

# VINEGAR HILL QUARRY AND SAND PIT, LADY BARRON

## TRAFFIC IMPACT STATEMENT

**APPLICANT: GARY MORRISON**

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**DEFINITION OF TERMS/ABBREVIATIONS**

DA	Development Application
Development	<p>The Extractive Industry which includes:</p> <ul style="list-style-type: none"> <li>(i) quarry, the haul roads associated with the pit and storage yard, and the storage yard where material will be stockpiled (some will be crushed and screened); and</li> <li>(ii) sand extraction pit, the haul roads associated with the pit and storage yard, and the storage yard where material will be stockpiled (some will be crushed and screened).</li> </ul>
DNRE	Department of Natural Resources and Environment
DPIPWE (now DNRE)	Department of Primary Industries, Parks, Water and Environment (now DNRE)
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System objectives to be found in Schedule 1 of EMPCA
FC	Flinders Council
(the) Land	CT199735/1 which is further refined by the Development layout depicted in <b>Figure 2</b> .
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
ML	Mining Lease 2116 P/M (proposed – application pending)
MRT	Mineral Resources Tasmania
QCP	<i>Tasmanian Quarry Code of Practice 2017</i>

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#### Document Status

REV	Author	Review	Date
1	C McCoull, S Ineshka	S Ineshka	16-8-2022
1	C McCoull, S Ineshka	R Barnes, VDC	16-8-2022

## PREFACE

### FUNCTION OF THE TRAFFIC IMPACT STATEMENT

The documentation has been prepared to support Development Applications lodged with Flinders Council by Gary Morrison for a Quarry (granite rock and gravel) and Sand Pit (aeolian sands) on land located at 2279 Lady Barron Road, Flinders Island.

Two activities are proposed, with each operating separately of the other –

1. **Quarry** connected to a Storage Yard area where rock and gravel will be hauled to, stockpiled and some crushed and/or screened (up to 1,000 cubic metres per annum; equivalent is approximately 1,800 tonnes). Up to 4,999 cubic metres (equivalent is approximately 8,998 tonnes) per annum may be extracted and removed from the Land.
2. **Sand Extraction Pit** is to be connected to the storage yard area where sand will be hauled to, stockpiled and some screened (up to 1,000 cubic metres per annum; equivalent is approximately 1,500 tonnes) to remove rocks and/or organic material. Up to 4,999 cubic metres (equivalent is approximately 7,498.5 tonnes) per annum may be extracted and removed from the Land.

The volumes to be extracted and material handled make each activity a Level 1 per EMPCA.

An application for a Mining Lease has been submitted to Mineral Resources Tasmania which has been allocated the number 2116P/M.

The document contains the following components –

- |        |  |
|--------|--|
| Part A | <i>Information about the proponent</i> of the development including details of their name and contact details and the activity location.                       |
| Part B | <i>Proposal Description</i> including details of the volume extracted, extraction process, machinery, and equipment to be used and timeframe for the activity. |
| Part C | <i>Existing Conditions of current Land Use and Traffic Network in the vicinity.</i>  |
| Part D | <i>Traffic Impacts from proposed access road/track to Lady Baron Road</i>  |
| Part E | <i>Attachments</i> referenced in the TIS.  |

**PART A – PROPONENT AND SITE INFORMATION**

<b>Name of proponent</b>	Gary Morrison
<b>Postal address of proponent</b>	2279 Lady Barron Road, Lady Barron TAS 7256
<b>Contact person's details</b>	Gary Morrison 2279 Lady Barron Road, Lady Barron TAS 7255 0418 363 877 <a href="mailto:gary_morrison@bigpond.com">gary_morrison@bigpond.com</a>
<b>Consultant engaged to prepare TIS</b>	Van Diemen Consulting Pty Ltd (Sandun Ineshka and Colin McCoull) PO Box 1 New Town TAS 7008 0438 588 695 <a href="mailto:rwbarne73@gmail.com">rwbarne73@gmail.com</a>
<b>Location and Access</b>	The two extractive industry activities are proposed to occur at Lady Barron Road, Lady Barron TAS 7255. Access is from Lady Barron Road.
<b>The Land</b>	CT199735/1 which is further refined by the Development layout depicted in <b>Figure 2</b> .
<b>Mining Lease</b>	2116P/M (application pending)
<b>Mining Lease area</b>	109.5 hectares

**PART B - PROJECT DESCRIPTION****B.1 PROPOSED ACTIVITY**

The TIS assesses the use of an access for two separate activities proposed on a property located at 2279 Lady Barron Road, Flinders Island.

	<b>Quarry</b>	<b>Sand Extraction Pit</b>
<b>Material to be extracted</b>	<p>The material extracted is granite derived gravels and rock.</p> <p>Material will continue to be extracted by ripping and excavation with an excavator. There will be no blasting (i.e., no use of explosives). Some rock and gravel will be crushed and/or screened at the Storage Yard to produce an aggregate (<b>none</b> will be crushed or screened at the extraction pit).</p> <p>The activity has a lifespan of at least 20 years if full production levels are achieved every year from the commencement of the activity.</p>	<p>The material to be extracted is white aeolian sands of Quaternary age.</p> <p>Material will be extracted by ripping and excavation with an excavator. Some sands will be screened at the Storage Yard to remove rocks and/or organic material.</p> <p>The activity has a lifespan of at least 30 years if full production levels are achieved every year from the commencement of the activity.</p>
<b>Maximum extraction quantity</b>	4,999 cubic metres per annum (equivalent is approximately 8,998 tonnes per annum).	4,999 cubic metres per annum (equivalent is approximately 7,498.5 tonnes per annum).
<b>Maximum Extraction Area</b>	Approximately 1.6 hectares.	Approximately 3.4 hectares.
<b>Material extraction and processing</b>	<p>Extraction and processing would be undertaken in the following manner:</p> <ul style="list-style-type: none"> <li>• Stripping of vegetation (native forest and woodland, disturbed native vegetation and fire-affected eucalypt regrowth and scrub)</li> <li>• Clearing and stockpiling of topsoil with an excavator or dozer</li> <li>• Load and cart rock/gravel to the Storage Yard where it will be stockpiled and some crushed and/or screened. Gravels and rock may be directly carted from the Quarry to the</li> </ul>	<p>Extraction and processing would be undertaken in the following manner:</p> <ul style="list-style-type: none"> <li>• Stripping of vegetation (regrowth wattle on previously cleared and converted land for a vineyard)</li> <li>• Clearing and stockpiling of topsoil with an excavator or dozer</li> <li>• Load and cart sand to the Storage Yard where it will be stockpiled and some screened. Sand may be directly carted from the pit to the delivery destination without interim storage at the Storage Yard</li> </ul>

	<p>delivery destination without interim storage at the Storage Yard</p> <ul style="list-style-type: none"> <li>• Load gravel. Rock or aggregate (crushed and/or screened granite) into trucks with a wheel loader and then deliver</li> </ul>	<ul style="list-style-type: none"> <li>• Load sand into trucks with a wheel loader and then deliver</li> </ul>
<b>Transport</b>	All traffic would enter and exit from Lady Barron Road, with no trucks traversing the Lady Barron township (except local deliveries to the township or on the eastern side of the township).	
<b>Stockpiling</b>	Gravel and rock will be stored at the Storage Yard.	Sand (screened and unscreened) will be stored at the Storage Yard.
<b>Loading and carting of product for delivery</b>	<p>Monday to Friday, 0800 to 1700 hrs</p> <p>Saturday, 0800 to 1600 hrs</p> <p>No activity on Sunday and public holidays (those gazetted statewide)</p> <p>Given the very low volume of material per annum that can be removed from the Pit and that it is to be operated by the property owner, most (at least 90%) truck movements will be within daylight hours.</p>	



## PART C – EXISTING CONDITIONS

### C.1 LAND USES

The current land use is a mixture of native vegetation, previously cleared land (ex-vineyard and dam – proposed to be a sand extraction pit under a different development application), water infrastructure (Taswater easements that contain pipelines and a holding tank for Lady Barron township) and the existing gravel pit.

The land is subject to fuel reduction burns conducted by the Tasmanian Fire Service (the most recent in 2016) to provide fire protection to the Lady Barron township.

Surrounding land use is agriculture (mainly livestock grazing), a waste transfer station operated by the Flinders Council, water treatment plant operated by TasWater, an airstrip/landing facility (Murray Holloway Airfield – grass runway), Lady Barron Aerodrome to the north and residential/rural residential use (e.g., Vinegar Hill Drive and Moonbird Road) and the nearby Lady Barron township.

### C.2 TRANSPORT NETWORK

#### C.2.1 LADY BARRON ROAD

Lady Barron Road is part of the State road network owned and managed by the Department of State Growth. The road connects the Lady Barron township to Whitemark.

The existing track/road and a new section of 'to be built track' will enable access from the Pit to the Storage Yard (**Figures 2 and 4**). The new section will be constructed in accordance with the Forest Practices Code.

#### C.2.2 ACCESS

The property access is onto Lady Barron Road (a sealed road). The access will be constructed per the Standard Drawing TRUCK ACCESS TO RURAL PROPERTIES 'TYPE A' (Drawing: TSD-R05-v2) in **Attachment 2**. A seal (2 coat spray seal) will be applied from the current seal on Lady Barron Road in 25m of the new unsealed road.

Line of sight distances are more than 180 m in both directions given the section of road is relatively straight and flat.

#### C.2.3 OTHER ACCESSES OFF LADY BARRON ROAD

There are two access onto lady Barron Road northwards of the proposed access from the property that will be used by the Quarry and Sand Pit activities. Details about the use and form of the accesses are provided below.

#### **TasWater Facility**

An unsealed road is located on the western side of Lady Barron Road to access the Taswater water treatment facility. There is no seal into the access from the sealed road surface of Lady Barron Road. The facility (not operated by personnel on an ongoing basis) sends water via a pipeline to a header tank near the Quarry which then reticulates to the Lady Barron township.

### **Flinders Council Waste Transfer Station**

An unsealed road is located on the western side of Lady Barron Road to access the waste transfer station. There is no seal into the access from the sealed road surface of Lady Barron Road.

The facility is open 24 hours a day and is simply a skip bin which is taken to the Whitemark tip by Council. Given the opening hours, there is no set period within which traffic would be generated by the use serviced by the access. It is fair to say that the volume of traffic generation would be low given the low number of residents in the Lady Barron area that would use the facility.

## PART D – TRAFFIC IMPACTS

### D.1 TRAFFIC GENERATION

#### D.1.1 CHARACTERISTICS OF TRAFFIC

The traffic generated by the two activities is principally trucks, with only occasional and minor movement of light vehicles and a water cart truck (unlikely to regularly use the access as water is available (water bore) at the site).

Machinery may be floated to the site (e.g., crusher and screen) if a contractor was engaged to provide these services: however, this would only be once or twice per year.

#### D.1.2 PROPOSED TRIP GENERATION AT ACCESS

A trip in this report is defined as a one way vehicular movement from one point to another, excluding the return journey. Therefore, a return trip to and from a land use is counted as two trips.

Information is usually sourced from the RTA Guide to Traffic Generating Developments to determine the number of trips likely to be generated by this development. As the RTA Guide does not contain information on quarries, the estimation of trip generation will be based on the transport tasks of moving the extracted material from both sites.

**Table 1** provides a summary of the tonnages.

There would be a maximum of 10 truckloads delivered per day (20 traffic movements per day) with an average of 5 truckloads per day.

**Table 1. Truck generation rates per annum for the access onto Lady Barron Road**

	Quarry	Sand Extraction Pit	TOTAL
Tonnage/annum	Approximately 9,000	Approximately 7,500	16,500
Trucks per annum (all 10t loads) (movements)	900 (1800)	750 (1,500)	1,650 (3,300)
Trucks per annum (all 15t loads) (movements)	600 (1,200)	500 (1,000)	1,100 (2,200)
Trucks per annum (50% are 10t, 50% are 15 t loads) (movements)	750 (1,500)	625 (1,250)	1,375 (2,750)

There would be a maximum of 10 truckloads delivered per day (20 traffic movements per day) from each of the activities, with an average of 5 truckloads per day.

**Table 2** provides a summary of the number of likely cart days based on 10 truckloads (20 truckloads total using the access) being removed from each of the two sites.

**Table 2. Number of likely cart days for each activity and the total per annum**

	Quarry	Sand Extraction Pit	TOTAL
All 10t loads	90	75	Up to 165
All 15t loads	60	50	Up to 110
50% are 10t, 50% are 15 t loads	75	62.5	Up to 137.5

#### D.1.4 SEASONALITY

The traffic generated is seasonal, with most truck movements occurring in the spring to autumn months when construction related materials are most needed. For example, concrete production and works for road repairs (e.g., internal farm laneways) are far less likely to occur in the cooler wetter winter months, and wet early spring months.

## D.2 ACCESS IMPACTS

### D.2.1 MAJOR ROAD

Lady Barron road is a major Road which the site access is connected to and is a two way sealed road with a design speed of 100 km/h.

### D.2.2 TURN TREATMENTS

Austrroads part 6 provides a guidelines and technical requirements that should be fulfilled when designing a junction. In a rural road where design speed exceeds 100 km/h ( $\geq 100$  km/h), requirements for junction treatments are shown in the figure below.

The peak turning movement from the major road (predominantly left turn in movements) would be as low as 2 vehicles per hour. As per the graph shown in the figure, that amount can be accommodate for any number of traffic volume ( $Q_M$ ) in the major road without a problem. Hence, necessity provide a separate turning lane on the entrance ceases to exist. However, since this is a rural road, the major road traffic volume will also be on the lower side allowing much higher turn volumes.

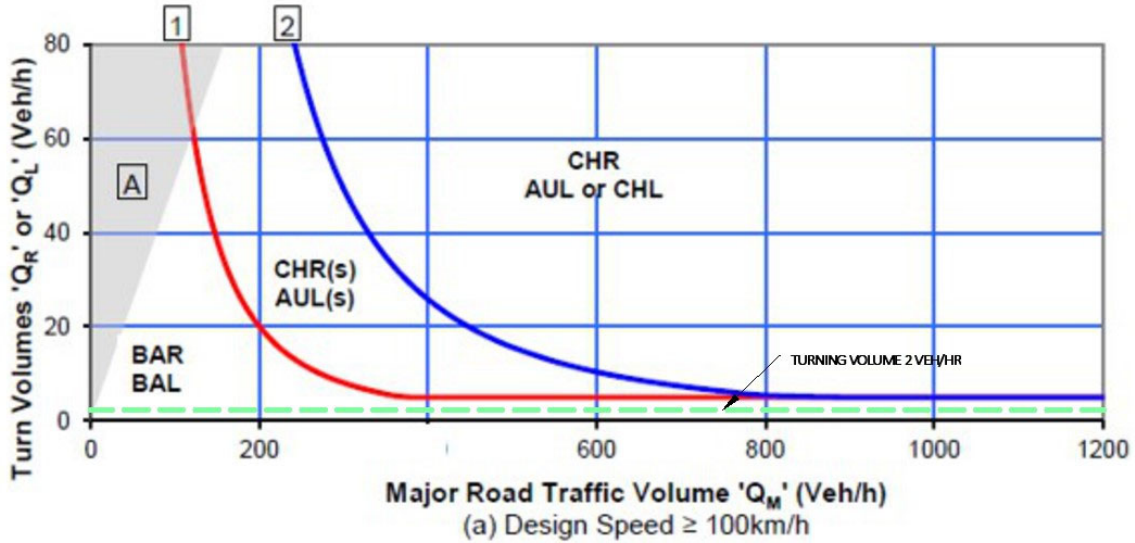


Figure 01: Warrants for turn treatments on major roads at unsignalized intersections

**D.3 SIGHT DISTANCE ASSESSMENT**

As per Austroads Part 4A, SISD is the minimum sight distance which should be provided on the major road at any intersection. The allowable speed in Lady Barron Road is 100 km/h and minimum SISD required for that speed considering an observation time of 3 seconds and a reaction time of 2.5 seconds, is **262m** on either side of the intersection.

The stretch of Lady Barron Road where the access to the site is located is relatively flat and straight. The available sight distance towards the Northern direction along the road is approximately **310m** while it is about **330m** towards the Southern side where Lady Barron Township is located.

Therefore, available sight distance exceeds 262 meters in both directions along Lady Barron Road from the proposed access location. Hence, the Austroads SISD requirements are met at the site’s access junction.

Available sight distance from access point is shown in **Figures 2 and 3**.



Figure 2: Facing north from the Entrance



Figure 3: Facing south from the Entrance

## D.4 INTERSECTIONS

The nearest intersection to the proposed access point to the north is the Taswater facility access intersection, approximately 150m away. This is a T junction and serves as an access road/track to a Taswater facility. Traffic volumes on Lady Barron Road are relatively low. Traffic generated from the quarry will not be turning to or using this access road.

The nearest intersection to the access point from south is the Vinegar Hill drive intersection, approximately 520m away along Lady Barron Road as shown in **Figure 4**. Therefore, the impact from the traffic generated by the Quarry and Sand Pit activities at this intersection can be considered negligible.

Hence, the traffic flow reaching the intersections will not be affected by the traffic generated from the quarry – sand pit activities.

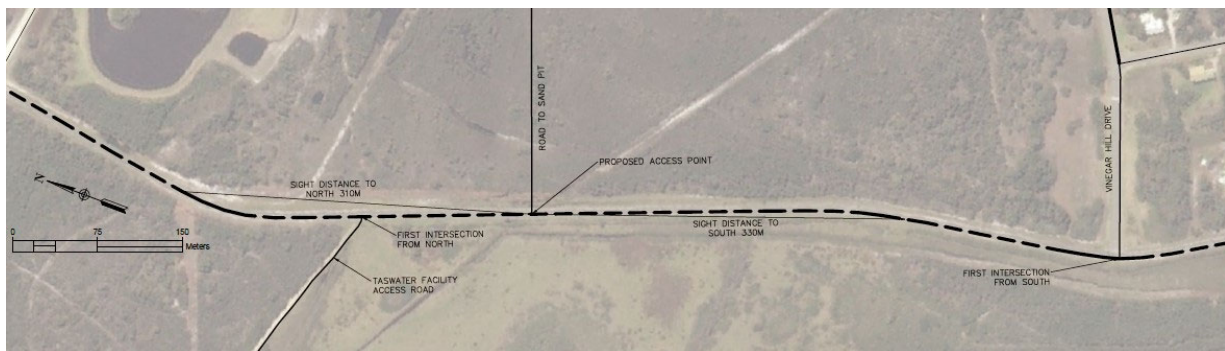


Figure 4: Sight distances and adjacent intersections to proposed quarry site access.

## D.5 ROAD SAFETY IMPACTS

### D.5.1 PEDESTRIANS AND CYCLISTS

Dedicated provisions for pedestrians and cyclists have not been provided in the major road and the number of pedestrians and cyclists is very limited. Hence, impact on pedestrians and cyclists will be considered as negligible. Further, general pedestrians and cyclists will not be allowed to the site.

### D.5.2 CRASHES

From 2016 to 2021 there have been only 8 crashes on Lady Barron Road. This is for a road stretch of 25km from Lady Barron Township to Lady Barron – Palana road intersection. All the crashes except one have been single vehicle crashes. Also, all those crashes have been minor and have only caused property damage. No crashes have been recorded in the vicinity of the entrance to the site on the Lady Barron Road during the 2016 to 2021 period.

Crash statistics indicate that occurrences of crashes on Lady Barron Road are rare. Hence, no safety issues related to crashes exist in this stretch of the road.

## **PART E – CONCLUSION**

Two activities are proposed to use a new access onto Lady Barron Road, with each operating separately of the other –

1. **Quarry** connected to a Storage Yard area where rock and gravel will be hauled to, stockpiled and some crushed and/or screened (up to 1,000 cubic metres per annum; equivalent is approximately 1,800 tonnes). Up to 4,999 cubic metres (equivalent is approximately 8,998 tonnes) per annum may be extracted and removed from the Land.
2. **Sand Extraction Pit** is to be connected to the storage yard area where sand will be hauled to, stockpiled and some screened (up to 1,000 cubic metres per annum; equivalent is approximately 1,500 tonnes) to remove rocks and/or organic material. Up to 4,999 cubic metres (equivalent is approximately 7,498.5 tonnes) per annum may be extracted and removed from the Land.

The location of the new access provides appropriate SISD per the Austroads requirements.

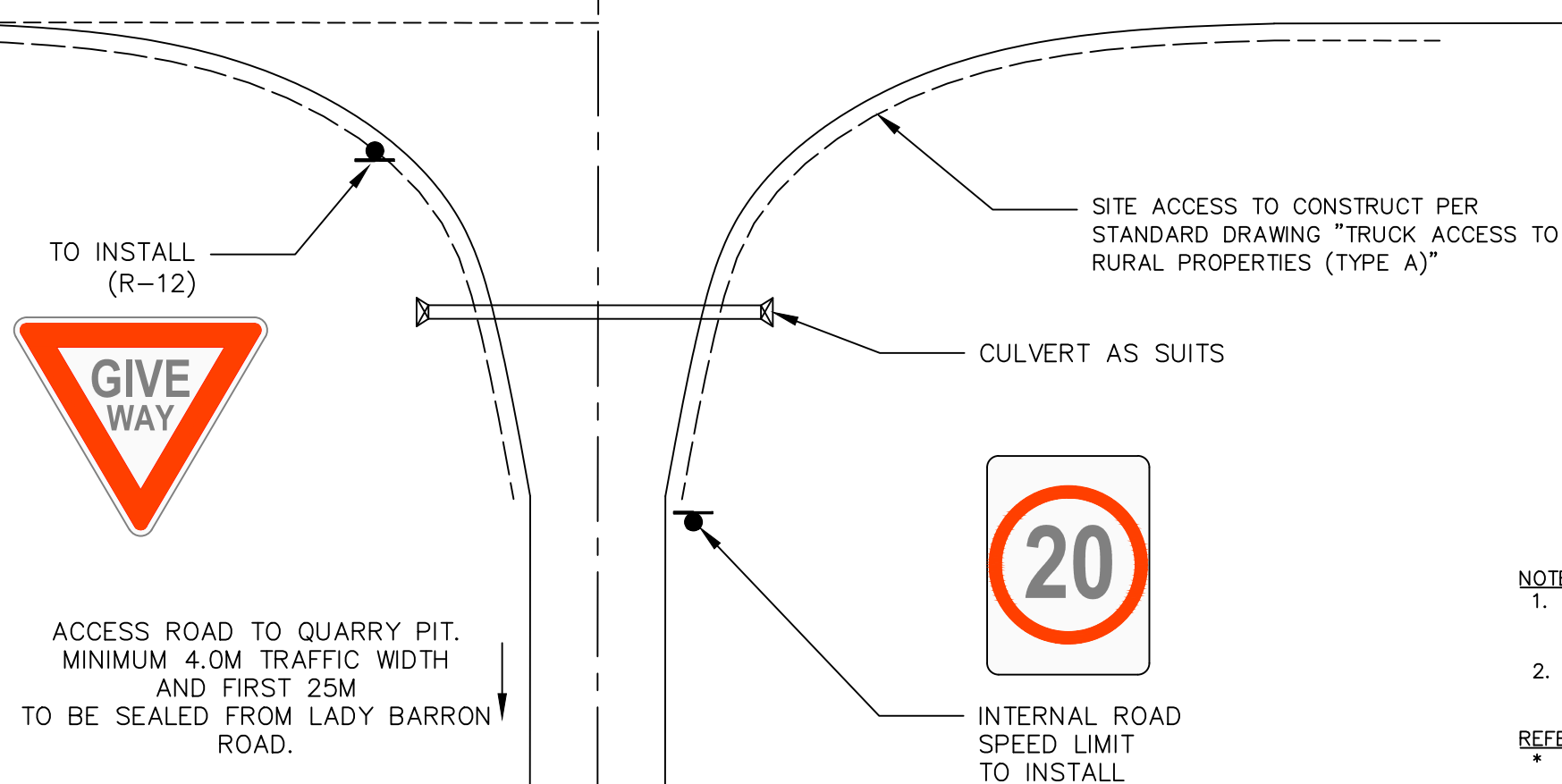
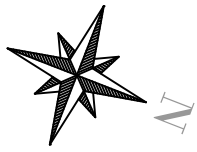
The low volume of traffic on Lady Barron Road, and the low traffic generated by the use, shouldn't cause any conflict with traffic flow at the nearby intersections (Taswater and Council landfill facilities) or the road network generally. No road specific measures (e.g., BAR treatment) or furniture is required.

A suggested design for the new access is provided in **Attachment 1**.

**ATTACHMENT 1**

**RECOMMENDED ACCESS/JUNCTION DESIGN**





**NOTES**

1. PROPOSED JUNCTION TO BE CONSTRUCTED IN ACCORDANCE WITH TASMANIAN STANDARD DRAWING "TSD-R05-V2"
2. PIPE CULVERT WILL BE INSTALLED TO SUIT THE EXISTING DRAINAGE SYSTEM

**REFERENCE**

- \* AS 1742.2 - 2009 ; TRAFFIC CONTROL DEVICES FOR GENERAL USE
- \* AUSTRROADS GUIDE TO TRAFFIC MANAGEMENT PART 10 ; TRANSPORT CONTROL - TYPES OF DEVICES
- \* TASMANIAN STANDARD DRAWINGS

LOCATION: 2279 LADY BARRON ROAD, FLINDERS ISLAND, TAS 7255

CLIENT: GARY MORRISON

DWG NO: VDC\_GM\_0001

REV NO: 1.0

VERTICAL DATUM: GDA94 MGA ZONE 55 | HORIZONTAL DATUM: AHD

SCALE @A3 - 1:200

DATE: 15/08/2022

PROPOSED PROPERTY ACCESS AT LADY BARRON ROAD.

PROJECT: INTENSIFICATION OF USE OF QUARRY AND INSTALLATION OF ANCILLARY STORAGE YARD



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