

**REVEGETATION PLAN**

**MATERIAL PIT EXTENSIONS  
MINILYA EXMOUTH ROAD  
6.89. 53.75. 63.70 & 72.50 SLK**



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# PROJECT TITLE

## REVEGETATION PLAN

### 1. PROJECT DESCRIPTION

#### 1.1 Purpose

Main Roads Western Australia (MRWA) has a policy aim to “protect and enhance the environmental values of road reserves”. This document has been prepared to ensure compliance with Main Roads’ Environmental Policy and Main Roads’ Clearing Purpose Permit CPS 818/2.

In the process of establishing new roads and upgrading existing roads, there is often a need to undertake revegetation of the road reserve or other affected areas. Where clearing of native vegetation is to occur under Main Roads’ Clearing Purpose Permit CPS 818/2, a revegetation plan is required for temporary clearing (eg. borrow pits, access tracks, camps etc.). Where the temporary clearing exceeds 0.5ha, the revegetation plan needs to be forwarded to the Department of Environment and Conservation prior to clearing.

This revegetation plan sets out the revegetation requirements for the borrow pits located at 6.89, 58.30, 63.70 & 72.50 SLK along Minilya-Exmouth Road.

The purpose of the revegetation plan is to identify effective revegetation practices that help accelerate the natural succession processes that occur following the clearing of native vegetation and soil disturbance.

#### 1.2 Background

Main Roads Gascoyne and BGC over a number of years have slowly been exhausting gravel stockpiles within the Region. The extension of numerous pits is required to supply gravel for the maintenance of the Main Roads network and also for the supply of material in emergency situations (e.g. cyclone damage).

This report details the extension of 4 gravel pits located at:

- 6.89 SLK, RHS, Minilya-Exmouth Road
- 58.30 SLK, RHS, Minilya-Exmouth Road
- 63.70 SLK, LHS, Minilya-Exmouth Road
- 72.50 SLK, RHS, Minilya-Exmouth Road

All proposed pit extensions are within the Shire of Carnarvon.

As per Main Roads’ Environmental Assessment and Approval process, the Low Impact Environmental Screening Checklist has been completed for the proposal, refer to Appendix A. As the proposed works involves the clearing of native vegetation, the preparation of a project specific Revegetation Plan is required. This report fulfils this requirement.

### 1.3 Project Description

Gravel Pit 6.89 SLK is located approximately 500 meters off Minilya-Exmouth Road on the right hand side. The proposed extension is to the west of the existing pit boundary (See figure 2). The dimensions of the pit are approximately 100m long by 100m wide. The access track into the pit is in good condition and will easily allow the movement of machinery in and out of the project area.

Gravel Pit 53.75 SLK is located approximately 1.6 kilometres off Minilya-Exmouth Road on the right hand side. The proposed extension is to the north-east of the existing pit boundary (See figure 3). The dimensions of the pit are approximately 100m long by 100m wide. The access track into the pit is in good condition and will easily allow the movement of machinery in and out of the project area.

Gravel Pit 63.70 SLK is located approximately 950 meters off Minilya-Exmouth Road on the left hand side. The proposed extension is to the north-east of the existing pit boundary (See figure 4). The dimensions of the pit are approximately 100m long by 100m wide. The access track into the pit is in good condition and will easily allow the movement of machinery in and out of the project area.

Gravel Pit 72.50 SLK is located approximately 500 meters off Minilya-Exmouth Road on the right hand side. The proposed extension is to the north-east of the existing pit boundary (See figure 5). The dimensions of the pit are approximately 100m long by 100m wide. The access track into the pit is in good condition and will easily allow the movement of machinery in and out of the project area.

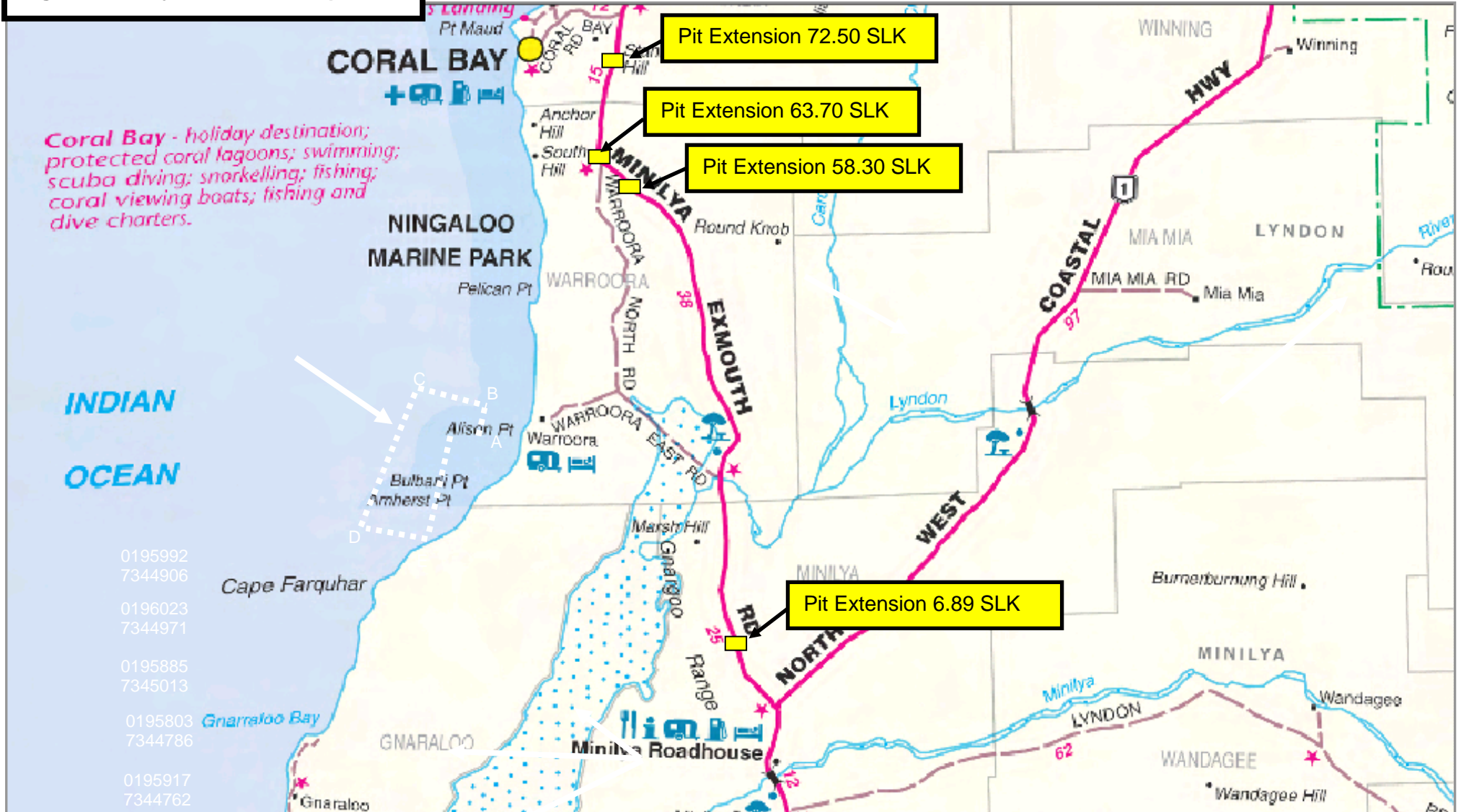
The areas to be rehabilitated are shown in Table 1:

Table 1: Revegetation Area Details

Type	Area
Temporary clearing revegetation	6.89 SLK = 1.0 (ha) 58.30 SLK = 1.0 (ha) 63.70 SLK = 1.0 (ha) 72.50 SLK = 1.0
Other revegetation	0 hectares

The location and boundaries of the revegetation area(s) are shown in Figures 1 - 5 below.

Figure 1 – Project Location Map



**Figure 2 – 6.89 SLK Pit Extension**

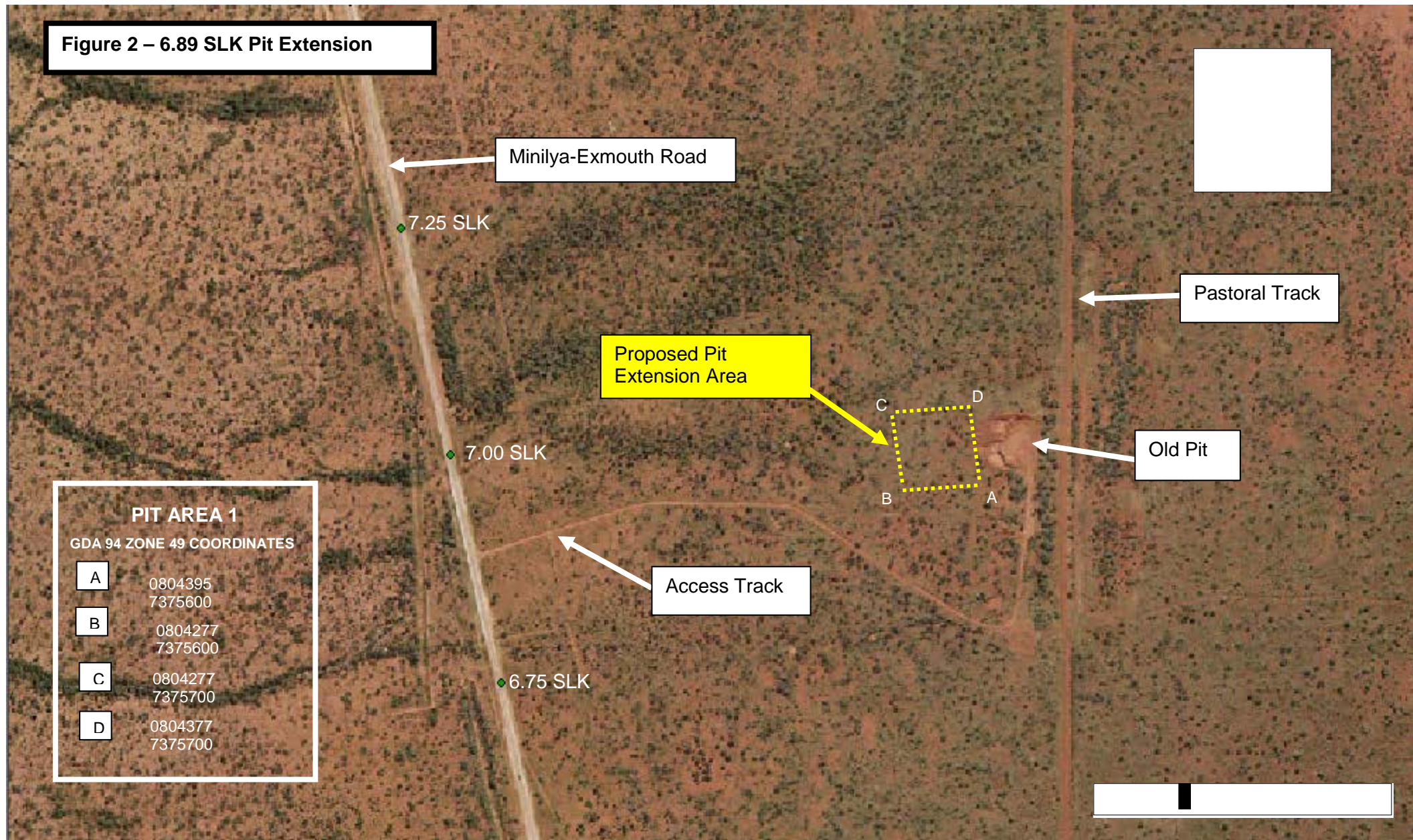
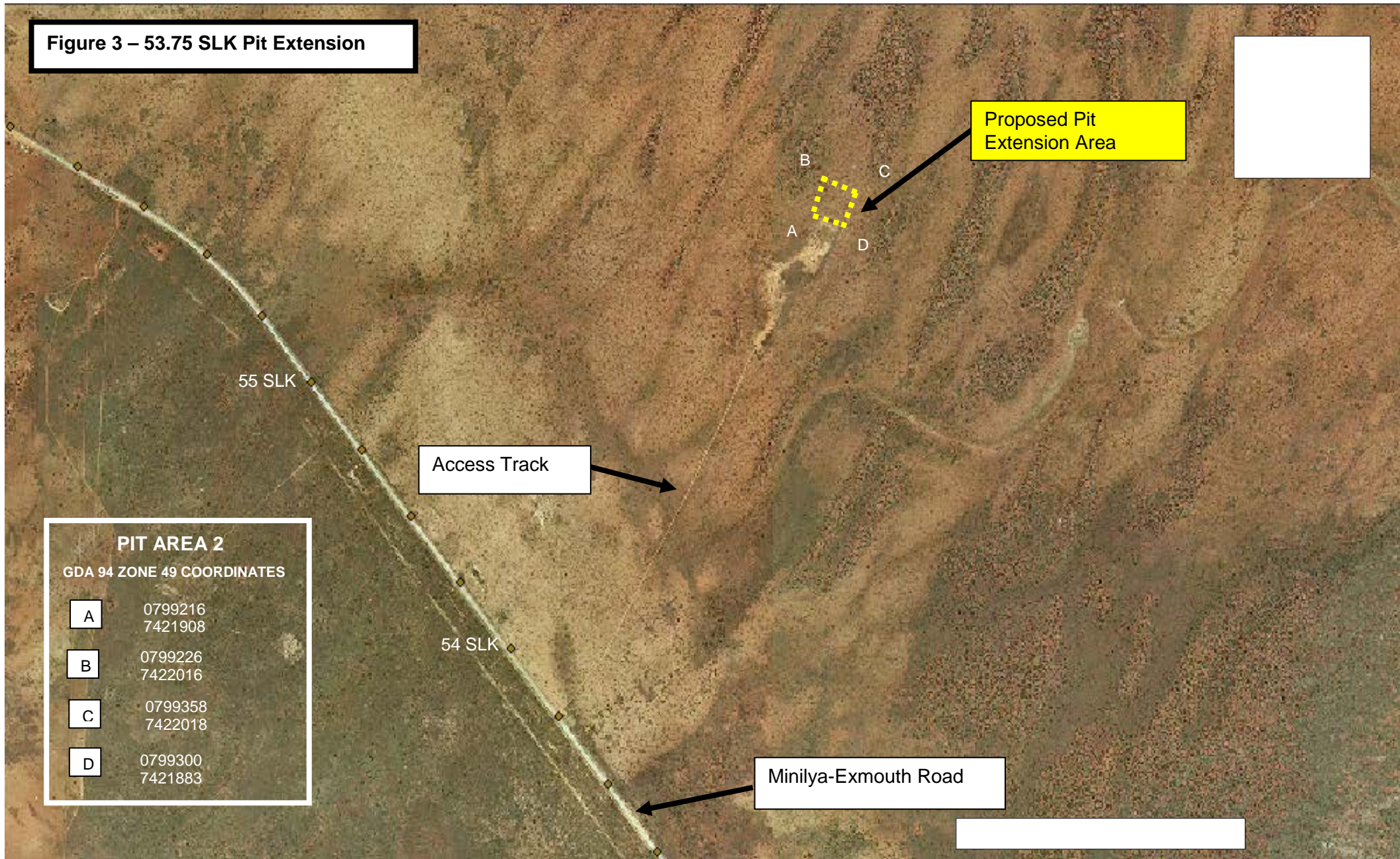


Figure 3 – 53.75 SLK Pit Extension



**Figure 4 – 63.70 SLK Pit Extension**

Access Track

Proposed Pit Extension Area

Minilya-Exmouth Road

63 SLK

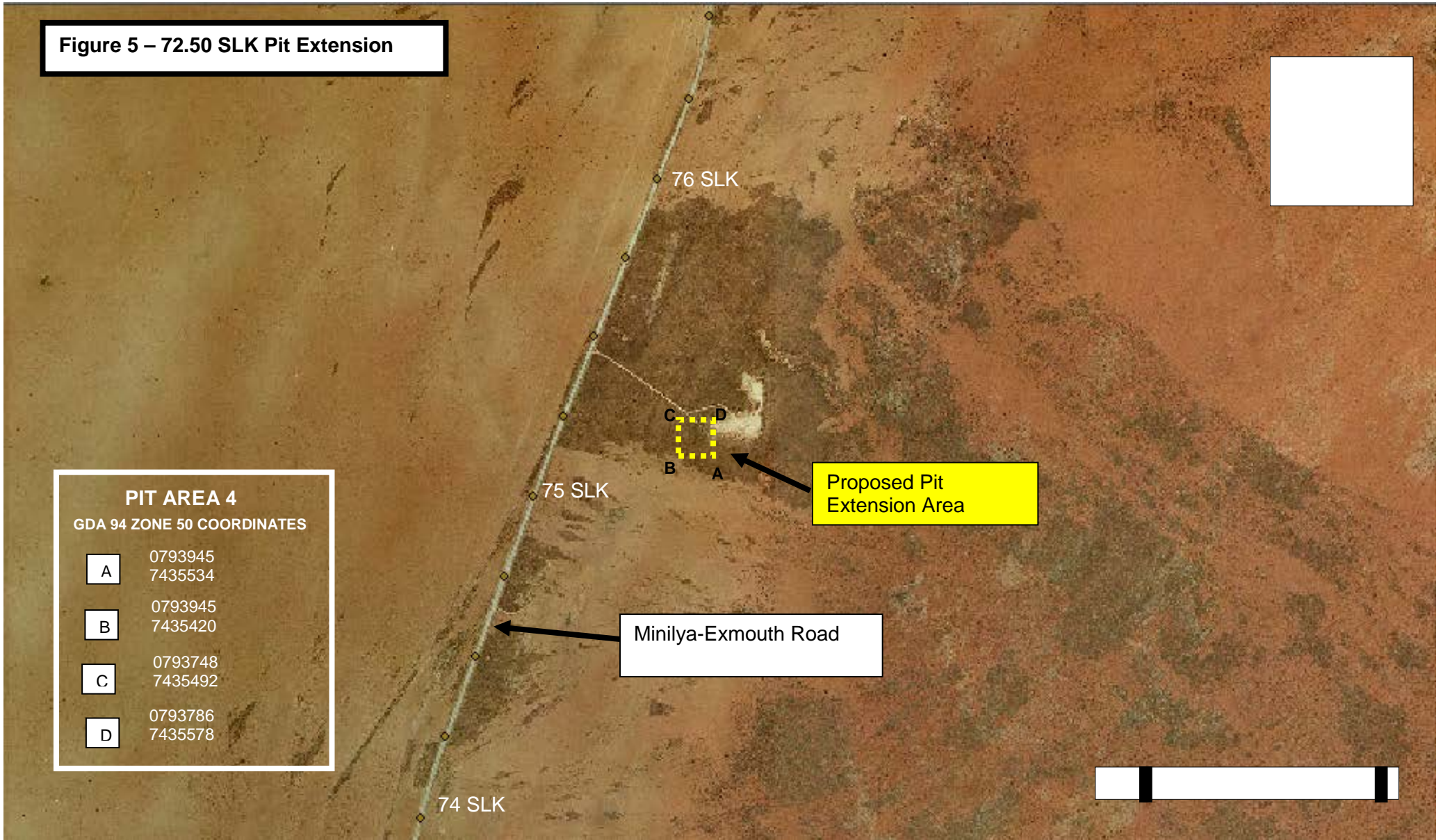
**PIT AREA 3**

GDA 94 ZONE 50 COORDINATES  
GDA 94 ZONE 50 COORDINATES

A	0176962 7426161
B	0177055 7426170
C	0176955 7426039
D	0177064 7426039



Figure 5 – 72.50 SLK Pit Extension



## 1.4 Existing vegetation

### Pit 6.89 SLK

This material pit occurs within vegetation association 244 which is described as “*Shrublands; Acacia sclerosperma & A. victoriae scrub*”. According to the Native Vegetation Association Data (DEC & DAF) this vegetation association is well represented in the region with 100% remaining. The condition of the vegetation is best described as good, but somewhat degraded due to the grazing of cattle.

### Pit 53.75 SLK

This material pit occurs within vegetation association 622 which is described as “Hummock grassland; shrub steppe; mixed acacia scrub & dwarf scrub with soft spinifex & *Triodia basedowii* “. According to the Native Vegetation Association Data (DEC & DAF) this vegetation association is well represented in the region with 99.3% remaining. The condition of the vegetation is best described as good, but somewhat degraded due to the grazing of cattle.

### Pit 63.70 SLK

This material pit occurs within vegetation association 622 which is described as “Hummock grassland; shrub steppe; mixed acacia scrub & dwarf scrub with soft spinifex & *Triodia basedowii* “. According to the Native Vegetation Association Data (DEC & DAF) this vegetation association is well represented in the region with 99.3% remaining. The condition of the vegetation is best described as good, but somewhat degraded due to the grazing of cattle.

### Pit 72.50 SLK

This material pit occurs within vegetation association 622 which is described as “Hummock grassland; shrub steppe; mixed acacia scrub & dwarf scrub with soft spinifex & *Triodia basedowii* “. According to the Native Vegetation Association Data (DEC & DAF) this vegetation association is well represented in the region with 99.3% remaining. The condition of the vegetation is best described as good, but somewhat degraded due to the grazing of cattle.

The following lists of species were observed at the proposed material pits:

*Acacia ancistrocarpa*  
*Acacia bivenosa*  
*Acacia gregorii*  
*Acacia inaequilatera*  
*Acacia linophylla*  
*Acacia murryana*  
*Acacia sclerosperma*  
*Acacia subtesserogona*  
*Acacia tetragonopylla*  
*Acacia victoriae*  
*Aristida contorta*  
*Baeckea cryptandroides*  
*Brachysema aphyllum*  
*Cenchrus ciliaris*  
*Clerodendrum floribundum*  
*Corchorus walcotti*

*Cullen martinii*  
*Eremophila cuneifolia*  
*Eucalyptus aff. sentosa*  
*Grevillea sp.*  
*Grevillea variifolia*  
*Hakea candolleana*  
*Hakea preissii*  
*Heterodendrum oleaefolium*  
*Muehlenbeckia cunninghamii*  
*Plectrachne schinzii*  
*Stylobasium spathulatum*  
*Thryptomene baeckeacea*  
*Tribulus platypterus*  
*Triodia basedowii*

No mature trees will be cleared for the works.

There are no declared rare or priority flora within the pit sites.

## **1.5 Weeds**

Buffel grass was observed within the project areas.

## **2. SITE PREPARATION**

### **2.1 Vegetation clearing, mulching and re-use**

All vegetation will be cleared from the works area and non-weed infested vegetation will be stockpiled. Stockpiled vegetation will not be placed on the very edge of the approved cleared area in order to prevent machinery going outside the cleared area to push the stockpile forward again. Weed infested vegetation will be disposed of at an appropriate site. Burning of the cleared vegetation will not be permitted.

### **2.2 Topsoil stripping and re-use**

Topsoil will be stripped to a maximum depth of 100 mm. Topsoil will be stored in a weed free (as far as possible) area, as close as possible to the area to be rehabilitated. The topsoil will be placed in windrows of less than 1m in height and reinstated as soon as possible, to prevent deterioration to the in-situ seeds and maintain seed viability.

## **3. WEED CONTROL**

Adequate control measures will be incorporated to ensure weeds are killed or not transported to other areas. Control measures include removal of weeds to an approved dump site or treatment of weeds such as using herbicide spraying.

Herbicide spraying shall only be carried out by licensed operators and herbicide shall be mixed and applied in accordance with manufacturer's instructions.

Where practicable, weeds should not be removed when they are in flower or seeding.

All machinery shall be free of built up soil and vegetative material before entering and leaving the site to help minimise the transportation of weeds and their seeds.

Exposed areas such as bare batters and borrow pits shall be promptly rehabilitated to reduce the ingress of weeds.

## **4. REVEGETATION THROUGH REGENERATION**

### **4.1 Revegetation objectives**

The revegetation objectives are to:

- Ensure roadside stability and minimise ongoing maintenance;
- Ensure that conservation values and biodiversity are protected; and
- Ensure local amenity and aesthetics are enhanced.

### **4.2 Required vegetation cover**

The roadside vegetation should be similar in structure and content to comparable naturally occurring vegetation in the local area and will reflect the vegetation communities present in the road reserve and adjacent bushland. The width of the vegetation setbacks and clearances will be appropriate for the specific location and will be dependent on an assessment of the road design speed, road alignment and the roadside batter slopes.

### **4.3 Revegetation Techniques**

The following rehabilitation works shall be undertaken on areas of disturbed earth requiring rehabilitation:

- Topsoil will be uniformly respread to a minimum depth of 100 mm over the area and;
- Area to be ripped to a minimum depth of 200mm deep with rip lines approximately 300mm apart. Where slopes are present, rip lines shall be along contours.

The following rehabilitation work shall be undertaken at borrow/gravel pits:

- Overburden and then topsoil shall be uniformly and evenly spread over the disturbed areas of the pit. Depending on the slope of drainage lines within the pit, it may be necessary to form small swales from the topsoil to reduce erosion velocities and encourage the deposition of seeds.
- The existing pit floor shall be ripped to a depth of 300 – 500mm deep with rip lines between 500 - 800mm apart, if the material in the floor of the pit is able to be ripped. The whole area of the pit, including drainage lines, shall be ripped.
- All stockpiled vegetation shall be spread along the contour and pit floor to help promote seed deposition and further reduce erosion velocities.

## 5. VEGETATION ESTABLISHMENT PERIOD

The vegetation establishment period will be for at least twelve months following the completion of the works. During this period, the maintenance and monitoring will be undertaken, see Section 6.

## 6. ONGOING MAINTENANCE AND MONITORING

Maintenance and monitoring of the project shall be ongoing to measure regeneration effectiveness and to control weeds.

### 6.1 Maintenance and Monitoring

After revegetation works, revegetated areas will be inspected every six months for a total of 12 months to monitor and control weeds and to measure the effectiveness of revegetation works.

Monitoring will comprise the use of criteria. Essentially, this involves visual assessment to ensure the revegetation works have been implemented as planned. Table 2 shall be used as the monitoring guide to assess the success or otherwise of the revegetation plan.

Due to the variable rainfall patterns in pastoral areas, revegetation works may not be successful, despite the use of best management practices.

Table 2: Revegetation Monitoring Guide

Criterion	Target	After three months	After one year	After three years
Mean vegetation foliage cover (%) excluding weeds.	>50	0	20	40
Mean weed foliage cover (%).	<20	<20	<20	<20
Amount of bare soil areas >4m <sup>2</sup> (%).	<30	<100	<80	<50