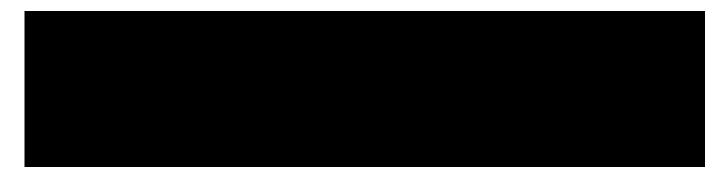




Balgo Hill Airstrip - Crushing and Screening



#### **Distribution**

The master-controlled plan will be held within Black Cat Civil's document management system, where it can be accessed by personnel as necessary.

#### **Terms and definitions**

The following terms, abbreviations and definitions are used in this plan

Terms / Abbreviations	Definitions
BCC	Black Cat Civil Pty Ltd



## Balgo Hill Airstrip - Crushing and Screening

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### Balgo Hill Airstrip - Crushing and Screening

#### 1. Introduction

#### 1.1 Purpose

This purpose of this document is to outline the proposed construction methodology for the crushing and screening of material required for use in the Balgo Hil Airstrip project.

#### 1.2 Background

Delivering this Project is a priority for the State Government. DoT is providing administrative support and co-funding to the Wirrimanu Aboriginal Community through the Aboriginal Community Airstrip Renewal Program (ACARP). This funding was committed to ACARP through the Kimberley Resilience Package, a state initiative in the 2024-25 Budget. The funding aims to strengthen regional supply chains and improve emergency response capabilities. The Project will fulfil these State commitments by providing year-round, all-weather accessibility to one of Western Australia's most remote Aboriginal communities. Balgo is approximately 1100km east of Broome and 250km south of Halls Creek, with a population of approximately 500 to 600. In 2024-25, the Balgo Hill Airstrip was the Royal Flying Doctor Services' (RFDS) second busiest emergency retrieval location in Western Australia.

Aerodromes are critical infrastructure for remote communities that enable year-round delivery of essential goods and services, reliable access to health services such as those provided by the RFDS, improved access to work and education opportunities, and help connect residents of remote communities. The significant role that Aboriginal community aerodromes play in enabling improved socio-economic outcomes complements the objective of the National Agreement on Closing the Gap.

The Balgo Hill Airstrip runway, taxiway, and apron are worn out and due for reconstruction. The runway's condition encourages water to pond and causes early closure of the airstrip during wet conditions putting the community at risk of losing essential goods and services for extended periods. The airstrip lighting system additionally needs replacement as some sections are incorrectly installed and in poor condition.

Maintaining the necessary aerodrome standards ensures regular services continue, providing year-round access to Balgo during wet and dry seasons. This access is vital for the health, well-being, and economic sustainability of the communities it services, as it facilitates the consistent supply of essential services. Furthermore, replacing these supply chain services with alternative transport methods during emergencies would be extremely costly or even impossible.

#### 1.3 Scope of works

The scope of works of the crushing and screening is to produce enough material required for the Balgo Hill Airstrip project.

#### 1.4 Site Location and Key Feature

The Balgo community is approximately 1,750km north west of Perth in Western Australia. The community, including the quarry (borrow pit) reside within both Reserve 46573 and Kearney Reserve 26399. The borrow pit itself is on the corner of Solar Road and Balgo Road. Please see figures 1 to 3.

Reserve 46573 is a reserve under management order to the ALT.

Reserve 26399 is a reserve vested under statute in the AAPA and under management order to the ALT.



## Balgo Hill Airstrip - Crushing and Screening



Figure 1: Location of Balgo Hill Airport in relation to Perth



Figure 2: Local area map of Balgo Hill and Airport



## Balgo Hill Airstrip - Crushing and Screening



Figure 3: Location of borrow pit



### Balgo Hill Airstrip - Crushing and Screening

#### 1.5 Project Information

Table 1: Project Information

Client Project Name	Hill Airstrip	
Client	Government of Western Australia, Department of Transport	

#### 2. Key Equipment and Materials

Key equipment proposed to be used during this works package include:

Table 2: Key Equipment and materials

Plant and Equipment	Make	Quantity
D8 Dozer	CAT D8	1
Semi Water Cart	TBD	1
30T Excavator	CAT 330	1
Grader 150m	CAT 150m	1
Jaw Crusher	TBD	1
Cone Crusher	TBD	1
Screen	TBD	1
Stacker	TBD	1

#### 3. Key Project Risks

Black Cat Civil (BCC) has identified some key project risks that will present themselves throughout the contract works. As part of the tender process (and in aim to mitigate these risks) we have completed a tender risk assessment for some of the key risks that have been identified. Some of the key risks identified include, however are not limited to:

1. **Environmental** – to mitigate risks from noise and dust, we will only operate plant and equipment between the approved hours as nominated by the Client and we shall use a water cart to spray water as dust suppression mitigation.

#### 4. Project Construction

#### 4.1 Overall Program and Methodology Summary

BCC has allowed to undertake the scope of works across a 35-week Project Duration, with a 19-week Standdown due to the wet season. The works have been scheduled on a 2:1 rolling roster, please refer to Construction program. This construction methodology has been developed to highlight the key components required to facilitate these works to completion.

#### 4.2 Preliminary Works

BCC will be in constant communication with South32 during the preliminary works phase of the project, this will involve the submission and approval of management plans, establishing the site management team and assigning internal plant and equipment for the project. This will ensure that the site mobilisation is undertaken smoothly, ensuring no delay to the commencement of construction works.





### Balgo Hill Airstrip - Crushing and Screening

#### 4.3 Pit Establishment and Material Production

With over 35,000t of gravel expected to be required from borrow pits, we have devised the below extraction and production methodology which will be adopted for all crushing and screening activities.

- conduct material source investigation.
- mobilisation of all project equipment to borrow pit location.
- the pit will be established by clearing and stripping stockpile area large enough to facilitate construction equipment and stockpiles.
- (if required) vegetation will be removed, and topsoil stripped. Materials will be stockpiled to a maximum height of 2m.
- Once stockpile pad is cleared, material will begin being pushed into stockpile by utilising a D8 dozer.
- material will be stockpiled in preparation of crushing and screening.
- Utilising the CAT 30t Excavator, material will be loaded into the Jaw Crusher (see below example). The jaw crusher then crushes the oversized rock material, whilst also feeding both the crushed rock and natural fines into the screener. The screener separates material large than 32mm and feeds it into the cone crusher. The cone crusher will then process the oversize material to ensure that the high end of the PSD requirement is achieved for type 2/3 gravels (minus 37.5mm). The material is then fed back into the screener by the cone crusher to be added back into the processed material.



Figure 4: Crusher and screen in action

All processed material is fed into the screen collector bin. The screen has dual belts and will be equipped with a <75mm screen as well as a <40mm screen sorting oversized material into manageable waste stockpiles. Note: the jaw and cone crusher will only be required for type 2/3 gravels to ensure that the PSD requirement is achieved. For earthworks fill and subgrade materials both the jaw and cone crushers may not be required if the in-situ materials meets the PSD requirements.

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# <u> SLACK GAT</u>

### Construction Methodology

### Balgo Hill Airstrip - Crushing and Screening



Figure 5: Screen with product belts

To minimise waste all non-confirming material will be re-circulated through the crusher to mitigate overall material waste throughout the life of the project. Any material leftover will be either be left for use by the community at a later date or used to rehabilitate the borrow pit at the end of the project.

Process testing is undertaken on the processed gravels to determine the suitability of the material and compliance the specifications specified required by the Client. Testing and QA will be completed to ensure compliance prior to use in the final pavement layer.

Screen Size (Mm)	Material Passing Percent
37.5	100
25	98
19	92
9.5	82
4.75	65
2.36	53
425 um	33
75 um	16
Liquid Limit	25.2
Plasticity Limit	15.8
Plasticity Index	10.0
Optimum moisture (during placing)	12.2%

Figure 6: Typical Grading For A "Fine Crushed Rock" Surface Material

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### Balgo Hill Airstrip - Crushing and Screening

#### 4.4 Dust Suppression

Throughout the works a Semi Rigid (road going) Watercart will be allocated to dust suppression for the project.

#### 4.5 Noise Control

Working hours shall be limited to between 07:00 and 18:00 Monday to Sunday. With machine maintenance planned to occur on Sundays to minimise noise creating activities.

#### 4.6 Pit Rehabilitation

Following excavation of the required material, any unused rock and gravel material will be spread back over the pit area. The pit "floor" will be ripped using dozer or grader tynes to a depth of 100mm to 200mm to loosen the floor to encourage new plants to establish. This ripping will be carried along contour lines to reduce or prohibit the extent of erosion.

The previously stripped material including topsoil and overburden will be pushed back over the excavation. Cleared vegetation acts as a wind barrier to catch wind-blown native seeds. The topsoil also holds a rich source of native seeds and is spread over the extraction site to encourage regrowth. The surface of the topsoil will be scarified which will further enhance the ability of the material to trap mobile seeds, dust and moisture. Native seed will be broadcast either by hand or machine, if required. Vegetation litter will be spread to assist the re-colonisation of flora and fauna across the site.