapotranspiration and/or vertical infiltration.

The potential for minor localised flooding on the Site under high rainfall conditions is considered to be low given the location of the Site. The flood maps for the Site indicate potential for minor flooding (backwater) occurs to the west of the primary trailhead during 1% AEP flood conditions. It is expected that some erosion along creeklines may have occurred, particularly where surrounding areas have been disturbed by clearing.

2.4.5 Regional Geology and Hydrogeology

The Site and surrounding area are underlain by Triassic aged Narrabeen Group that is comprised of quartz lithic to quartzose sandstone, conglomerates, mudstones, siltstones and coal that is underlain by the Permian aged Illawarra Coal Measures with the Cullen Bullen Sub-group that contains the Blackmans Flat conglomerate formation that overlies the Lithgow Coal. The Lithgow Coal is underlain by the siltstones and conglomerates of the Marrangaroo Formation (*1:100000 Western Coalfield Geological Map of NSW Series* 1992).

Regional groundwater is expected to be present at various depths as an unconfined aquifer in fractured sandstone or siltstone rocks. Where present, groundwater is expected to flow through fractures such as joints and bedding plane partings or via permeable lenses of sandstone, siltstone or laminate. Thus, the transmissivity of the aquifer is dependent on the frequency, openness and orientation of the fracturing present. Given the geological landscape. shallow groundwater is not expected to be present underlying the Site.

Groundwater present in the sandstone units is expected to be generally of reasonable quality with low salinity, whilst groundwater present at greater depths within coal seams siltstones, clays or sands is expected to be of higher salinity. Based on local and regional topography and surface drainage, groundwater in the bedrock is expected to flow to the south.

2.5 NSW EPA Contaminated Site Registers

A search of the NSW EPA contaminated site registers for notified and regulated sites was conducted on 4 May 2025. The results of these searches identified that the Site is not listed on any of these registers and there are no properties located proximal to the Site are that listed.

2.6 Previous Environmental Investigations or Reports

The State Mine Heritage Park site operators were not aware of any contamination assessments completed on the former mine site, however, they did locate a hardcopy of a contamination assessment report 'Contamination Survey, Lithgow SRA Power Station' prepared by Enviroscienes, completed on the former power station site located on the eastern side of State Mine Gully Road in 1993. CONSARA's review of this report identified that the report documented test-pitting and soil sampling, and surface water sampling works undertaken to assess for a range of contaminants on the former power station site. The surface and sub-surface conditions encountered included at shallow depths, particularly in the southern areas of the power station site, the presence of coal wastes and ash that had been used to fill these areas. Samples collected from these identified coal wastes were subject to laboratory analysis, with concentrations of a range of potential contaminants reported that were well below the current ASC NEPM guidelines for open space and recreational land uses.

Whilst 'contamination' was identified to be present in the shallow soils on parts of the former power station site, in the form of some fragments of bonded cement containing asbestos and some elevated concentrations of hydrocarbons and metals, the concentrations reported across the entire power station site in shallow and deeper soils were well below the current ASC NEPM guidelines for open space and recreational land uses. It is understood that some subsequent 'remediation' works were completed on the power station site to remove these materials. The power station site is not part of the Site and lies to the western side of State Mine Gully Road adjacent to the State Mine Heritage Museum.

Given that the power station site is located to the east of the mine site and to west of the State Mine Gully Road, it is considered that any contamination identified would be specific to the power station site and its operation, which was separate to the operation of the mine site. However, it is considered relevant to note that the concentrations

of metals, polycyclic aromatic hydrocarbons and petroleum hydrocarbons present in the coal wastes used as fill at the surface and shallow sub-surface were either less than the laboratory detection limits or were less than the current guidelines for open space and recreational land use. The condition of these coal wastes are considered likely to be consistent with the coal chitter that is present in the mounded area in the southern part of the Site, in the south of the State Mine Heritage Park.

3 Conceptual Site Model

Based on the reviews of background and historical information, the current Site condition and environmental setting, a conceptual site model (CSM) has been developed to provide a discussion of the Site setting, to identify any potential areas and contaminants of concern on the Site and to identify the potential receptors of contamination that may be present on the Site.

3.1 Site Setting

The majority of the Site is comprised of native bushland which, apart from the establishment of fire trails and some limited bushwalking tracks and a limited area where a mine shaft formerly operated to provide ventilation to the underground mine workings, has never been subject to development for any use. The only area of the Site that has been subject to significant development is the area in the south of the Site that is within the southern part of the State Mine Heritage Park.

This southern area of the Site was formerly part of the Lithgow Coal Mine operations, which had its main headworks, including main shafts, railway lines, powerhouse and associated buildings that occupied the majority of the northern and central parts of the now State Mine Heritage Park. Based on review of historical information, it does not appear that the southern part of the State Mine Heritage Park was occupied by any mine shafts, railway operations, powerhouses or other mine structures.

Since the closure of the coal mine in the early 1950s it appears that the southern area of the State Mine Heritage Park had placed to it stockpiles of discarded coal chitter, a byproduct of the burning of coal used in the power house. It is understood that these stockpiles also could comprise sandstone rocks, shales and some raw coal. Ultimately, these stockpiles were placed to form the current elevated mound that occupies the southernarea of the Site. The presence of this mounded area appears evident in the 1969 aerial photograph and continues to be present with little to no change until the late 1990s when it was subject to some earthworks that appear to have removed some of the material and then formed the current shape of mound, including the sloping batters to the south-east toward the creek. It is understood that at some time in the mid 2010s this mounded area was subject to covering with some clay soils and crushed sandstones, to form a cap across the area, however, there is no documentation of this work having occurred. Whilst there are records of some fires occurring within the placed coal chitter in this southern area of the Heritage Park and also to the west of this area, it is understood that fires were extinguished with water and through the use of excavators to dig out the burning chitter and then covering it with clean soils to prevent future fire risks.

Overall, it is considered that apart from the presence of coal chitter and potentially limited raw coal in the mound in this southern part of the Site, there is no evidence of any other significant potentially contaminating activity having occurred on the Site over the past five to six decades.

3.2 Potential Areas and Contaminants of Concern

Given the Site setting, as described in Section 3.1, it is considered that the majority of the Site has a negligible potential for soil and/or groundwater contamination to be present, with the southern area of the Site where the coal chitter mound is located having a low to negligible potential for contamination to be present.

It is noted that abandoned coal mine workings can present at risk of producing methane, which may oxidise within the mines to produce carbon monoxide and carbon dioxide. The underground coal mine workings located on average 100 metres beneath areas of the Site extend for a number of kilometres laterally and are understood to have been flooded since at least the early 1950s. There has never been any documented evidence of methane migration from the coal mine workings to the surface at the State Mine Heritage Park site and it is expected that the risk of such gas being generated and migrating through either advection or diffusion almost 100 metres to the surface such that it could create a risk of harm to users of the Site is considered to be low. Similarly, coal chitter present in stockpiled or placed areas can have a risk of combusting, which could pose a risk to the safety of users

of this area of the Site., however, given the many decades this material has been in place, this risk also considered to be low.

Notwithstanding this and adopting a conservative approach, a source of potential contamination to the surface and sub-surface of this southern area of the Site could be from the coal chitter itself or from the presence of raw coal or any associated coal ash. Contaminants associated with coal chitter, raw coal or coal ash would primarily be petroleum hydrocarbons, polycyclic aromatic hydrocarbons and heavy metals.

A summary of the areas of potential concern (AOPC) and contaminants of potential concern (COPC) that have been identified are as follows:

Table 2: AOPC and COPC

AOPC	Potentially Contaminating Activity	COPC
Southern area of the Site, in the south of the State Mine Heritage Park	Presence of coal chitter and limited raw coal and perhaps coal ash in the elevated mounded area	TPHs, PAHs and heavy metals, hazardous gas such as methane

The abbreviations have the following meanings: Metals = heavy metals (arsenic, cadmium, chromium (total), copper, lead, mercury, nickel and zinc); TPH = Total Petroleum Hydrocarbons as Total Recoverable Hydrocarbons; PAHs = polycyclic aromatic hydrocarbons,

The identified APOC and COPC presented in Table 2 is considered to be highly conservative. As noted in Section 2.6, results of historical sampling of coal wastes used as fill materials on the former power station site have identified concentrations of petroleum hydrocarbons and polycyclic aromatic hydrocarbons to be less than the laboratory detection limits and identified concentrations of metals that were well below the current ASC NEPM criteria for open space and recreational land use. It is considered likely that these 'coal wastes' would be of similar composition to the coal chitter present on the Site, meaning that the coal chitter has low potential for contamination to be present.

3.3 Sensitive Receptors and Exposure Pathways

3.3.1 Human Receptors

Given that the Site is to be used for open space and recreational uses in an outdoor environment, with respect to human use the potential future receptors (and the associated exposure pathways) for potential contaminants sourced from the Site include the following:

- Current and future occupiers and users (Adults and children visitors and users) of the Site who have access to coal chitter or raw coal or coal ash present at the surface of the Site – dermal contact with soils, ingestion of soils or dust generated from soils ; and
- Workers involved in intrusive maintenance works on the Site in areas where COPC maybe present in the surface and sub-surface soils/groundwater– dermal contact with soils/groundwater, inhalation of dusts generated from soils, inhalation of volatile compounds from soils/groundwater, ingestion from soils/groundwater or dusts generated from soils or from groundwaters.

It is noted that the nearest off-site human receptors to the Site are residential occupants of residential dwellings located on the State Mine Gully Road,. Complete pathways to off-site receptors are not considered to be present given the surface conditions on the Site and the location and nature of surrounding land uses.

3.3.2 Environmental Receptors

Given the location of the Site, it is considered that the receiving environments or environmental receptors for potential contaminants sourced from the Site are the local creeks and waterways. These areas are expected to ultimately discharge to the south and south-east along the existing creeklines that discharges to the south to Farmer Creek which is tributary of Coxs River. Exposure pathways to aquatic species present in the waters or sediments of these areas would be through uptake of dissolved compounds in water or through ingestion and update from contaminants adsorbed onto sediments.

It was noted that the creekline that runs through the lower gully and discharges to the south-east would have been subject to a high level of historical disturbance and would have been the receiving body for historical wastes, wastewaters and discharges from the former coal mine and power station operations. Whilst the quality of the waters in these creeklines would have significantly improved since the closure of the mine and then the power station, over the past few decades, the lower reaches of this creek that runs through the northern part of Lithgow would still receive significant flows of stormwater and surface water runoff from the surrounding urban areas and is considered to be a highly disturbed system.

In addition, with respect to human use, groundwater beneath and in the local region surrounding the Site, is known to be classified as not suitable for beneficial uses. The value of this groundwater resource is considered to be moderate.

4 Discussion and Conclusions

4.1 Discussion of Results and the CSM

The results of this Stage 1 ESA have identified that the majority of the Site is comprised of native bushland which, apart from the establishment of fire trails and some limited bushwalking tracks and a limited area where a mine shaft formerly operated, has never been subject to development for any use. The only area of the Site that has been subject to significant development is the area in the south of the Site that is within the southern part of the State Mine Heritage Park.

This southern area of the Site was formerly part of the Lithgow Coal Mine operations, which had its main headworks, including main shafts, railway lines, powerhouse and associated buildings that occupied the majority of the northern and central parts of the now State Mine Heritage Park. However, it does not appear that this southern area of the State Mine Heritage Park was occupied by any mine shafts, railway operations, powerhouses or other mine structures. Since the closure of the mine in the early 1950s the former mine site has remained relatively unchanged, with no significant developments apart from the demolition of some structures and construction of a new shed.

After the closure of the mine, it appears that the southern area of the State Mine Heritage Park site had placed to it stockpiles of discarded coal chitter, a byproduct of the burning of coal used in the power house. It is understood that these stockpiles also could comprise sandstone rocks, shales and some raw coal resulting from the washing of coal. Ultimately, these stockpiles were placed to form the current elevated mound that occupies this area of the Site which has been present since at least 1969, though was subject to some excavation, removal of coal chitter and reshaping to its current form in the late 1990s. Whilst there are records of some fires occurring within the placed coal chitter in this southern area of the Heritage Park and also to the west of this area, they appear to have occurred concurrent with bushfire activity in the local region. It is understood that fires were extinguished with water and through the use of excavators to dig out the burning chitter and then covering it with clean soils to prevent the risk of future fires forming. It is understood that at some time in the mid 2010s this mounded area on the Site was subject to covering with some clay soils and crushed sandstones, to form a cap across the area, however, there is no documentation of this work having occurred.

Whilst a source of potential contamination to the surface and sub-surface of the southern area of the Site could be from the underlying coal chitter, raw coal or any associated coal ash, given that the mounded area has been present for many decades and is covered by grasses and potentially a layer of soils, the risk of a contamination being present at the surface or near surface that would present a risk of harm to human health is considered to be low to negligible. This is also supported by the results of the historical investigations completed on the power station site, where coal wastes, likely to be similar in composition to the coal chitter, and used as fill materials were reported to contain low or less than detectable concentrations of a range of potential contaminants of concern.

Further, whilst abandoned coal mine workings can present at risk of producing methane, the depth and extensive nature of the underground coal mine workings beneath areas of the Site and that they are known to be flooded, it is expected that the risk of such gas being generated and migrating through either advection or diffusion almost 100 metres to the surface such that it could create a risk of harm to users of the Site is considered to be unlikely. Similarly, coal chitter present in stockpiled or placed areas can have a risk of combusting, which could pose a risk to the safety of users of this area of the Site, however, it is considered given the aged nature of the placed materials that such a risk under usual conditions would be unlikely.

Overall, given the history of uses on the Site, it is considered that the majority of the Site has a negligible to no potential for soil and/or groundwater contamination to be present, with the southern area of the Site where the coal chitter mound is located having a low to negligible potential for soil contamination to be present and a low to unlikely risk of hazardous ground gases being generated.

4.2 Assessment of Site Suitability

The LMB Park proposed for the Site will provide access to areas of the Site that are currently inaccessible and will continue the current open space and recreational uses of those areas currently accessible. The LMB Park will require the construction of mountain bike trails through the Site, as shown on Figure 2 and the construction of the carpark and amenities areas on the southern part of the Site, as shown on Figure 5 and Figure 6. The carpark is to be constructed on top of the existing mounded area, with a ramp to be constructed for access from the entrance to the State Mine Heritage Park and associated outdoor picnic areas, landscaping, limited toilet facilities and signage. The proposal does not include any major earthworks, landforming or similar and does not include the construction of any buildings or indoor spaces, with the LMB Park to be an outdoor park.

The results of this Stage 1 ESA have not identified conditions or potential conditions that are considered to affect the suitability of the Site for the open space and recreational uses proposed by the LMB Park. Overall, it is considered that the Site is suitable for open space and recreational land use.

4.3 Requirements During Construction Works for the LMB Park– Construction Environmental Management Plan

The construction works required for the proposed LMB Park will need to provide consideration to how the surface and sub-surface conditions on the Site are managed during the works.

It is expected that the construction works will require some limited disturbance of the surface and near-surface soils present on the Site, particularly in the southern area of the Site where the carpark and amenities is to be located. It is considered that the disturbance of the surface and sub-surface environment on the Site may pose a risk to the surrounding environment through the potential for the migration of soils or surface waters from the Site to off-site areas, as well as to construction personnel. It is considered that during construction works these potential risks be managed via the implementation of a Construction Environmental Management Plan (the CEMP).

The CEMP should be prepared to set out the environmental management measures that are required to be implemented during construction works in order to manage identified risks to Site personnel and the environment to ensure that:

- Comprehensive control measures are implemented to prevent the migration of materials or waters off-site or within the Site;
- Works that require disturbance of existing fill materials or natural soils are undertaken in a manner that protects the health of the workers and users of the Site;
- Any materials excavated from the Site are appropriately stored, handled and, where required, either beneficially re-used on the Site or disposed of off-Site;
- Imported materials can be demonstrated to satisfy the appropriate requirements for use on the Site; and
- Any unexpected surface or sub-surface conditions are appropriately managed in accordance with the relevant guidelines, regulation and legislation.

The CEMP should be implemented during all phases of the construction works on the Site.

5 Limitations

This Stage 1 ESA has been prepared for the sole purpose of reviewing historical and other background information to inform the provision of the assessment of the environmental condition of the Site, its suitability for its proposed ongoing land use in accordance with generally accepted consulting practice. No other warranty or guarantee, expressed or implied is made as to the advice indicated in this report.

This report should not be used for any other purpose without prior written consent from CONSARA. Accordingly, neither CONSARA nor any member or employee of CONSARA accepts responsibility or liability in any way whatsoever for the use of this report for any purpose other than that for which it has been prepared.

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CONSARA has relied upon and presumed accurate information provided by Central Tablelands Mountain Bike Club and/or any third party (or absence thereof) in making the assumptions made in this report. Nothing in this report should be taken to imply that CONSARA has verified or audited any of the information supplied to us other than as expressly stated in this report. We have assumed this information to be both adequate and accurate for the purposes of this report.

Where findings, observations and conclusions are based solely upon information provided by Central Tablelands Mountain Bike Club and/or a third party and CONSARA do not accept, to the maximum extent permitted by law, any liability for any losses, claims, costs, expenses, damages (whether in statute, in contract or tort for negligence or otherwise) suffered or incurred by Central Tablelands Mountain Bike Club or any third party as a result of or in connection with CONSARA's reliance on any such the information to the extent that such information is false, misleading or incomplete and CONSARA give no warranty or guarantee, express or implied as to such findings, observations and conclusions.

If further information becomes available, or additional assumptions need to be made, CONSARA reserves its right to amend any statements or opinions made in this report.

6 References

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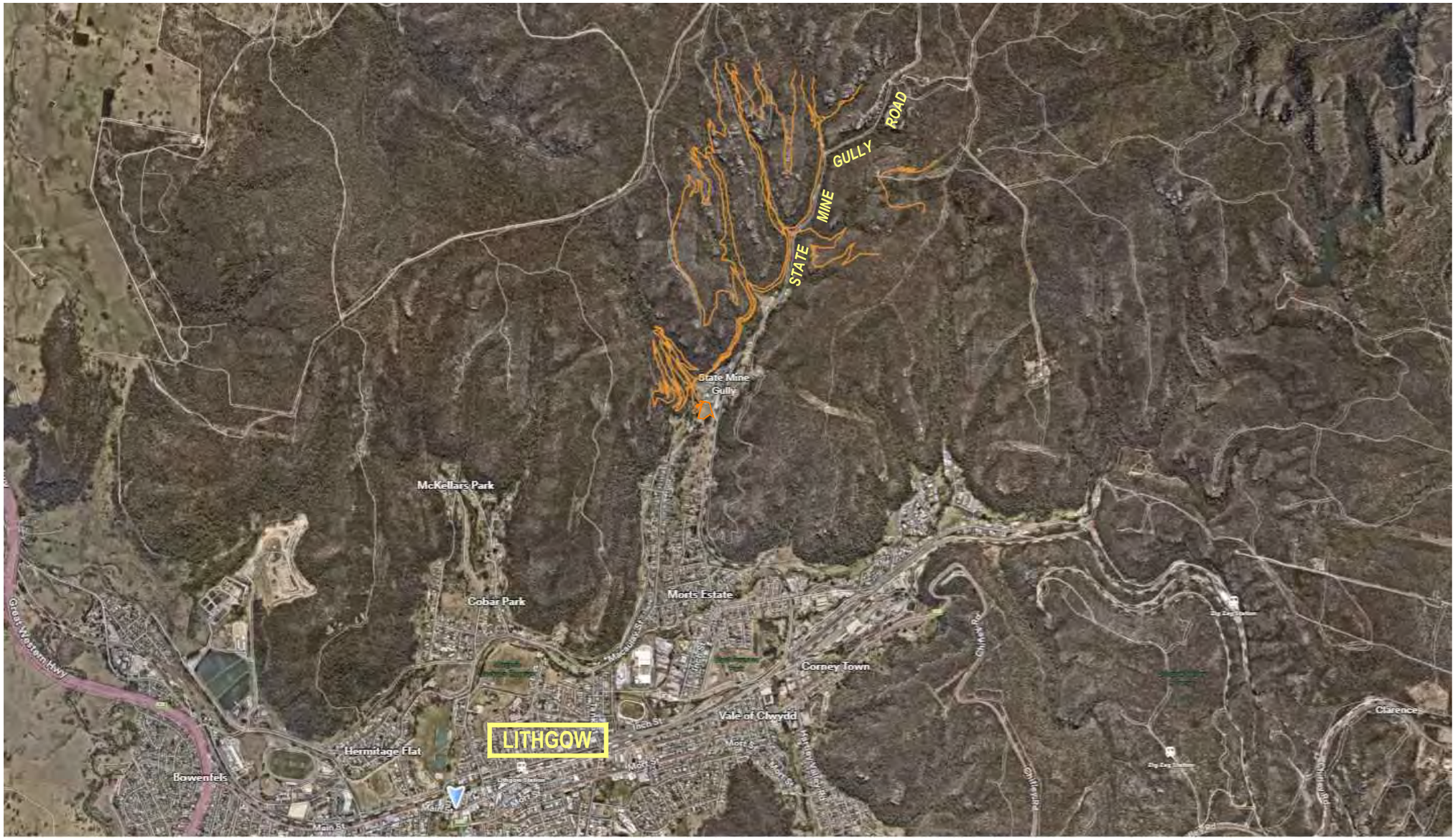
Figures

A3

PROJECT No.	**C241028**
FILE NAME	**F002**
DATE	**13.06.25**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

SITE BOUNDARY



SOURCE: NEARMAPS SEPTEMBER 2024

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(metres approx.)

CLIENT
Central Tablelands Mountain Bike Club

PROJECT
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT, LITHGOW MOUNTAIN BIKE PARK, LITHGOW NSW

TITLE
SITE LOCATION

FIGURE No.
1

CONSARA

A3

PROJECT No.	**C241028**
FILE NAME	**F002**
DATE	**13.06.25**
DRAWN	**RR**
APPROVED	**RO**

SOURCE: NEARMAPS SEPTEMBER 2024

LEGEND

SITE BOUNDARY

0 100 200 300 400 500
(metres approx.)

CLIENT
Central Tablelands Mountain Bike Club

PROJECT
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT, LITHGOW MOUNTAIN BIKE PARK, LITHGOW NSW

TITLE
SITE LAYOUT

FIGURE No.
2

CONSARA

A3

PROJECT No.	**C241028**
FILE NAME	**F005**
DATE	**07.08.25**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

SITE BOUNDARY

SOURCE:

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(metres approx.)

CLIENT
Central Tablelands Mountain Bike Club

PROJECT
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT, LITHGOW MOUNTAIN BIKE PARK, LITHGOW NSW

TITLE
CAR PARK CONCEPT PLAN

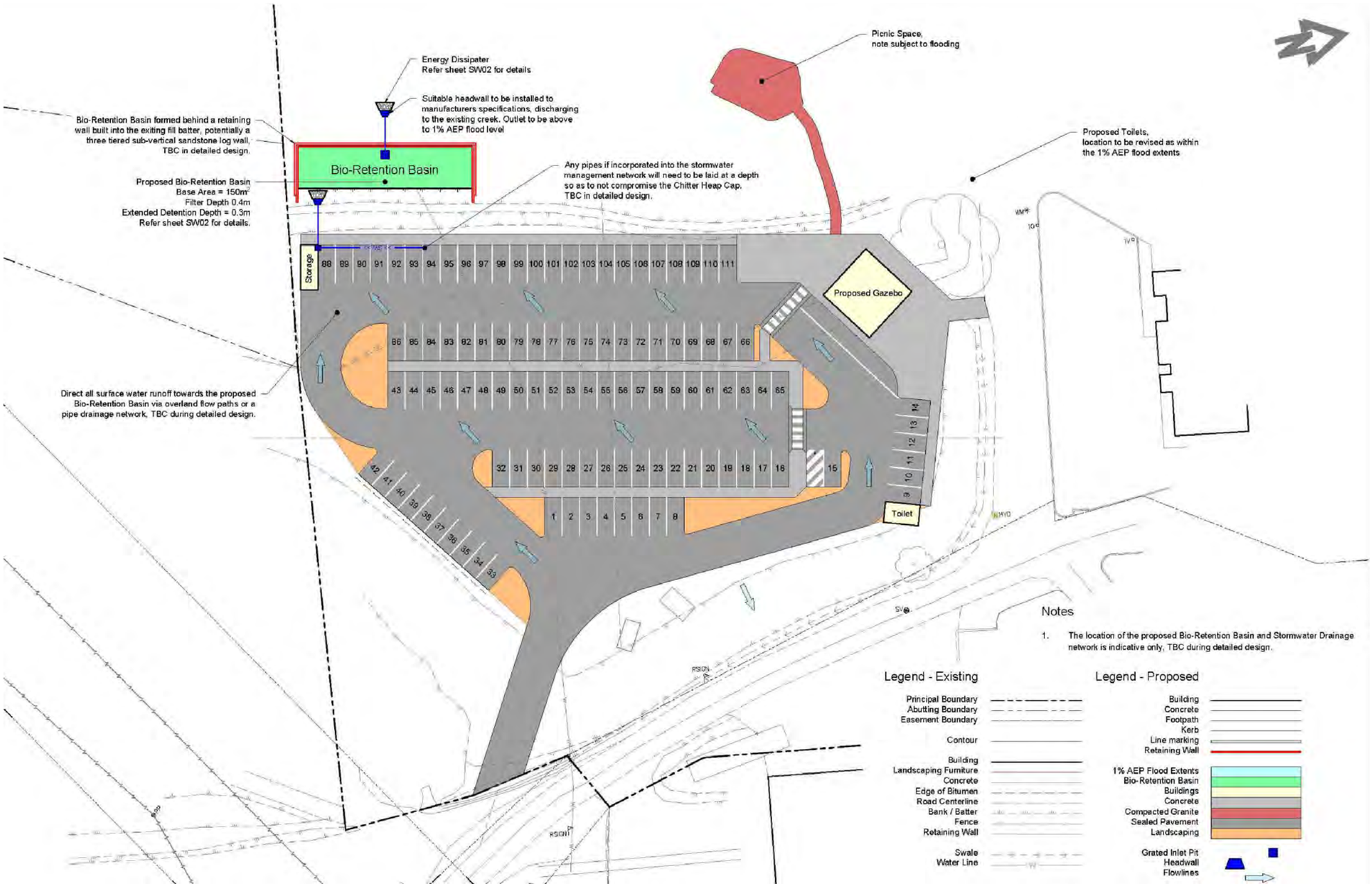
FIGURE No.
5

CONSARA

A3

PROJECT No.	**C241028**
FILE NAME	**F004**
DATE	**07.08.25**
DRAWN	**RR**
APPROVED	**RO**

LEGEND



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CLIENT
Central Tablelands Mountain Bike Club

PROJECT
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT, LITHGOW MOUNTAIN BIKE PARK, LITHGOW NSW

TITLE
CAR PARK LAYOUT

FIGURE No.
6

CONSARA

Plates

Plate 1: View of the State Mine Heritage Park from the southern area on the elevated mound within the Site, view of western boundary of the elevated mound and the Site in this area– looking N

Plate 2: View of the roadway into the State Mine Heritage Park from State Mine Gully Road looking SE

Plate 3: View of southern area of Site on the southern area of the State Mine Heritage Park – elevated mounded area, where proposed carpark and amenities are to be located – looking S

Plate 4: View of roadway that is present along the northern boundary of the southern area of the Site, on the southern area of the State Mine Heritage Park -looking W

Plate 5: View of western edge of mounded area which forms part of the Site – looking SE

Plate 6: View of southern area of Site on the southern area of the State Mine Heritage Park and entrance to the State Mine Heritage Park from State Mine Gully Road — looking SE

Plate 7: View of area of State Mine Heritage Park to the south of the museum building – looking W

Plate 8: View of and entrance to the State Mine Heritage Park from State Mine Gully Road from the top of the mounded area on southern area of Site on the southern area of the State Mine Heritage Park — looking E

Plate 9: View of south-eastern sloping boundary of the southern area of the Site on the southern area of the State Mine Heritage Park — looking S

Plate 10: View along southern – south-eastern sloping boundary of the southern area of the Site on the southern area of the State Mine Heritage Park, creekline runs along base of sloped area — looking SW

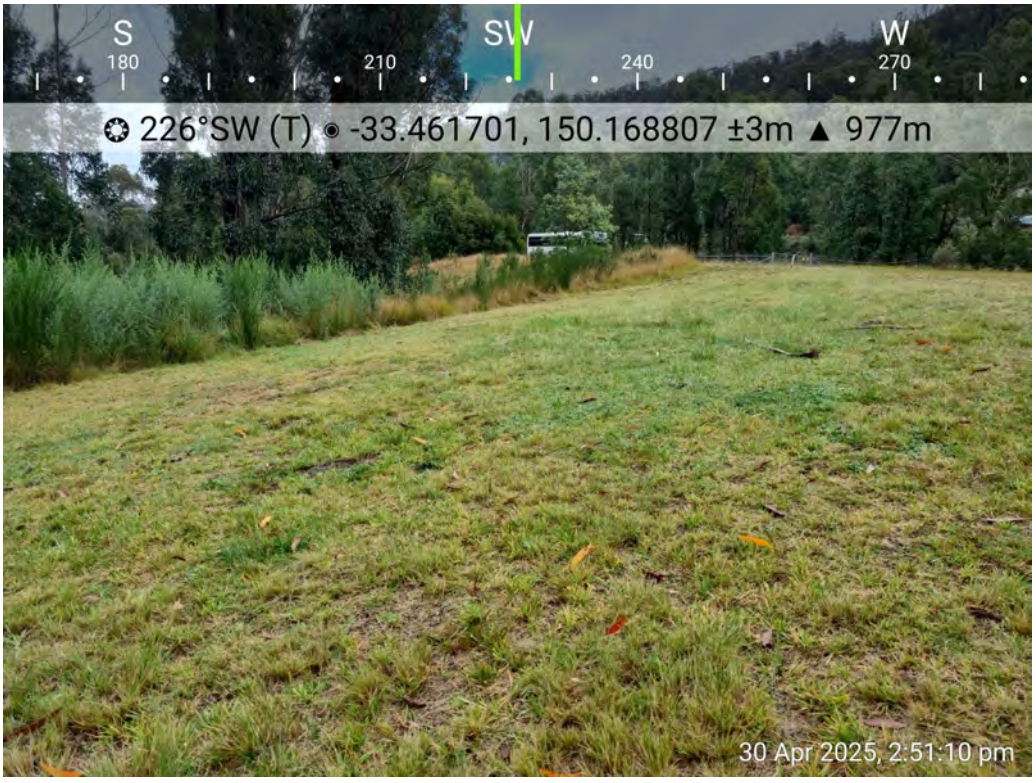


Plate 11: View along southern – south-eastern sloping boundary of the southern area of the Site on the southern area of the State Mine Heritage Park, creekline runs along base of sloped area — looking S

Plate 12: View along southern – south-eastern sloping boundary of the southern area of the Site on the southern area of the State Mine Heritage Park, creekline runs along base of sloped area — looking NE

Plate 13: View across southern area of the Site on the southern area of the State Mine Heritage Park — looking N

Plate 14: View across southern area of the Site on the southern area of the State Mine Heritage Park — looking NW

Plate 15: View of western edge of southern area of the Site on the southern area of the State Mine Heritage Park — looking SSW

Plate 16: View of forested area located to the south-west of the mounded area on the Site – looking W

Plate 17: View of sparse grass cover on part of southern part of Site on mounded area

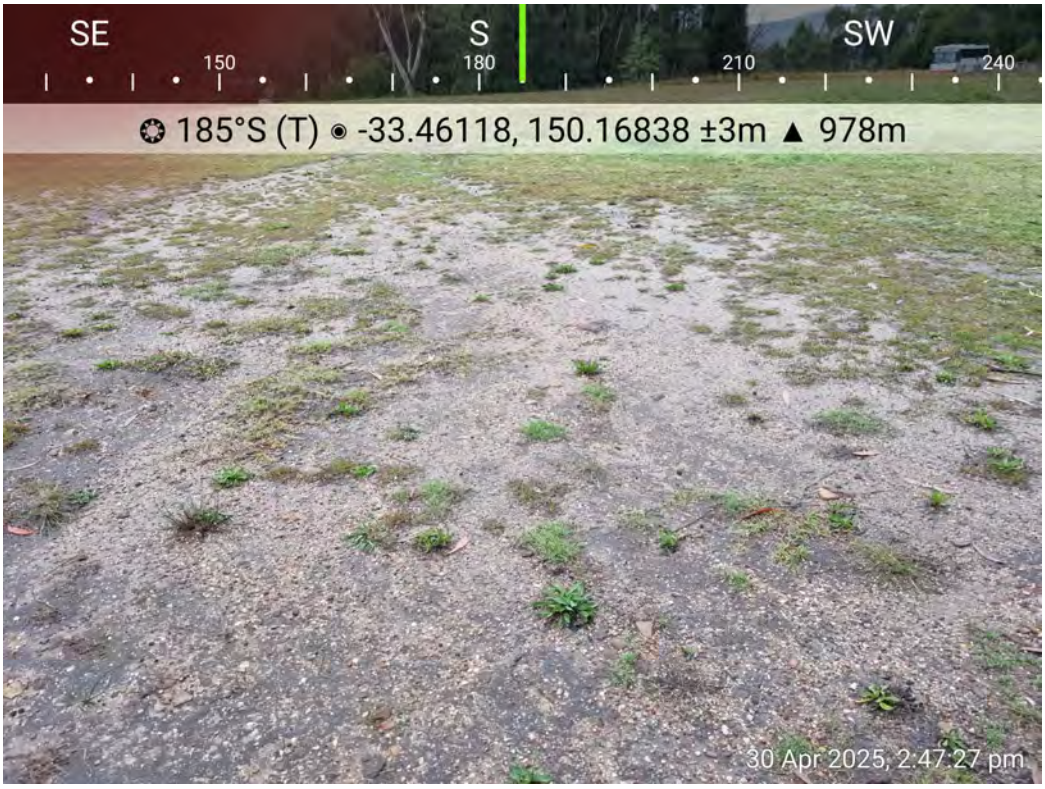


Plate 18: View of former bath house and power house building on State Mine Heritage Park from western area of Park – looking ESE

Plate 19: View of State Mine Heritage Park from western area of Park – looking SE

Plate 20: View of former magazine huts located on western area of State Mine Heritage Park – looking W

Plate 21: View of frontage of magazine huts in Plate 20 looking S

Plate 22: View of side of magazine huts – looking NE

Plate 23: View of cleared area that provides access to the magazine huts – looking WNW

Plate 24: View of cleared area and across to State Mine Heritage Park from location in Plate 23 – looking ESE

Plate 25: View of mound understood to comprise coal chitter, sandstone rocks, shales and raw coal proximal to the magazine huts – looking NE

Plate 26: View of mounded area seen in Plate 25 – looking NW

Plate 27: View of top surface of mounded area seen in Plates 25 and 26 – looking SW

Plate 28: View of exposed materials seen in Plate 27

Plate 29: View of View of top surface of mounded area seen in Plates 25 and 26 – looking S

Plate 30: View of forested areas extending up slopes from the magazine hut area – looking NE

Plate 31: View of cleared area where former mine shaft operated a few km to north along State Mine Gully Road from the mine site remnant structures can be seen. Location for proposed 2nd shuttle bus stop – looking SSE

Plate 32: View of sandstone cliff where former mine shaft operated – same location as Plate 31

Plate 33: View of sandstone outcrops and bush beyond cleared area at same location as Plate 31, 32

Plate 34: View of fire trail extending from cleared area to the west at same location as Plate 31, 32, 33 – looking NW

Plate 35: View of fire trail extending further to west from location seen in Plate 34 – looking WNW

Plate 36: View of creekline through forested area along fire trial in Plate 35 – looking NE

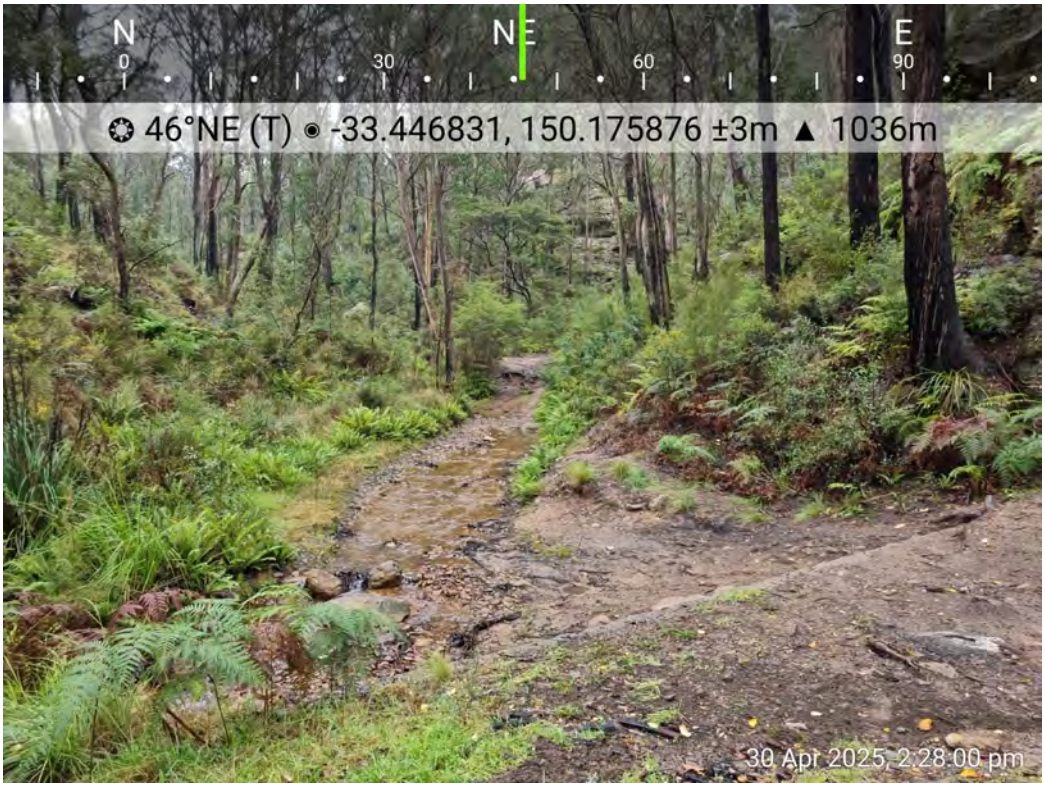


Plate 37: View of sandstone outcrops present in central areas of the Site – looking NNE

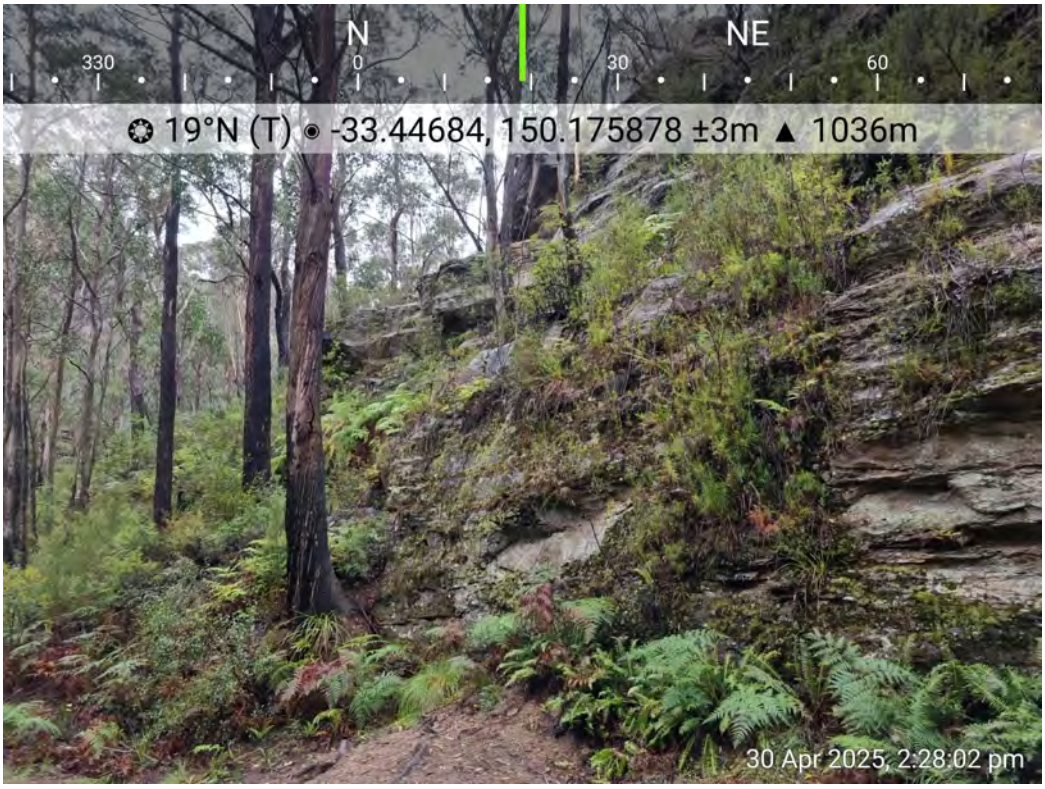


Plate 38: View of typical forest and understory in central areas of the Site – looking NE

Plate 39: View of sandstone escarpments and outcrops in the central areas of the Site – looking NE

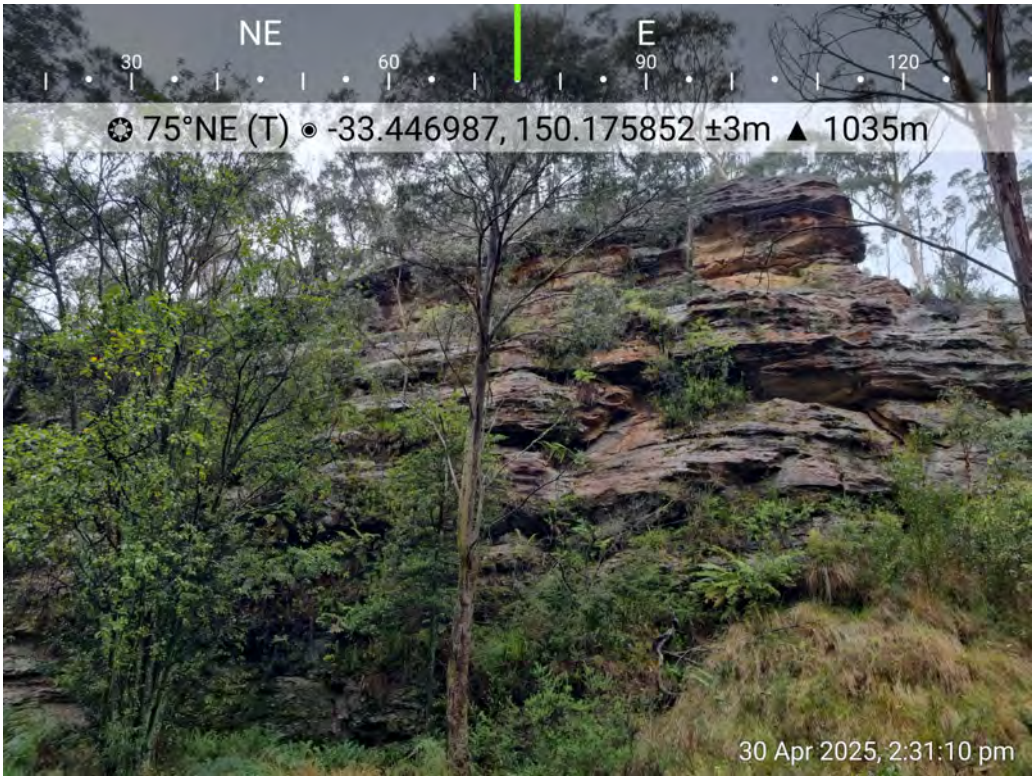


Plate 40: View of cleared area used for parking at area proposed for Secondary Trailhead location at the northern extent of the Site off State Mine Gully Road, which continues to the national park further to the north – looking NE

Plate 41: View across upper higher areas of Site from area off Secondary Trailhead location – looking W

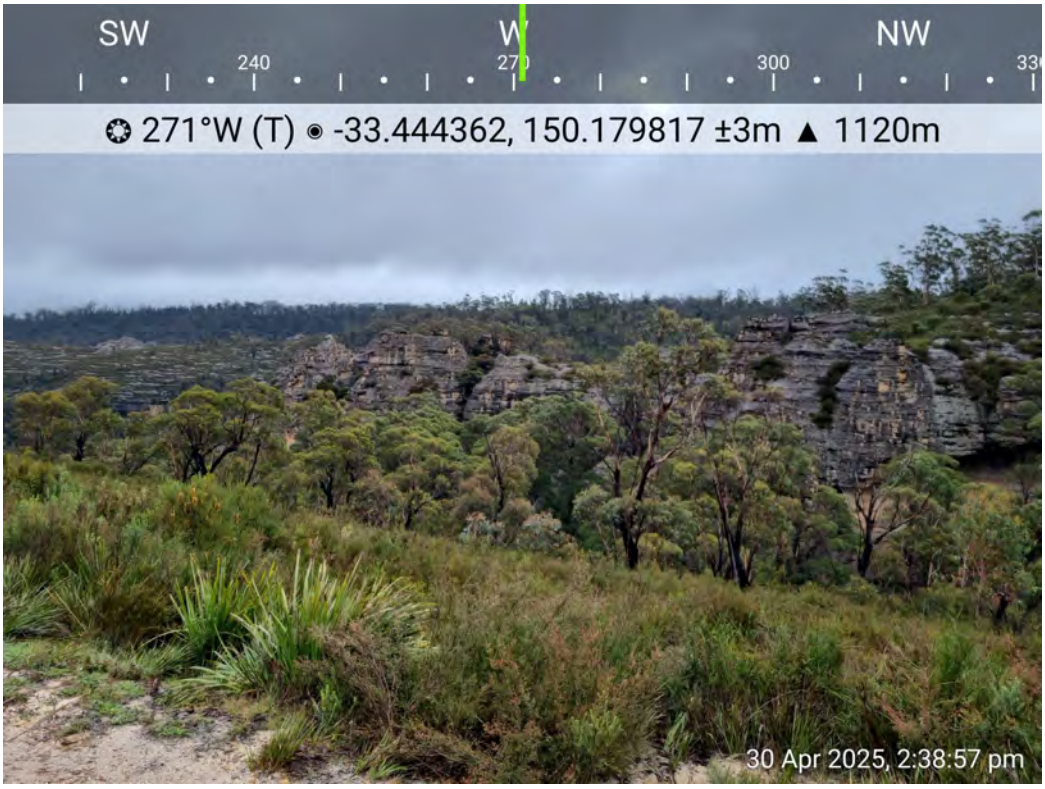


Plate 42: View across upper higher areas of Site from area off Secondary Trailhead location – looking N

Plate 43: View across upper higher areas of Site from area off Secondary Trailhead location – looking W

Plate 44: View across upper higher areas of Site from area off Secondary Trailhead location – looking SW

Plate 45: View of bush and fire trail on Site from from area off Secondary Trailhead location – looking E

Plate 46: View of sandstone escarpments and outcrops on the upper areas of the Site – looking W

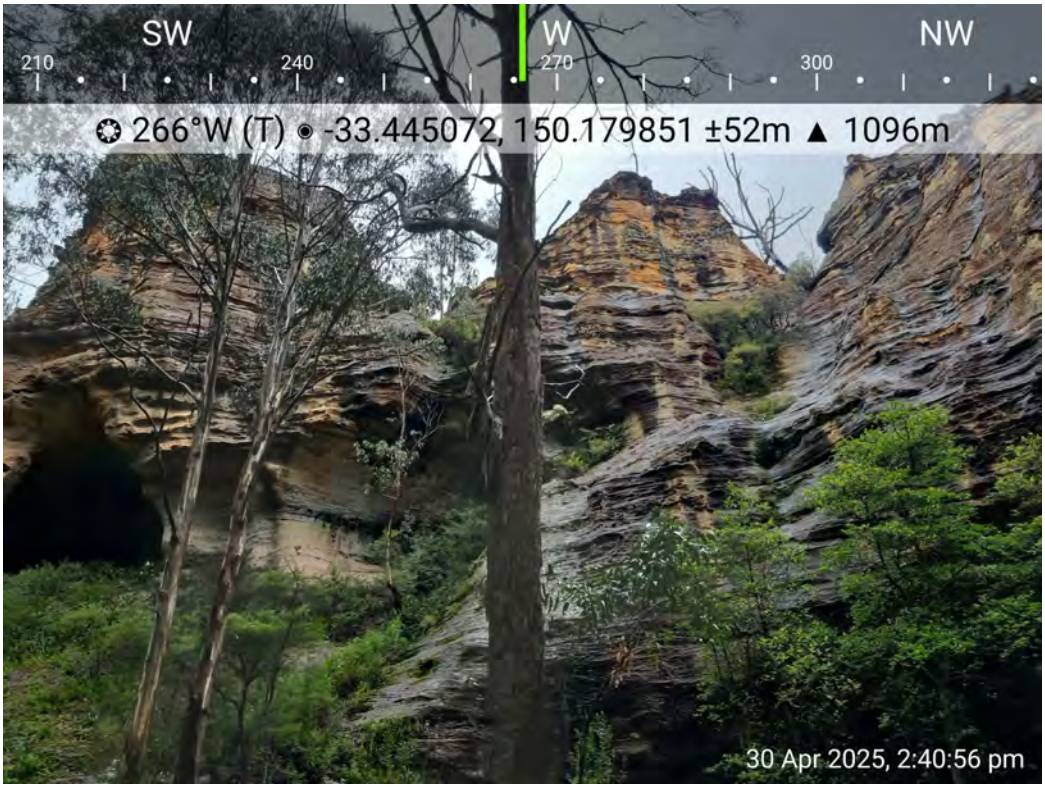
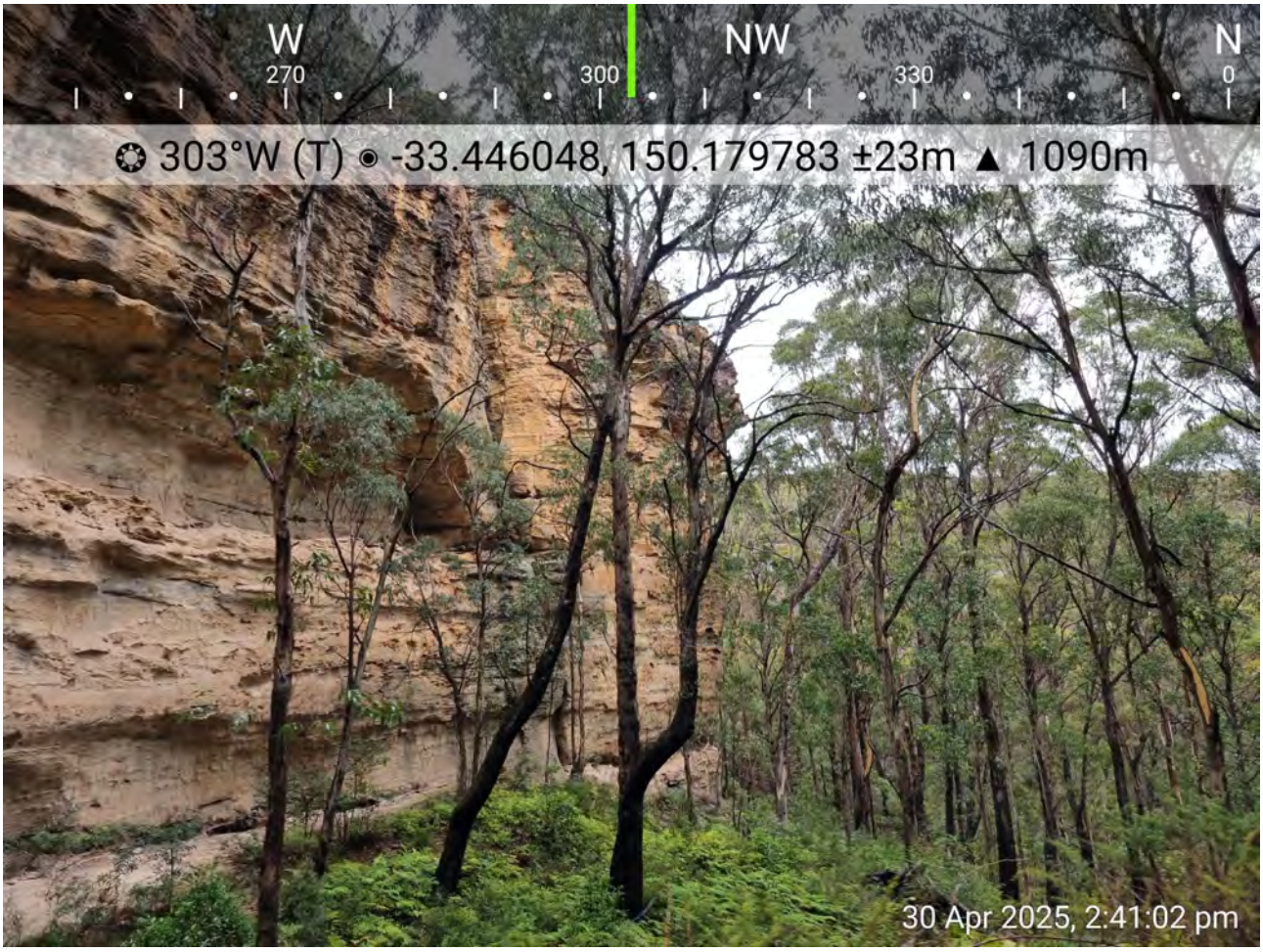


Plate 47: View of View of sandstone escarpments and outcrops and forest on the upper areas of the Site – looking NW



Appendix A: Lithgow Mountain Bike Park Concept Plan and Civil Design

A1 Concept Plan

2025

LITHGOW MOUNTAIN BIKE PARK

CARPARK AND TRAILHEAD CONCEPT

WORLDTRAIL

LITHGOW MOUNTAIN BIKE PARK
CARPARK AND TRAILHEAD CONCEPT

Disclaimer:

This document, Lithgow Mountain Bike Park Trailhead Concept, has been prepared by World Trail Pty Ltd for Central Tablelands Mountain Bike Club. This document is the work of World Trail and does not necessarily reflect the final views or opinions of all stakeholders. It has been prepared in accordance with relevant federal, state and local legislation and current industry best practice. World Trail accepts no liability for any damages or loss incurred as a result of reliance placed upon the report content or for any purpose other than that for which it was intended.

Client::	Central Tablelands Mountain Bike Club
Primary Author:	Emily Pearce
Document Name:	Lithgow MTB Trailhead Concept
Document Version:	Final Concept
Issue to client :	August 2025

Contact:

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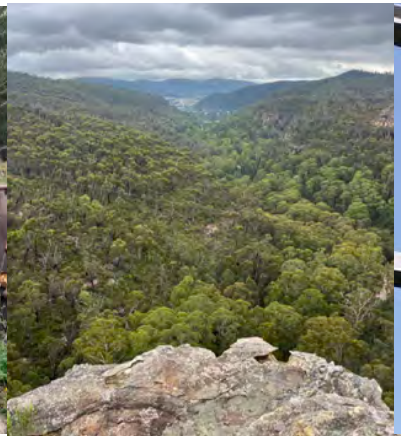
C.T.M.B.C

TRAIL HEAD DESIGN

DESIGN PRINCIPLES



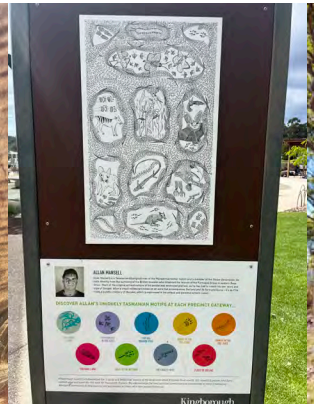





- Strengthen MTB Park identity and sense of **arrival** at the trailhead and museum sites
- Create logical, clear **wayfinding** through the site and to the museum and trails.
- Places to sit, gather and learn. Privilege public **safety** and amenity
- Minimise possible damage to trailhead or museum grounds from informal/ overflow parking
- **Maximise car space yield** for visitors to both museum and trails
- **Increase visitation** from a range of users and family groups - local and visiting. Increase access and awareness to museum and rich site history.
- Reuse materials and **celebrate** industrial mining, coal history and local artesians and artists.

TRAIL HEAD DESIGN

PRECEDENTS + MATERIALS





SIGNAGE




STEEL ARBOUR FRAME






FURNITURE + TREES





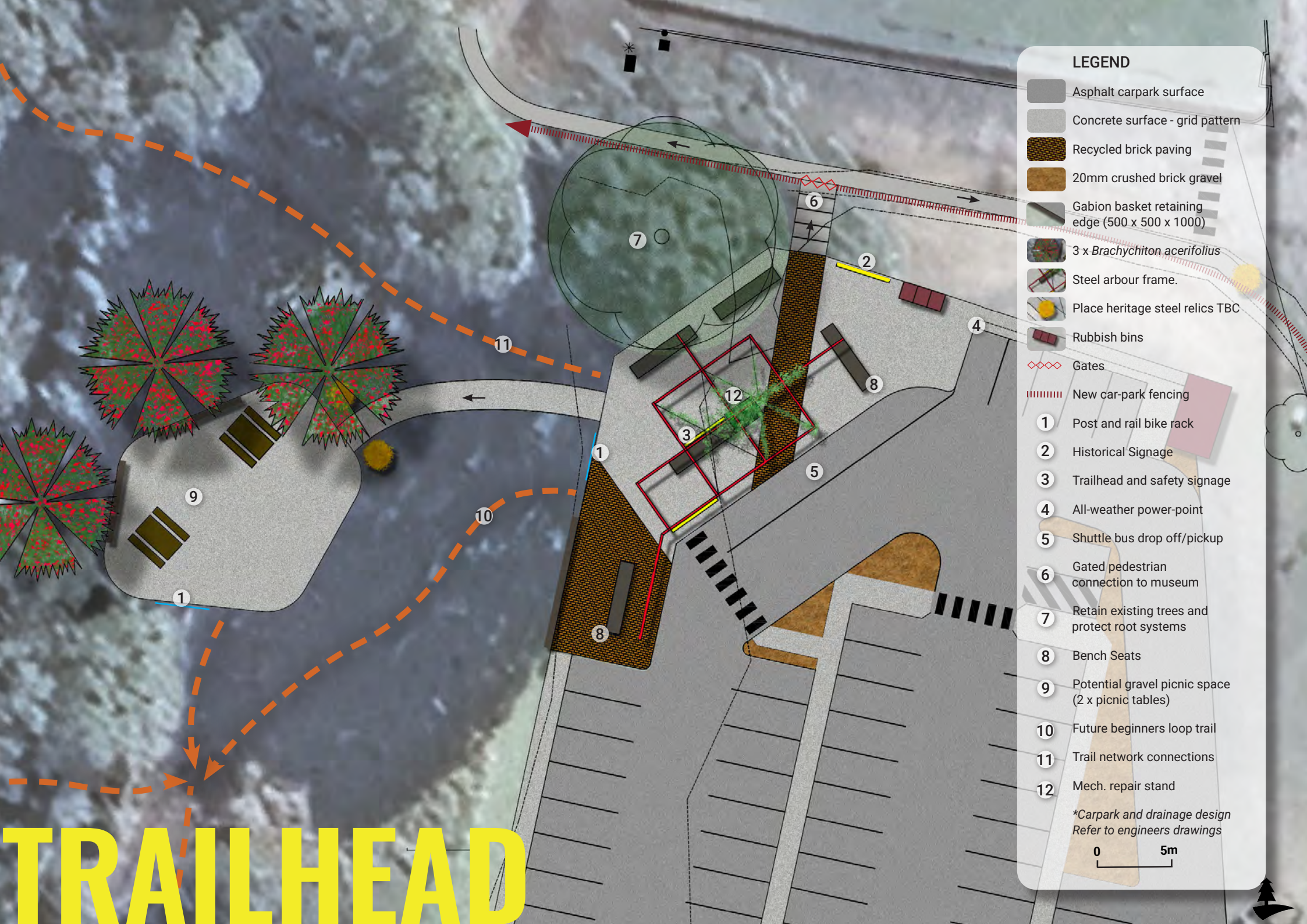

CARPARK + FENCING DETAILS






PAVING + SURFACES

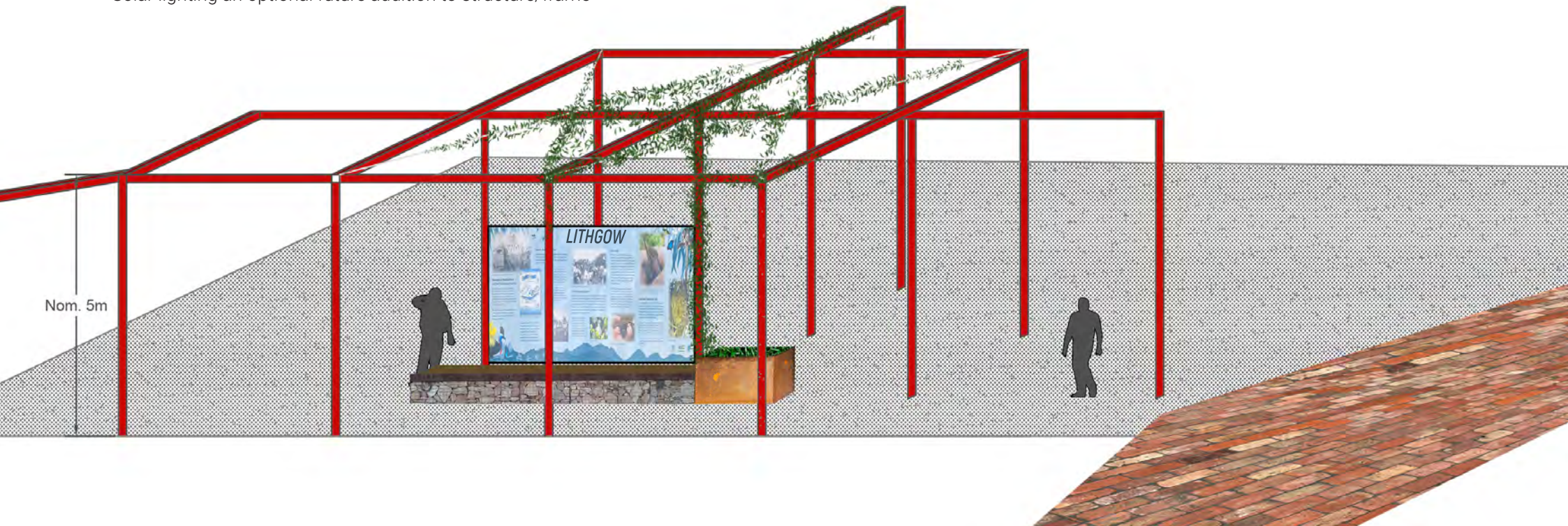

MUSEUM ENTRY
CARPARK
CATCHMENT ZONE
ENTRY
SITE
LEGEND
Asphalt carpark surface
Concrete surface - grid pattern
Recycled brick paving
20mm crushed brick gravel
Gabion basket retaining edge (500 x 500 x 1000)
3 x Brachychiton acerifolius
Steel arbour frame.
Place heritage steel relics TBC
Bike Racks
Rubbish bins
Gates
New car-park fencing
1 Concrete entry/exit ramp
2 Retain existing steel relics
3 All-weather power-point
4 Shuttle bus drop off/pickup
5 Gated pedestrian connection to museum
6 Retain existing trees and protect root systems
7 Automated public toilet + taps
8 Potential gravel picnic space (2 x picnic tables)
9 Coffee van/reserved carpark
10 Future beginners loop trail
11 Trail network connections
12 Shipping container storage
0
10m
*Carpark and drainage design Refer to engineers drawings


LEGEND
Asphalt carpark surface
Concrete surface - grid pattern
Recycled brick paving
20mm crushed brick gravel
Gabion basket retaining edge (500 x 500 x 1000)
3 x Brachychiton acerifolius
Steel arbour frame.
Place heritage steel relics TBC
Rubbish bins
Gates
New car-park fencing
1 Post and rail bike rack
2 Historical Signage
3 Trailhead and safety signage
4 All-weather power-point
5 Shuttle bus drop off/pickup
6 Gated pedestrian connection to museum
7 Retain existing trees and protect root systems
8 Bench Seats
9 Potential gravel picnic space (2 x picnic tables)
10 Future beginners loop trail
11 Trail network connections
12 Mech. repair stand
*Carpark and drainage design Refer to engineers drawings
0
5m
TRAILHEAD

TRAIL HEAD DESIGN

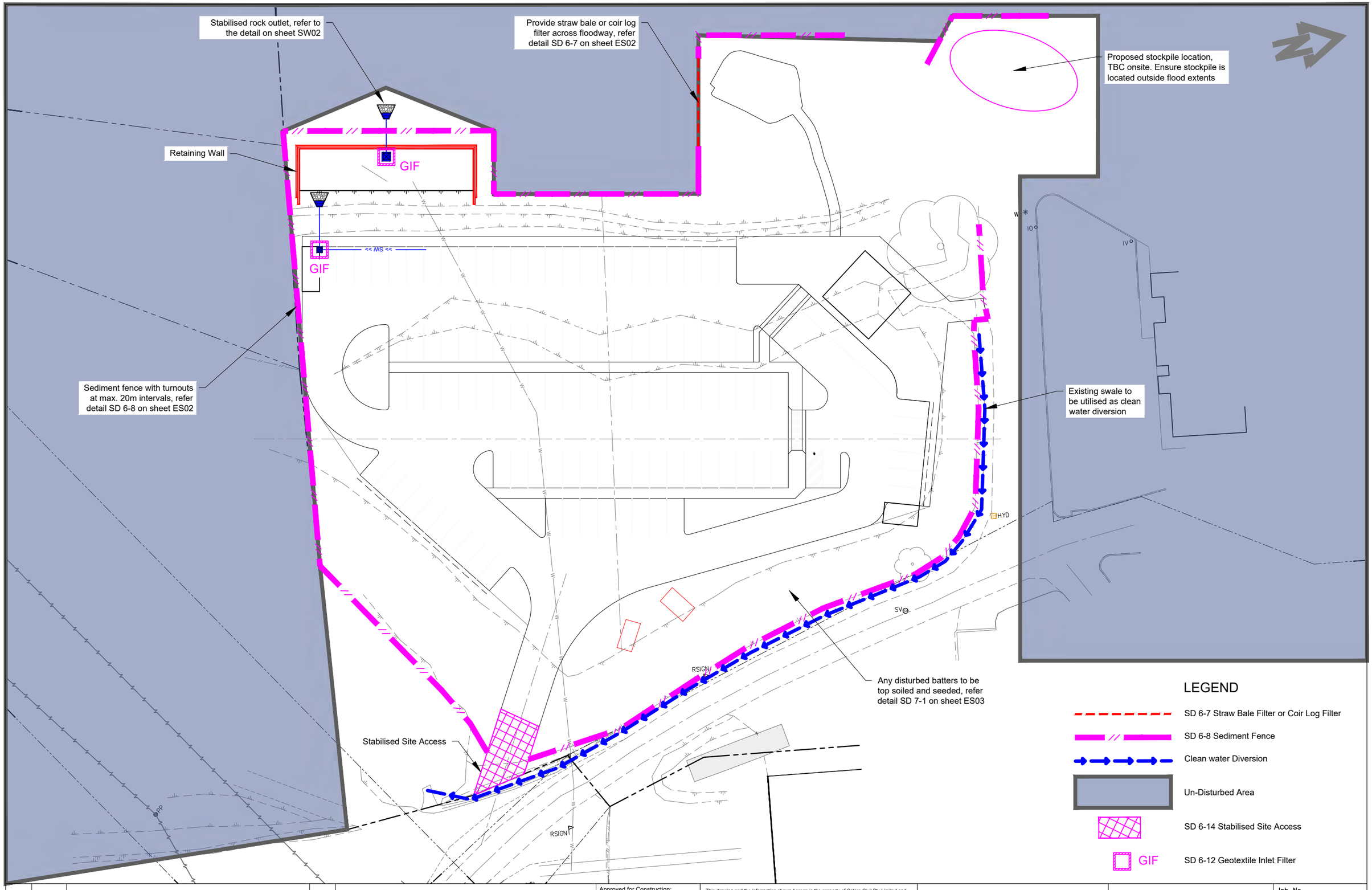
ARBOUR STRUCTURE

- Feature steel arbour frame to reinforce trailhead arrival experience, focus gathering and create a destination at the trailhead.
- Strengthen branding through colour, integrated signage, climbing plants and materials
- Communicate information around trailhead, surrounding landacape, site history and museum
- Support mountain biking community through pop-up cafe van and shuttle service storage/kiosk
- Solar lighting an optional future addition to structure/frame




LITHGOW

A2 Civil & Stormwater Design



Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

DO NOT SCALE OFF DRAWINGS
Contact Calare Civil if clarification required

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(Not for construction)

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

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Checked:	GBL
Scale (A1):	1:250
Original Date:	May 2025

Plot File: 20250105-civil-P2.PDF
Plot Date: 6/08/2025 15:08:39
File Name: ...\20250105-civil-P2.dwg

Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

EROSION AND SEDIMENT CONTROL PLAN

Central Tablelands Mountain Bike Club

CALARE CIVIL
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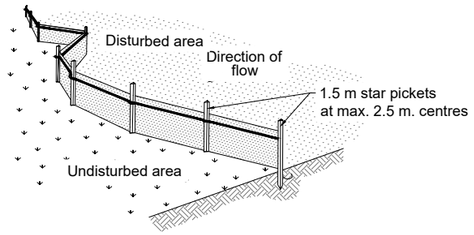
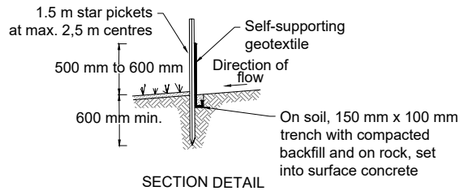
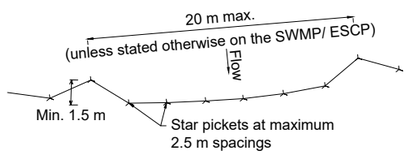




SECTION DETAIL



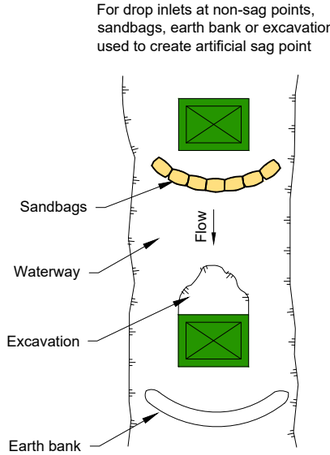
PLAN

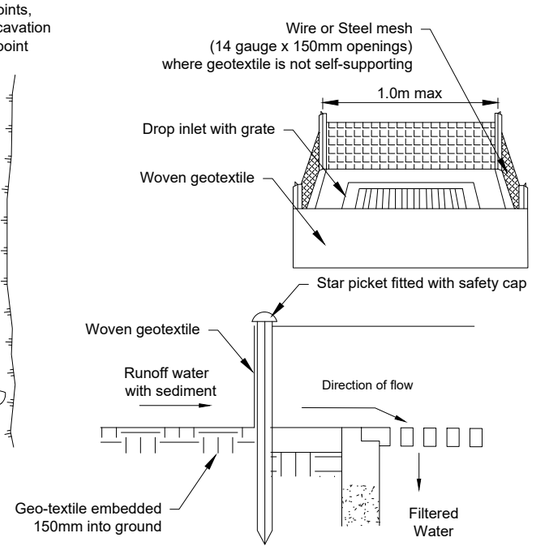
Sediment Fence - SD 6-8

Scale: NTS

Construction Notes:

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing 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 litres per second in the design storm event, usually the 10% AEP.
2. Cut a 150 mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre star pickets into the ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile yo the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextle with wire ties or as recommended by the manufacturer. only use geotextile specifically produced for sediment fencing. the use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150 mm overlap.
6. Backfill the trench over the base of the fabric and compact it throughly over the geotextile.



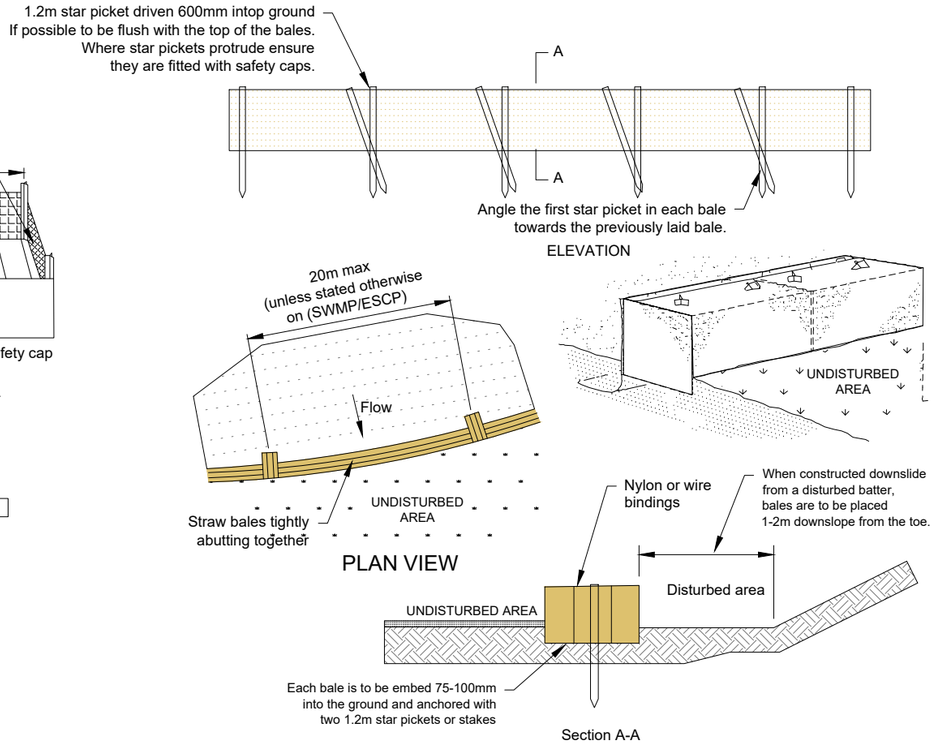


Geo Textile Inlet Filter - SD 6-12

Scale: NTS

Construction Notes:

1. For installation procedures for the straw bales or geo fabric Refer the NSW Managing Urban Stormwater BlueBook, Soils and Construction, Section 6.3 Std Dwg 6-7 and 6-8
2. In water ways, artificial sag points can be created with sand bags or earth banks.
3. Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it



Straw Bale Filter - SD 6-7

Scale: NTS

Construction Notes:

1. Construct as close as possible to be parallel to site contours.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales.
3. Ensure that the maximum height of the filter is one bale.

Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

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Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

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Scale (A1):	AS SHOWN		
Original Date:	May 2025		

Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

EROSION AND SEDIMENT CONTROL NOTES

Central Tablelands Mountain Bike Club

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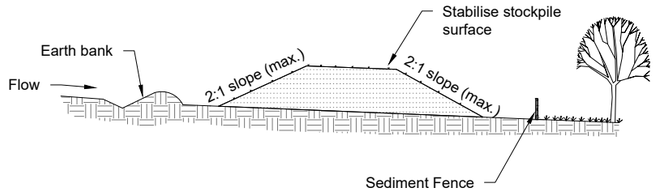
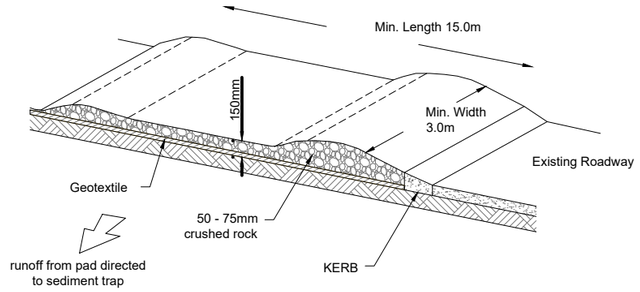


Stockpile - SD 4-1

Scale: NTS

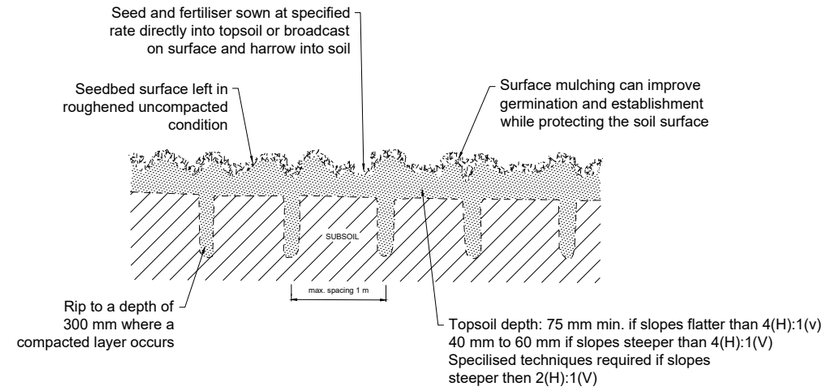
Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.



Stabilised Site Access Detail - SD 6-14

Scale: NTS

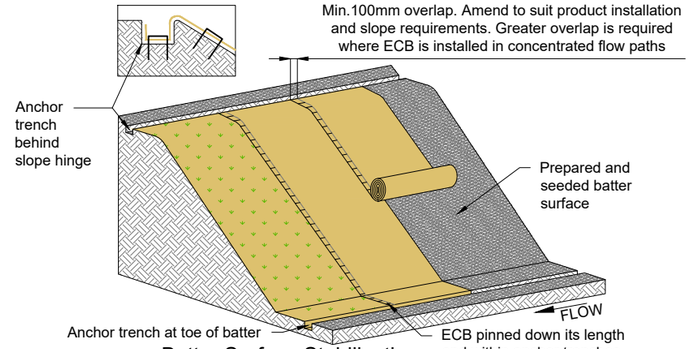


Seedbed Preparation - SD 7-1

Scale: NTS

Construction Notes:

1. Loosen compacted soil before sowing any seed. If necessary, rip the soil to a depth of 300 mm. Avoid rotary hoe cultivation.
2. Work the ground only as much as necessary to achieve the desired tilth and prepare a good seedbed.
3. Avoid cultivation in very wet ir very dry conditions.
4. cultivation on or close to the contour where possible, not up and down the slope.



Batter Surface Stabilisation Detail

Scale: NTS

NOTE:
Top soiled and seeded then lined with 350gsm jute matting and sprayed with a polymer soil stabiliser to the manufacturers specification. Polymer may require reapplication after rain events pending performance inspections until germination and suitable growth has been achieved.

Construction Notes:

1. Avoid removing trees and shrubs if possible - work around them.
2. Ensure 100mm min overlap of 350gsm jute matting.
3. Must be adequately anchored at the top of the batter, pinned / stapled and secured down the batter face at max. 300mm spacings to ensure intimate soil contact.

Amend	Date	Description	By
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P1	07/05/25	Original Issue	GBL

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Approved for Construction:

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Drawn:	HO	Plot File:	20250105-civil-P2.PDF
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Original Date:	May 2025		

Lithgow Mountain Bike Park
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EROSION AND SEDIMENT CONTROL NOTES

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NOTES : SEDIMENT CONTROL

1. EROSION AND SEDIMENTATION CONTROL SHALL BE IN ACCORDANCE WITH NSW LANDCOM GUIDELINES " MANAGING URBAN STORMWATER - SOILS & CONSTRUCTION" 4TH EDITION. MINIMISE DISTURBANCE OF EXISTING VEGETATION DURING CONSTRUCTION. EROSION & SEDIMENT CONTROLS TO BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK COMMENCING.
2. CONSTRUCTION IS TO BE PROGRAMMED TO PROVIDE INSTALLATION OF PERIMETER LANDSCAPING/SURFACE TREATMENT AS EARLY AS PRACTICAL.
3. AT THE PRESTART MEETING THE CONTRACTORS WORKS PROGRAM IS TO BE REVIEWED. ALTERATIONS TO THE PROGRAM MAY BE REQUIRED TO ENSURE SATISFACTORY EROSION AND SEDIMENT CONTROL.
4. A PHOTOGRAPHIC RECORD OF SEDIMENT AND EROSION CONTROL DEVICES AND THE IMMEDIATE DOWNSTREAM STORMWATER SYSTEM IS TO BE CARRIED OUT ON A FORTNIGHTLY CYCLE AND AFTER EACH MAJOR STORM EVENT. CARRY OUT CORRECTIVE AND PREVENTATIVE ACTION AS REQUIRED.
5. PUBLIC AND WORKPLACE SAFETY ISSUES MUST BE CONSIDERED AND MONITORED FOR EACH DEVICE TO THE SATISFACTION OF THE SUPERINTENDENT.
6. WOVEN FABRICS ARE TO BE USED FOR SEDIMENT FENCE FILTER FABRIC.
7. SEDIMENT MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND MAINTAINED AT A SUITABLE LEVEL/CONDITION THROUGHOUT CONSTRUCTION. SEDIMENT FENCES ARE TO BE CLEANED OUT WHEN CAPACITY IS REDUCED BY 30%. DRAINAGE STRUCTURE PROTECTION IS TO BE CLEANED FOLLOWING EACH SIGNIFICANT RUNOFF PRODUCING STORM.
8. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE CONTROL TO DIVERT FLOW FROM UNDISTURBED AREAS AROUND DISTURBED AREAS AND DIRECT FLOW FROM DISTURBED AREAS TOWARDS CONTROL DEVICES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL DEVICES. ALL DEVICES ARE TO BE INSPECTED AT LEAST WEEKLY AND AFTER SIGNIFICANT RUNOFF PRODUCING STORMS.
10. IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE DUE TO UNFORESEEN CIRCUMSTANCES CORRECTIVE ACTION IS TO BE UNDERTAKEN BY THE CONTRACTOR IMMEDIATELY WHICH MAY INCLUDE;
    AMENDMENTS/ADDITIONS TO THE ORIGINAL EROSION CONTROL PLANS. SUCH ADDITIONS OR AMENDMENTS ARE TO BE APPROVED BY THE SUPERINTENDENT.
11. STRAW BALES USED IN SEDIMENT DEVICES ARE TO BE REPLACED AFTER A MAXIMUM SERVICE PERIOD OF 6 WEEKS OR AS REQUIRED.
12. SEDIMENT MANAGEMENT DEVICES ARE TO BE MAINTAINED BY THE CONTRACTOR AS NOTED AND DETAILED UNTIL APPROVAL HAS BEEN GRANTED BY THE ENGINEER FOR THEIR REMOVAL. THE CONTRACTOR IS TO REMOVE AND DISPOSE OF THESE DEVICES OFF SITE.
13. ALL TEMPORARY ACCESS ROADS AND HARDSTAND AREAS ARE TO BE TRIMMED AND MAINTAINED IN A SERVICEABLE CONDITION FOR THE DURATION OF THE CONTRACT.
14. ALL TEMPORARY ACCESS ROADS AND HARDSTAND AREAS ARE TO BE REINSTATED TO THE SATISFACTION OF THE SUPERINTENDENT AT THE END OF THE CONTRACT.

DUST MANAGEMENT

1. Ground disturbance is to be minimised and all site vehicle movements are to be maintained with the designated haulage tracks and or roads.
2. All site traffic speeds are to be kept to a minimum. Maximum speed 10 kph.
3. The contractor will ensure that haul roads and all denuded areas are watered as required and a trackifier such as curosol may be required.
4. In the event that dust becomes a nuisance council may instruct the contractor to cease all work until a satisfactory control has been reached.

REVEGETATION MANAGEMENT.

1. All batters & reinstatement works adjacent to new construction works shall be carried out as soon as possible after completion.
2. All disturbed areas & batters shall be turfed or grassed as soon as practical after reinstatement and achieve 70% cover after 10 working days. Areas not worked for 20 days must achieve 50% cover.
3. Replace topsoil on all disturbed areas to a depth of at least 75mm depth on slopes less than 4h:1v and 40mm to 60mm on lands where slopes exceed 4h to 1v.
4. Sow or hydromulch disturbed areas with approved seed/fertiliser mixture.

MONITORING & TESTING

The installation of the erosion and sediment control measures as detailed in this plan will ameliorate potential impact to water quality in the receiving waters. A monitoring program is proposed to ensure that the control measures achieve the desired goals.

A visual monitoring program is proposed due to the relatively small size of the development and the amount of earthworks that is to take place. Inspections of all controls to take place weekly and before and after rainfall events (70% chance of 5mm or more)

1. Erosion Hazard and Sediment Basins

Site Name: State Mine Gully Mountain Bike Park

Site Location: 3A State Mine Gully Road, State Mine Gully, NSW 2790

Precinct/Stage:

Other Details:

Site area	Sub-catchment or Name of Structure						Notes
Total catchment area (ha)	0.456						
Disturbed catchment area (ha)	0.456						

Soil analysis (enter sediment type if known, or laboratory particle size data)

Sediment Type (C, F or D) if known:	F						From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)							Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)							
% clay (fraction finer than 0.002 mm)							
Dispersion percentage							E.g. enter 10 for dispersion of 10%
% of whole soil dispersible							See Section 6.3.3(e). Auto-calculated
Soil Texture Group	F						Automatic calculation from above

Rainfall data

Design rainfall depth (no of days)	5						See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	80						
x-day, y-percentile rainfall event (mm)	23.6						
Rainfall R-factor (if known)	1700						Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)							

RUSLE Factors

Rainfall erosivity (*R*-factor)	1700						Auto-filled from above
Soil erodibility (*K*-factor)	0.036						
Slope length (m)	60						
Slope gradient (%)	2.5						RUSLE LS factor calculated for a high rill/interrill ratio.
Length/gradient (*LS*-factor)	0.46						
Erosion control practice (*P*-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (*C*-factor)	1	1	1	1	1	1	

Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)

Storage (soil) zone design (no of months)	6						Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.5						See Table F2, page F-4 in Appendix F

Calculations and Type D/F Sediment Basin Volumes

Soil loss (t/ha/yr)	37						
Soil Loss Class	1						See Table 4.2, page 4-13
Soil loss (m^3/ha/yr)	28						Conversion to cubic metres
Sediment basin storage (soil) volume (m^3)	6						See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m^3)	54						See Sections 6.3.4(i) for calculations
Sediment basin total volume (m^3)	60						

Soil Loss is less than 200 tonne (~150m^3) therefore a sediment basin is NOT required.

Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

DO NOT SCALE OFF DRAWINGS
Contact Calare Civil if clarification required

FOR DA APPROVAL
(Not for construction)

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

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Original Date:	May 2025		

Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

SOIL AND WATER MANAGEMENT NOTES

Central Tablelands Mountain Bike Club

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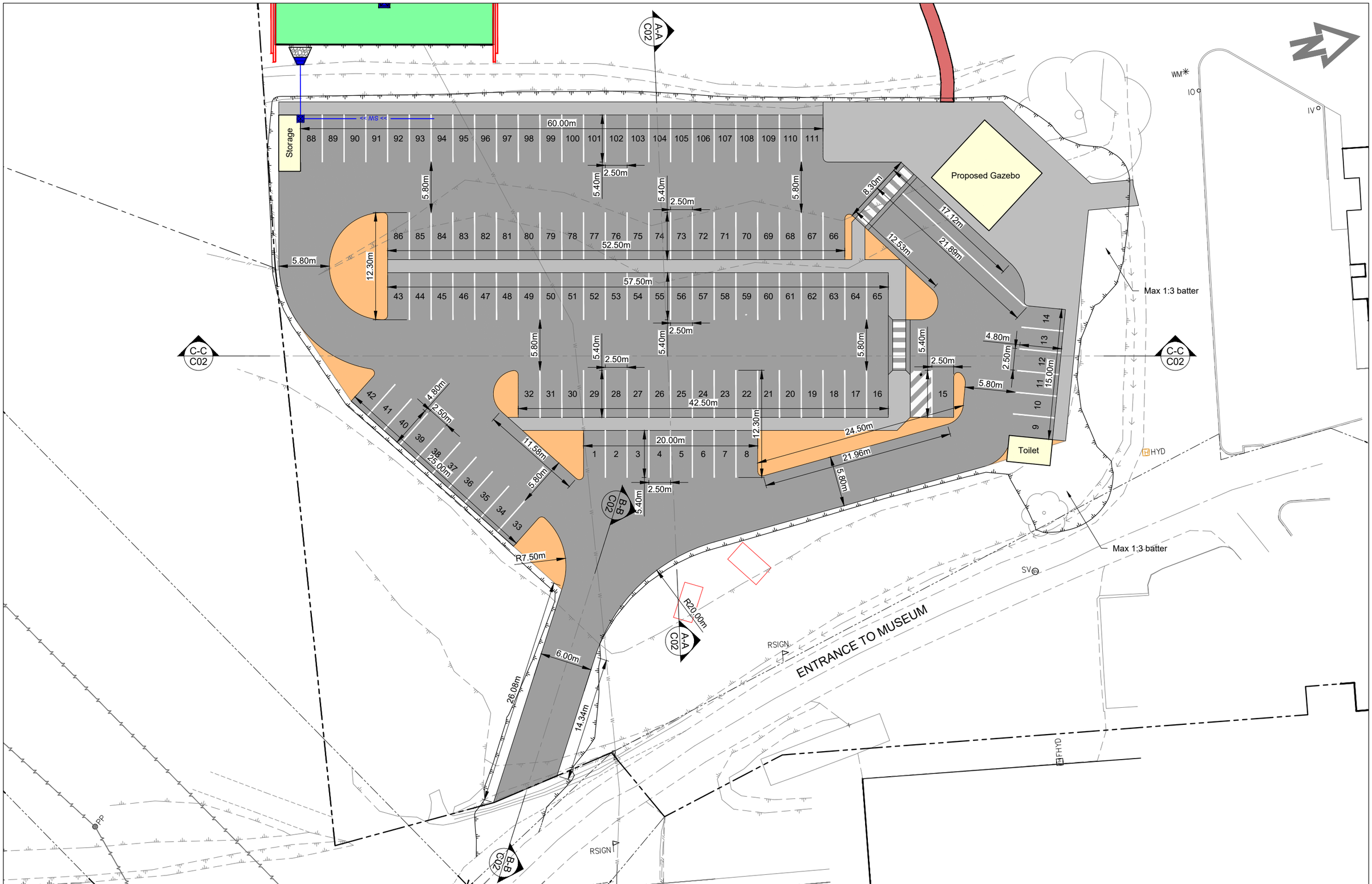
Job No. 20250105
DWG. No. ES04 Issue P2
No. in set 8



Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

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Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

PRELIMINARY OVERALL SITE PLAN

Central Tablelands Mountain Bike Club

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Job No. 20250105
DWG. No. C01
Issue P2
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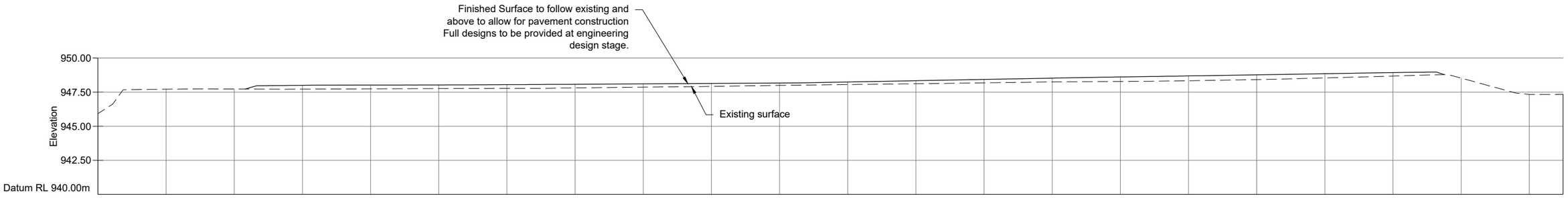

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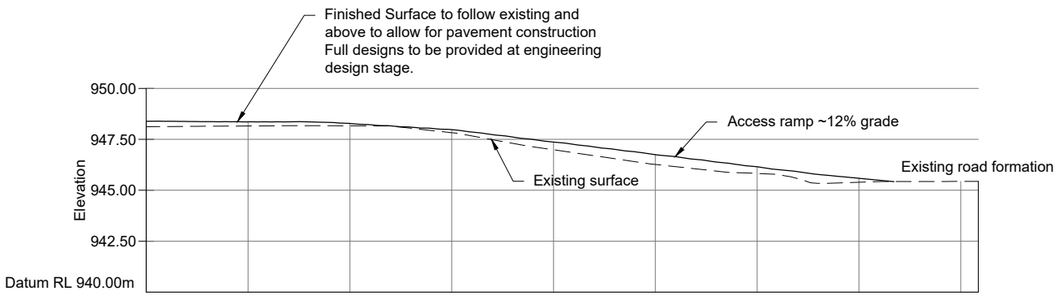

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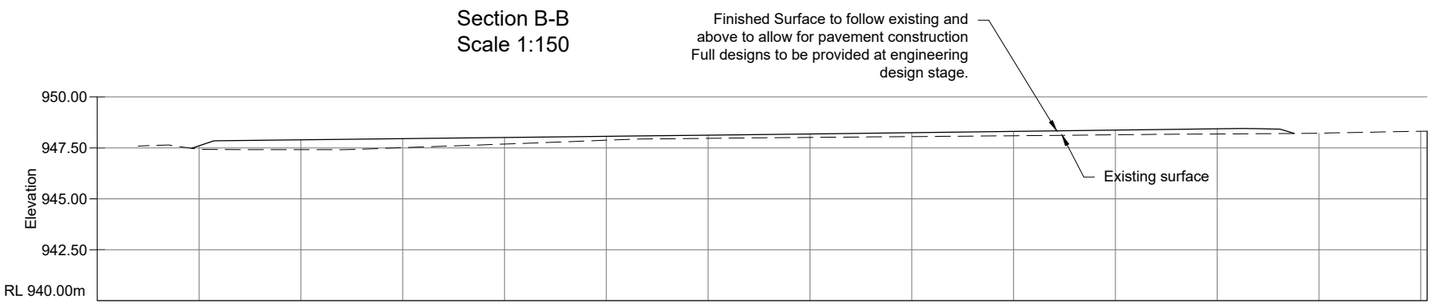

Section A-A
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Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

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APEC Engineer IntPE (Aus) RBP
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Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

PRELIMINARY SITE CROSS SECTIONS

Central Tablelands Mountain Bike Club

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Issue P2
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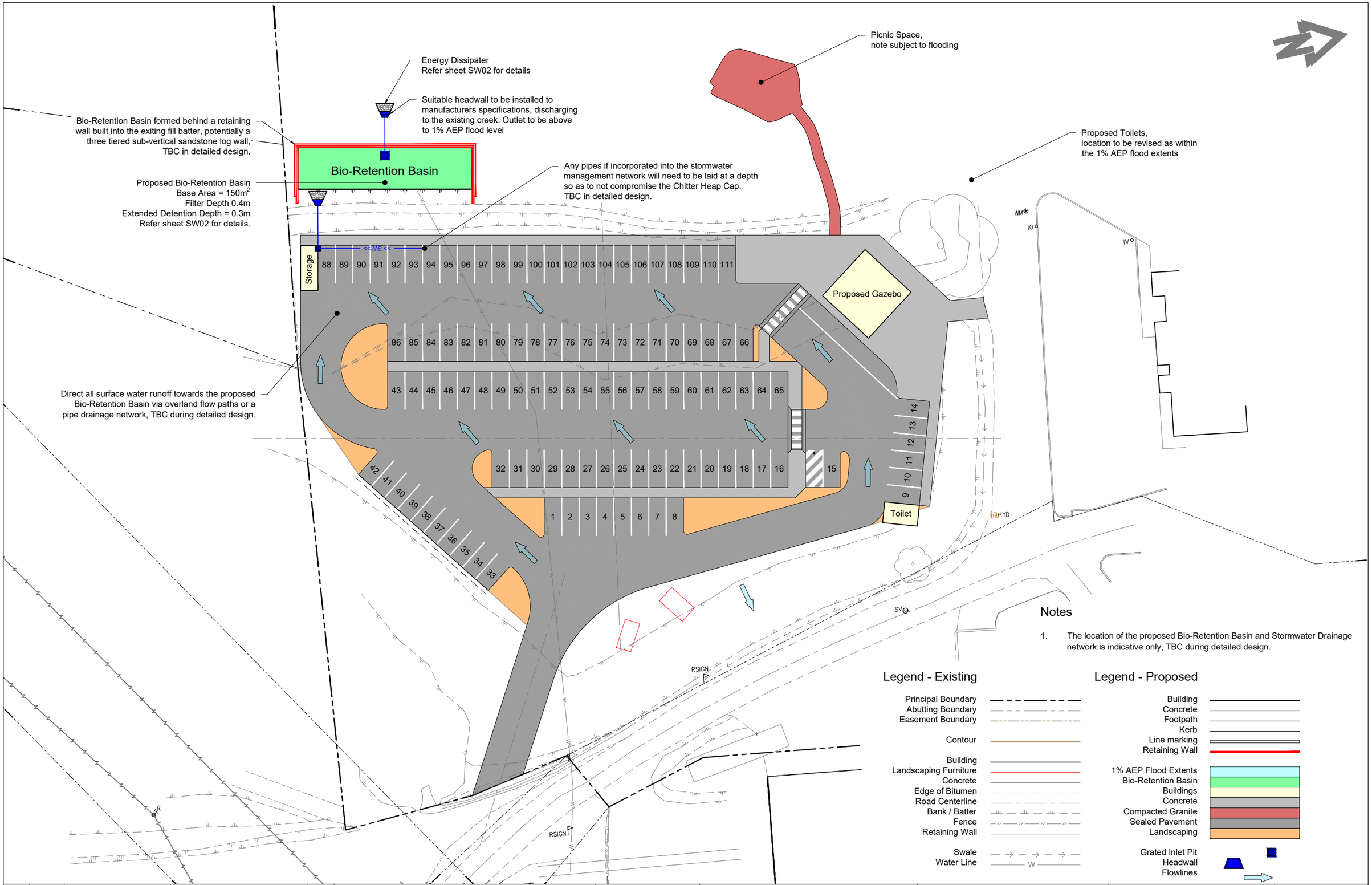

Notes

1. The location of the proposed Bio-Retention Basin and Stormwater Drainage network is indicative only, TBC during detailed design.

Legend - Existing

- Principal Boundary
- Abutting Boundary
- Easement Boundary
- Contour
- Building
- Landscaping Furniture
- Concrete
- Edge of Bitumen
- Road Centerline
- Bank / Batter
- Fence
- Retaining Wall
- Swale
- Water Line

Legend - Proposed

- Building
- Concrete
- Footpath
- Kerb
- Line marking
- Retaining Wall
- 1% AEP Flood Extents
- Bio-Retention Basin
- Buildings
- Concrete
- Compacted Granite
- Sealed Pavement
- Landscaping
- Grated Inlet Pit
- Headwall
- Flowlines

Amend	Date	Description	By
P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
P1	07/05/25	Original Issue	GBL

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Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

STORMWATER MANAGEMENT PLAN

Central Tablelands Mountain Bike Club

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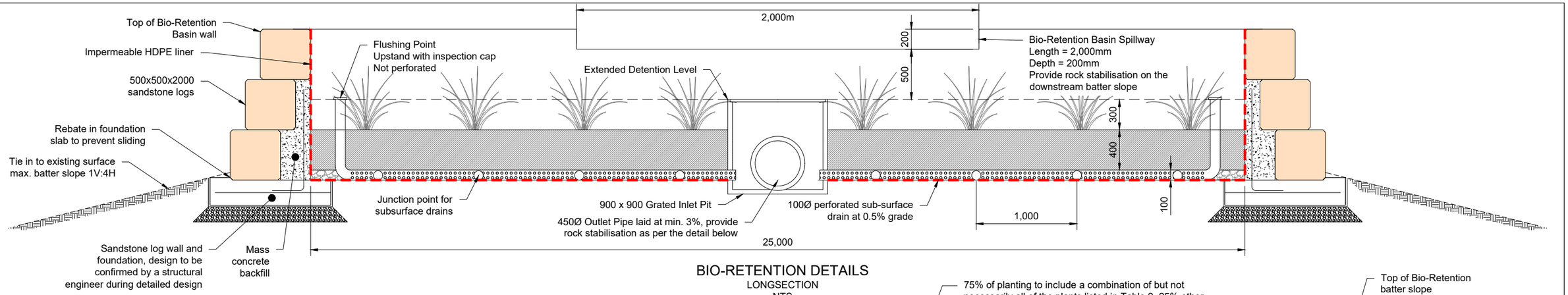
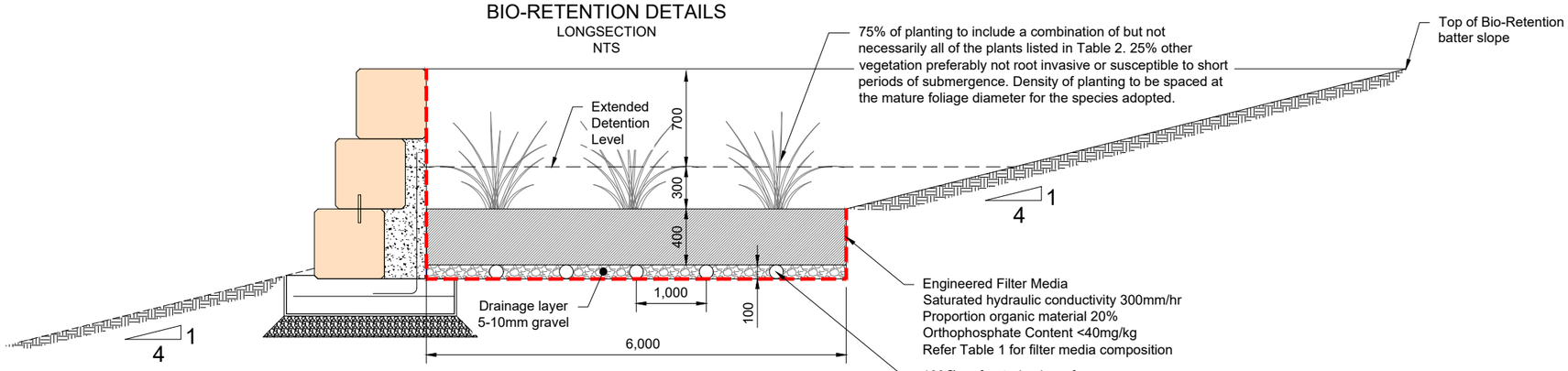
DWG. No. SW01
Issue P2
No. in set 8



BIO-RETENTION DETAILS
LONGSECTION
NTS



BIO-RETENTION DETAILS
CROSS SECTION
NTS

Filter Media

Structural Stability:
- Dispensability testing should be done if soil is structurally unstable

Engineered filter media:
- Filter media to consist of 400mm of washed sand with 300mm/hr hydraulic conductivity. An additional 100mm of washed sand ameliorated with 20% premium potting mix per volume to be provided as topping layer. Refer Table 3 for details

Table 1 - Proposed Bio-Retention Basin Quantities

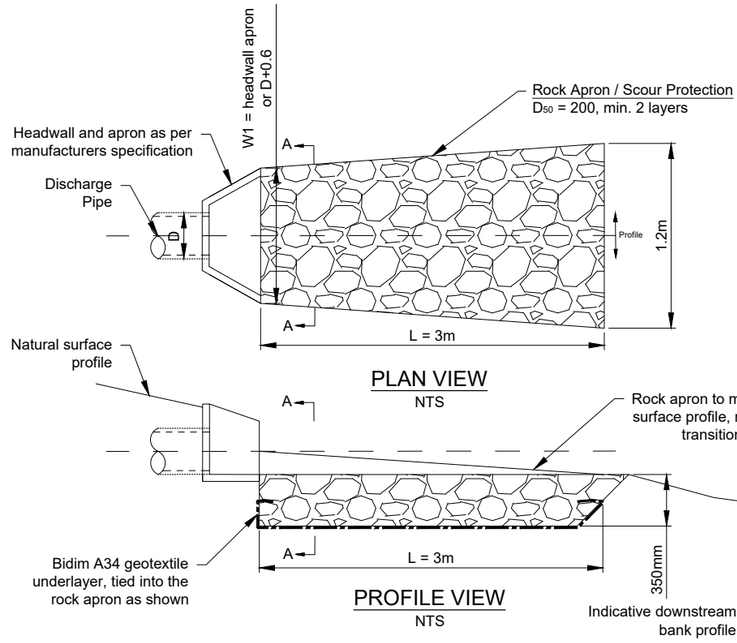
Layer	Material	Quantity (m^3)
Engineered Filter Media (Compound Mix)	Premium Potting Mix	3
	Washed Sand	12
Filter Media	Washed Sand	45
Drainage Layer	5-10mm Drainage Gravel	15

Table 2

Plant name Listed in order of preference
Carex appressa
Melaleuca ericifolia
Goodenia ovata
Ficinia nodosa
Juncus amabilis
Juncus flavidus
For the batters and spillway use suitable deep rooting heavy mat grass e.g. Buffalo or Kasbah Cocksfoot. Refer to turf supplier for recommendations

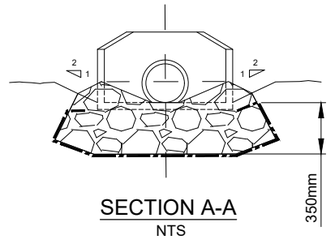
Table 3

Name	Quantity (kg/100m^2 filter area)
Granulated poultry manure fines	50
Superphosphate	2
Magnesium sulphate	3
Potassium sulphate	2
Trace element mix	1
Fertiliser NPK (16.4.14)	4
Lime	20
Total	82



PLAN VIEW
NTS

PROFILE VIEW
NTS



SECTION A-A
NTS

ENERGY DISSIPATER - SD 5-8

Construction Notes:
1. Compact the subgrade fill to the density of the surrounding undisturbed material.
2. Prepare a smooth, even foundation for the headwall and rock apron so to ensure that the geotextile does not tear when covered with rock.
3. Should any minor damage to the geotextile occur, repair it before spreading any rock. For repairs, patch one piece of fabric over the damage, making sure that all joints and patches overlap more than 300mm.
4. Provide rock rip rap scour protection. Rip rap shall have a D_{50} = 200mm, be a minimum of 2 layers thick

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P2	25/06/25	Water Cycle Management and E&SC Plan - For Approval	HO
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(Not for construction)

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

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Original Date:	May 2025		

Lithgow Mountain Bike Park
3A State Mine Gully Road
Lot 11 DP1240259

TYPICAL DETAILS

Central Tablelands Mountain Bike Club

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Job No. 20250105
DWG. No. SW02
Issue P2
No. in set 8

Appendix B: Certificates of Title

Provided by CITEC Confirm

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/965231

SEARCH DATE	TIME	EDITION NO	DATE
13/6/2025	12:57 PM	1	21/8/2024

LAND

LOT 1 IN DEPOSITED PLAN 965231
LOCAL GOVERNMENT AREA LITHGOW CITY
PARISH OF MARRANGAROO COUNTY OF COOK
TITLE DIAGRAM DP965231

FIRST SCHEDULE

HIS MOST GRACIOUS MAJESTY KING GEORGE THE FIFTH (T A503167)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 H760985 EASEMENT FOR TRANSMISSION LINE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN VOL 2995 FOL 87
O292805 EASEMENT VESTED IN PROSPECT ELECTRICITY
O631893 EASEMENT VESTED IN PROSPECT ELECTRICITY

NOTATIONS

NOTE: RESERVATION OF CROWN LAND RESERVE NO. 1041053 VIDE GOV. GAZ. 12.07.2024 (NSWGG-2024-261-7)

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Provided by CITEC Confirm

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: AUTO CONSOL 8401-169

SEARCH DATE	TIME	EDITION NO	DATE
13/6/2025	12:57 PM	-	-

VOL 8401 FOL 169 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS
AT MARRANGAROO
LOCAL GOVERNMENT AREA LITHGOW CITY
PARISH OF MARRANGAROO COUNTY OF COOK
TITLE DIAGRAM DP1110346

FIRST SCHEDULE

THE COUNCIL OF THE CITY OF GREATER LITHGOW

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 H654562 LAND EXCLUDES MINERALS
* 3 H654562 RIGHTS TO MINE
* 4 H760985 EASEMENT FOR TRANSMISSION LINE 30.48 METRES WIDE AFFECTING THE PART SHOWN SO BURDENED IN PLAN WITH H760985
* O292805 EASEMENT NOW VESTED IN PROSPECT ELECTRICITY

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS

LOTS 1-3 IN DP1110346.

*** END OF SEARCH ***

Provided by CITEC Confirm

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/787403

SEARCH DATE	TIME	EDITION NO	DATE
13/6/2025	12:57 PM	2	12/11/1990

LAND

LOT 2 IN DEPOSITED PLAN 787403
AT STATE MINE GULLY
LOCAL GOVERNMENT AREA LITHGOW CITY
PARISH OF MARRANGAROO COUNTY OF COOK
TITLE DIAGRAM DP787403

FIRST SCHEDULE

THE CITY OF GREATER LITHGOW MINING MUSEUM INCORPORATED (T Z332337)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 AN668225 CAVEAT BY VIVA ENERGY AUSTRALIA PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Provided by CITEC Confirm

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: AUTO CONSOL 8401-169

SEARCH DATE	TIME	EDITION NO	DATE
13/6/2025	12:57 PM	-	-

VOL 8401 FOL 169 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS
AT MARRANGAROO
LOCAL GOVERNMENT AREA LITHGOW CITY
PARISH OF MARRANGAROO COUNTY OF COOK
TITLE DIAGRAM DP1110346

FIRST SCHEDULE

THE COUNCIL OF THE CITY OF GREATER LITHGOW

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 H654562 LAND EXCLUDES MINERALS
* 3 H654562 RIGHTS TO MINE
* 4 H760985 EASEMENT FOR TRANSMISSION LINE 30.48 METRES WIDE AFFECTING THE PART SHOWN SO BURDENED IN PLAN WITH H760985
* O292805 EASEMENT NOW VESTED IN PROSPECT ELECTRICITY

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS

LOTS 1-3 IN DP1110346.

*** END OF SEARCH ***

Provided by CITEC Confirm

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 11/1240259

SEARCH DATE	TIME	EDITION NO	DATE
13/6/2025	12:57 PM	1	2/3/2018

LAND

LOT 11 IN DEPOSITED PLAN 1240259
AT STATE MINE GULLY
LOCAL GOVERNMENT AREA LITHGOW CITY
PARISH OF MARRANGAROO COUNTY OF COOK
TITLE DIAGRAM DP1240259

FIRST SCHEDULE

THE CITY OF GREATER LITHGOW MINING MUSEUM INCORPORATED

SECOND SCHEDULE (7 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS - SEE CROWN GRANT(S)
2 Q52231 EASEMENT FOR TRANSMISSION LINE VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
* AQ546187 EASEMENT NOW VESTED IN RAIL CORPORATION NEW SOUTH WALES
3 DP1240259 RIGHT OF CARRIAGEWAY VARIABLE WIDTH REFERRED TO AND NUMBERED (1) IN THE S.88B INSTRUMENT APPURTENANT TO THE LAND ABOVE DESCRIBED
4 DP1240259 RIGHT OF CARRIAGEWAY VARIABLE WIDTH REFERRED TO AND NUMBERED (2) IN THE S.88B INSTRUMENT AFFECTING THE THE SITE DESIGNATED (B) IN THE TITLE DIAGRAM
5 DP1240259 EASEMENT FOR ELECTRICITY PURPOSES 2 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
6 DP1240259 RESTRICTION(S) ON THE USE OF LAND
* 7 AN668225 CAVEAT BY VIVA ENERGY AUSTRALIA PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Appendix C: Historical Aerial Photographs

C1 1969

1969 – Zoomed to Extent of Site

C2 1975

1975 – Zoomed to Extent of Site

C3 1984

1984 – Zoomed to Extent of Site

C4 1991

1991 – Zoomed to Extent of Site

C5 1998


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1998 – Zoomed to Extent of Southern part of Site

C6 2019

C7 2024