LINKING MELBOURNE AUTHORITY

Our Reference: A209743

Your Reference:

25 February 2011

Chris Murphy
Commonwealth and Territories Section
Environment Assessment Branch
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
Canberra ACT 2601

Attention: Sylvana Maas

Dear Chris

RE: Additional information to referral for Shared Use Path, Pines Flora and Fauna reserve – EPBC Referral 2009/5100.

Linking Melbourne Authority submitted a referral under the Environment Protection and Biodiversity Conservation Act (1999) for a Shared Use Path through the Pines Flora and Fauna Reserve (EPBC Ref. 2009/5100).

This referral was submitted in September 2009. The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) sent a request for additional information regarding the referral in October 2009. Specifically, DSEWPaC required further information as follows:

Point 1.) Final design, location and number of fauna crossings;
Point 2.) Details of how access to the Pines Flora and Fauna Reserve will be managed to ensure the outcomes of condition 2C of Peninsula Link Project Approval (2007/3480) will not be compromised;
Point 3.) Measures that will ensure domestic pets will not enter Southern Brown Bandicoot habitat.

Supplementary information was submitted to DSEWPaC on 30 August 2010 to address the above-mentioned request (see attachment 2). LMA has since undertaken further work on the shared use path and this updated information has been provided in attachment 1.

Should you have any further queries, please do not hesitate to contact Jenny Carbery on 8562 6872.

Yours sincerely

Ken Mathers
Chief Executive Officer

cc: David Clements – Southern Way

Attachment 1:

1 Shared Use Path Design – Fauna Underpasses

A concept for the design of the fauna underpasses along the shared use path (SUP) within the Pines Flora and Fauna Reserve was developed for the project by Dr. Rodney van der Ree of the Australian Research Centre for Urban Ecology (ARCUE).

Southern Way and Abigroup, the operators and design and construction companies for Peninsula Link have taken the ARCUE information and further developed the SUP fauna crossings concept. Abigroup has engaged Biosis Research to assist in the development of the detailed design of the shared use path in the Pines Reserve and in particular the locations and dimensions of the fauna crossings. Figures 1a to 1f show the detailed design of the shared use path within the Pines Reserve.

The fauna crossings are located around chainage 1200, 1600 and 1700 of the shared use path. The locations of the fauna crossings under the shared use path are positioned to compliment the fauna crossings under the Peninsula Link alignment.

Generally, Southern Brown Bandicoots (SBB) and other fauna of similar size or smaller will be able to traverse the SUP between chainage 1150 and chainage 1780 at any location as the dog proof fencing allows free passage for small native fauna. The three dedicated fauna crossings will 30 metres long and 1.5 metres high and be of timber construction as well as incorporation of culverts on the approaches to the boardwalks. The boardwalk sections will allow free passage for SBB, however it is anticipated that larger fauna such as wallabies will also utilise these crossings.

The boardwalk underpasses will be of similar design to that shown in Figure 3. The boardwalk underpasses will allow light to penetrate through the structure and therefore promote the growth of vegetation underneath which will create a protective cover for fauna using the underpass.

2 Management of Pines Flora and Fauna Reserve to incorporate condition 2C

Condition 2C of Peninsula Link Approval (2007/3480) requires the following predator control measures to be addressed within the SBB Management Plan:

- initiation and maintenance of a predator control and monitoring program in the Pines Flora and Fauna Reserve;
- installation and maintenance of a predator proof fence around the boundary of the Pines Flora and Fauna Reserve;
- identification of impact thresholds that will trigger management intervention.

LMA has established a SBB Management Plan (SBBMP) working group, consisting of LMA, DSE and Parks Victoria to undertake the formal review of the SBBMP prior to the operation of the freeway (December 2012). There are many issues which need to be resolved before a revised SBB Management Plan can be prepared. LMA has decided to bring forward the review of the SBB Management Plan and undertake the work in 2011 with the intention to release a draft plan for comment to the community in early 2012.

The installation and maintenance of the predator proof fence is a key issue which needs to be addressed. As part of the fence planning, the SBB Working Group will visit the Royal Botanic Gardens Cranbourne (RBGC) to discuss maintenance requirements of a predator proof fence, as well as fire management and predator control at the RBGC. This information will help with the planning for SBB management at The Pines FFR.

LMA is working with Parks Victoria to undertake an integrated predator control program at the Pines FFR in early March 2011. This will involves soft jaw trapping of foxes, rabbit baiting

and a trial fox baiting program using 1080. Sand-pad monitoring has commenced to estimate fox activity across the Pines ahead of the integrated program, and will serve as an indication of the success of the integrated program.

LMA is also contributing to a project "*developing effective fox control strategies in urbanising landscapes Phase1*". In summary, Phase 1 of the project is to attach GPS transmitters to 20 foxes and track their movements, den locations and habitat preferences from Autumn 2011 for approx 6 months. The second Phase of this project will be built upon the findings of Phase 1 and will focus on answering a number of applied questions relating to the effectiveness of fox control techniques and the patterns of re-invasion after control. This project will have a focus on foxes in The Pines FFR.

The SBB Spring 2010 'Construction' monitoring program has been completed. No SBB were observed on camera. However, one SBB hair was identified at the same location as previously found during the pre-construction survey. A small number of diggings were also identified. No other evidence of SBB was found, indicating that a very small population persists.

3 Domestic pets

A dog proof fence that runs along sections of the SUP (on both sides) to prevent dogs from entering SBB core habitat is shown in figures 1d-1e. The fencing will be VicRoads type H2B, as shown in Figure 2. This fencing consists of timber posts and ringlock mesh fabric. The boardwalks will be free from fencing to allow fauna to freely move across the fauna crossings and under boardwalks. Dogs will be prevented from entering habitat and will not be able to venture away from the boardwalks as balustrading will be incorporated into the design. An example of balustrading is shown in figure 3.

Parks Victoria will review current dog walking status during the preparation of a management plan for the reserve. Parks Victoria has advised that it will develop a dog exclusion policy for the Pines FFR. Once developed, this policy will require a consultation process with the community.

4 Community Consultation

LMA has held a number of meetings with the community in relation to the Peninsula Link Project. The most recent meeting was held on 11th February 2011. The community was advised about progress relating to The Pines, including weed management, revegetation of the former orchard and the upcoming integrated predator control program. Furthermore, the SUP design through the Pines was discussed, including fencing both sides of the SUP at certain sections to keep dogs out of core SBB habitat. There were no objections received from the community.

Figure 1a: SUP design through The Pines FFR

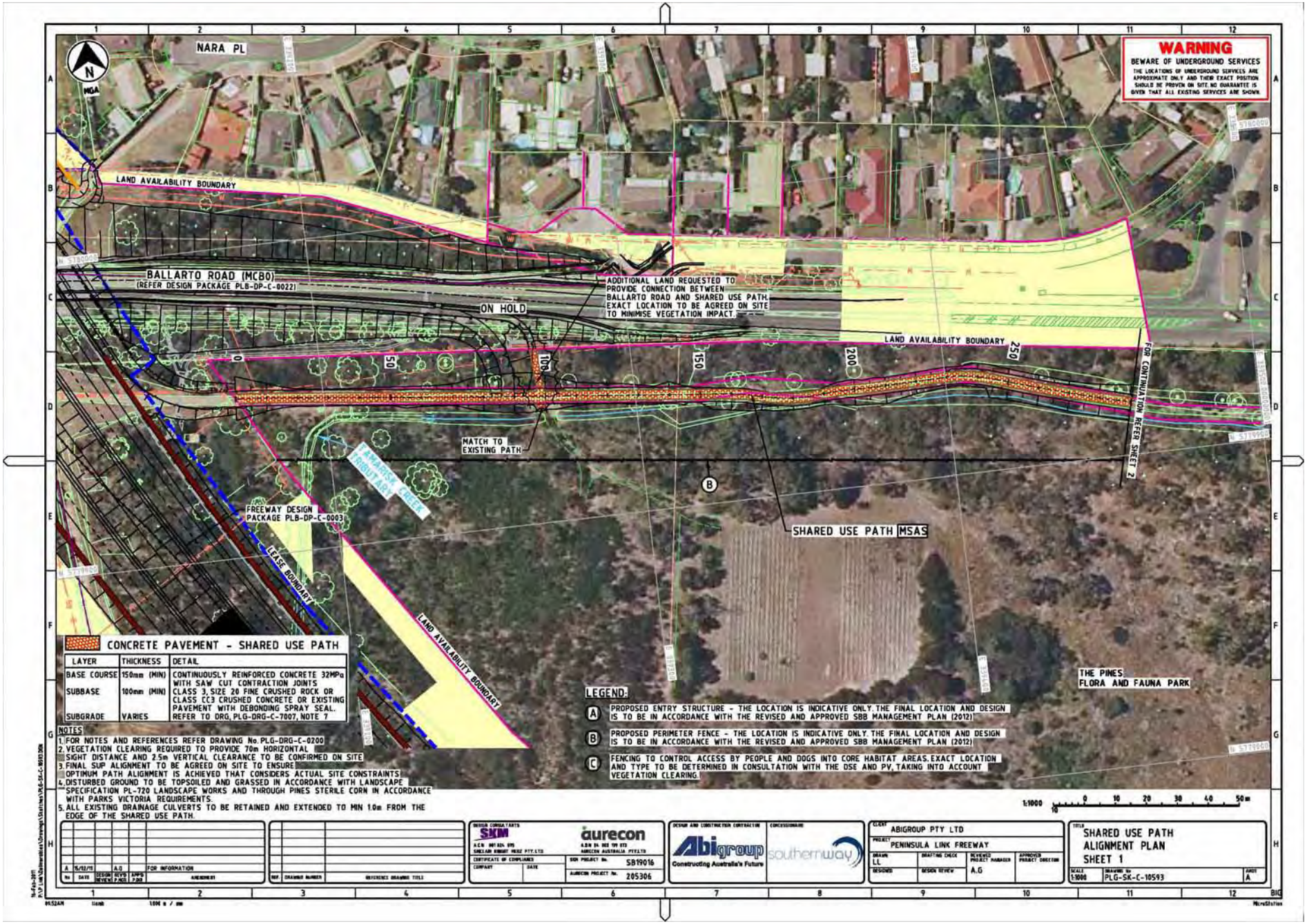


Figure 1b: SUP design through The Pines FFR

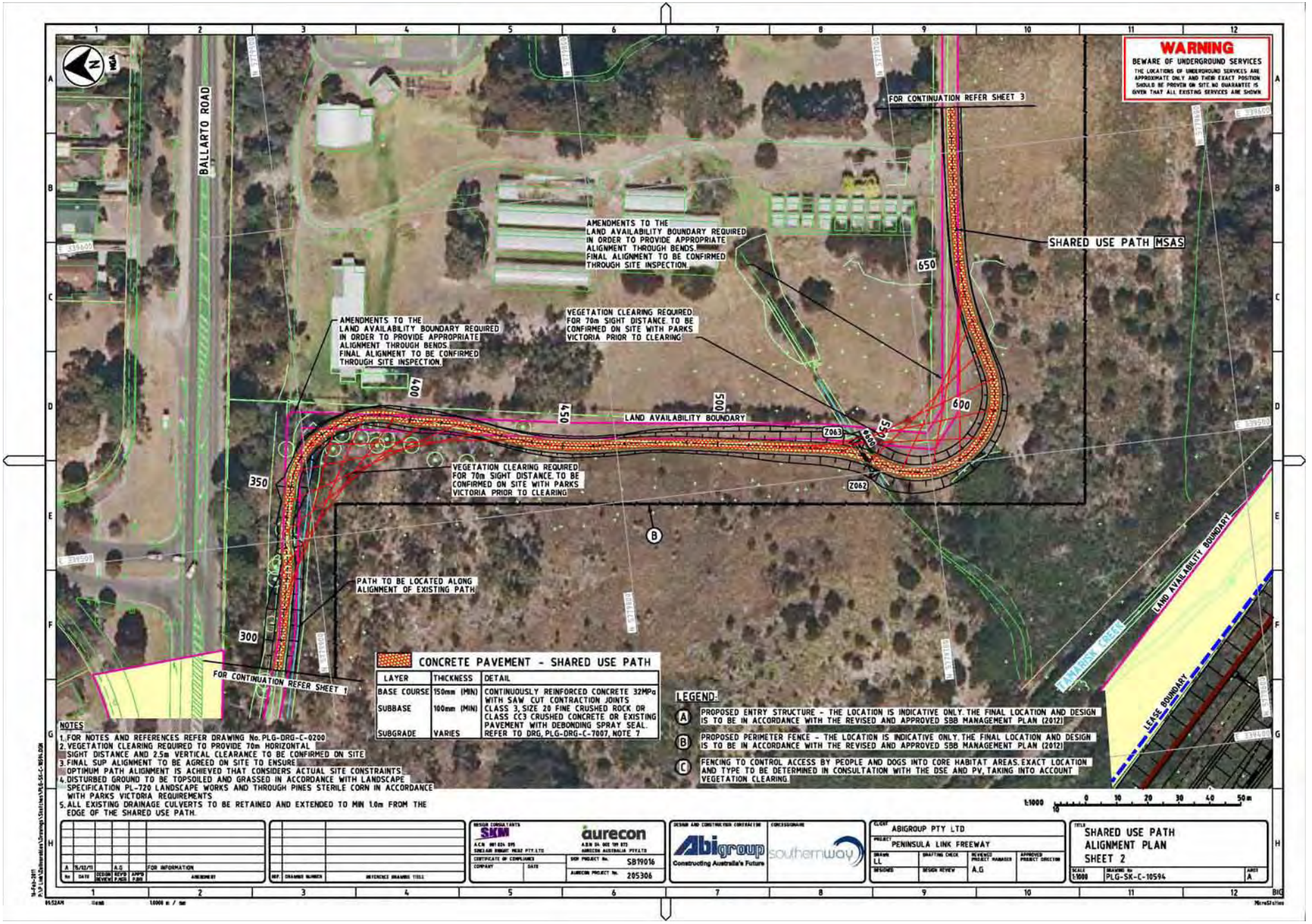


Figure 1c: SUP design through The Pines FFR

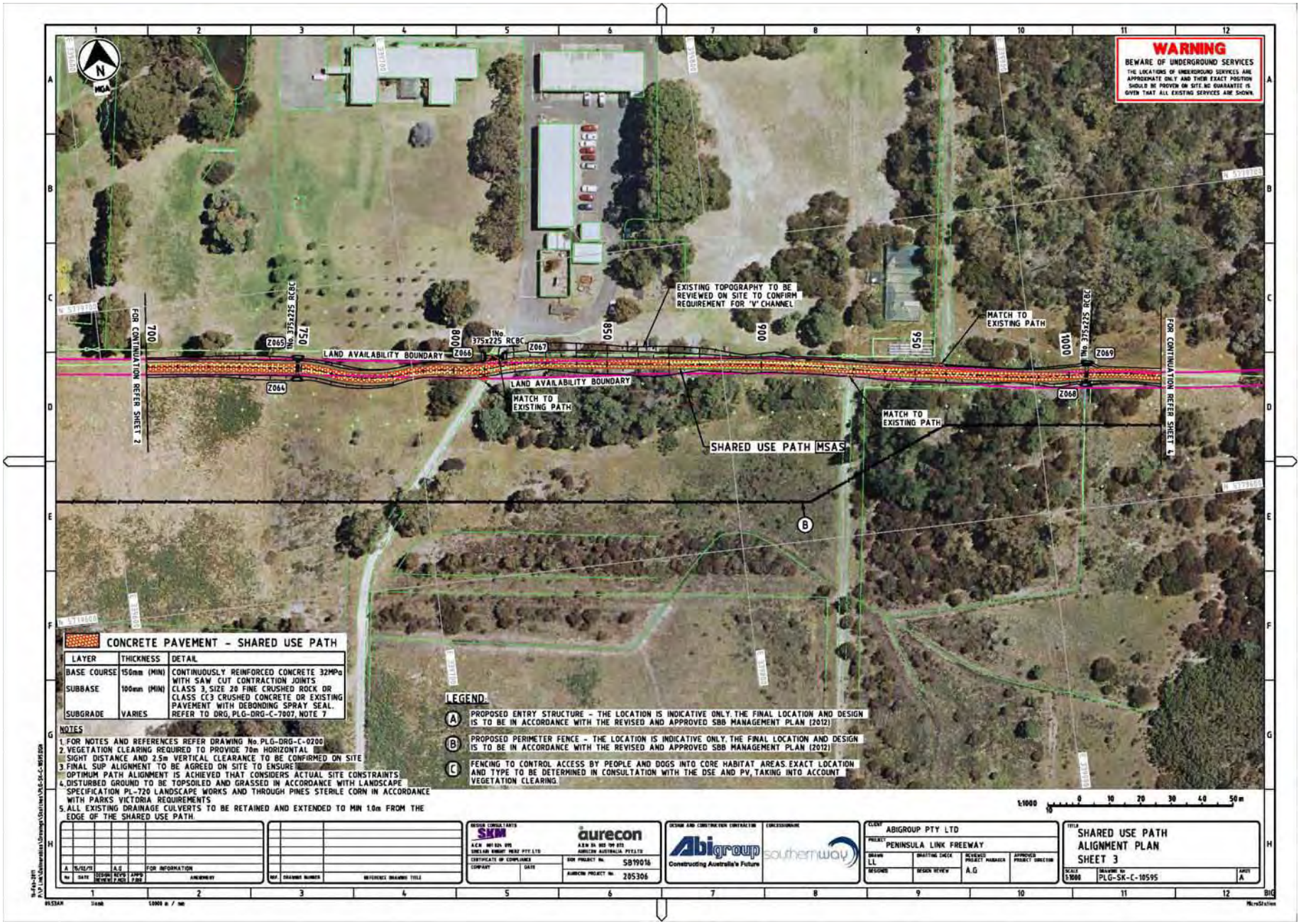


Figure 1d: SUP design through The Pines FFR

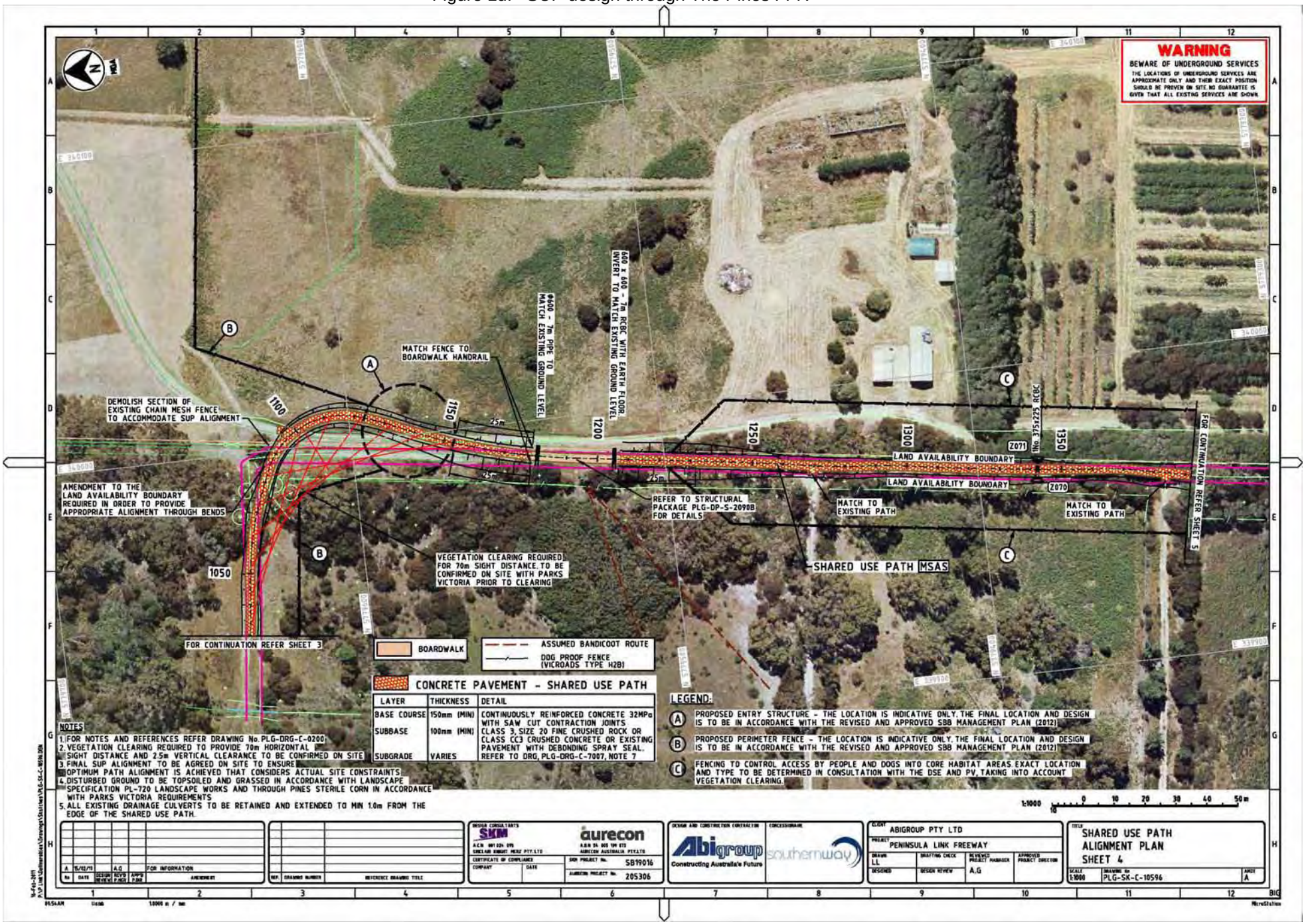


Figure 1e: SUP design through The Pines FFR

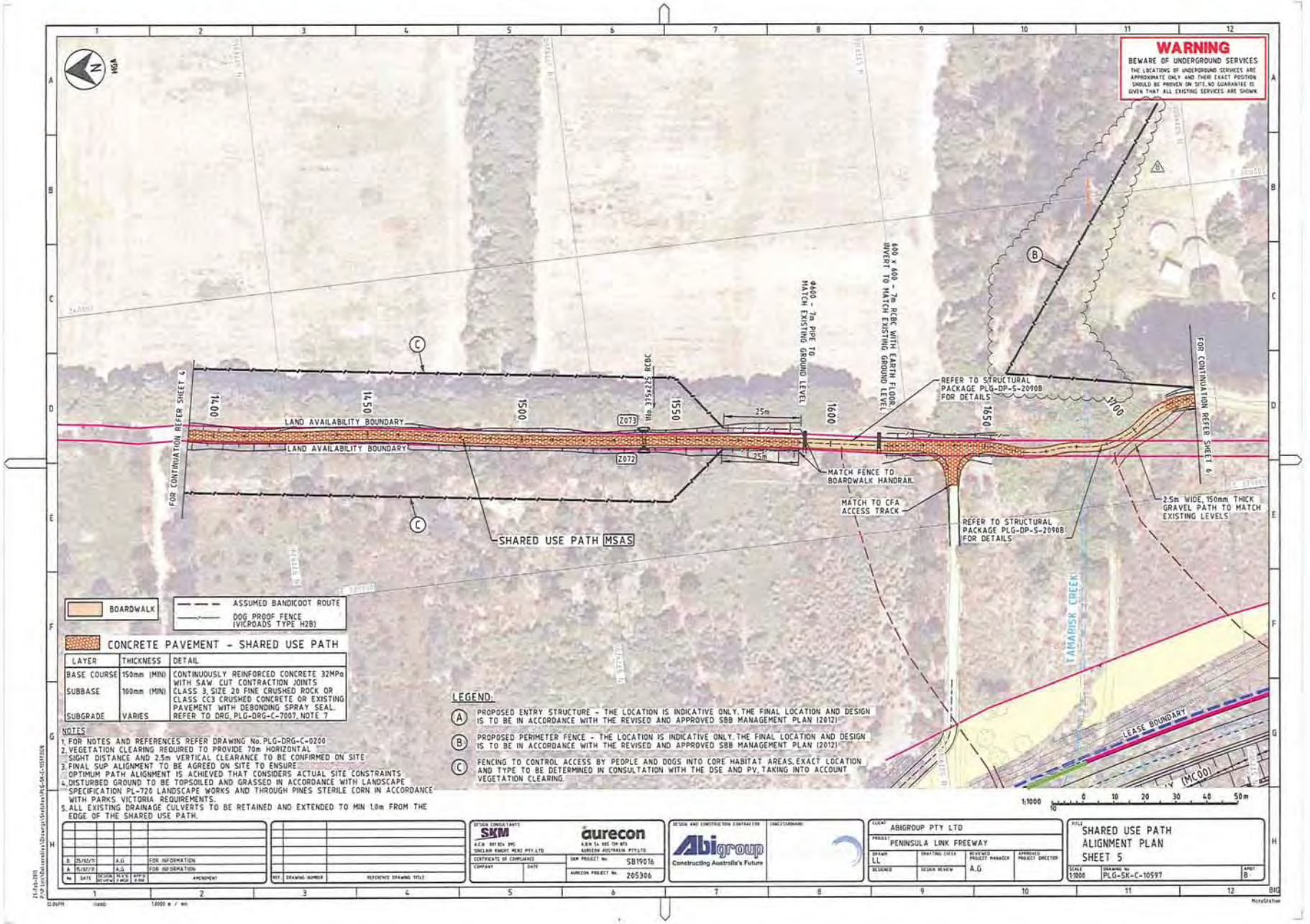


Figure 1f: SUP design through The Pines FFR

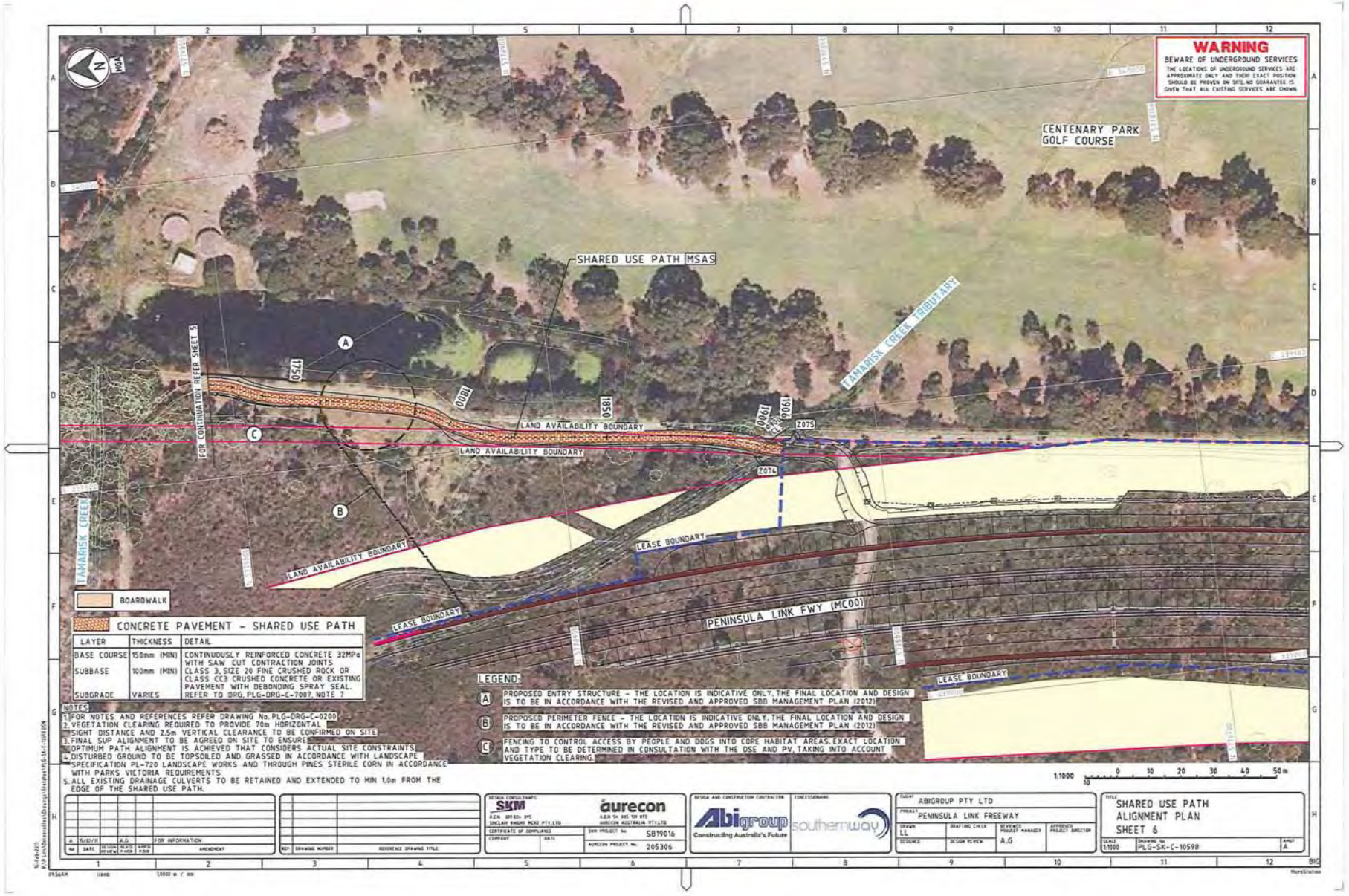


Figure 2: VicRoads H2B Fencing

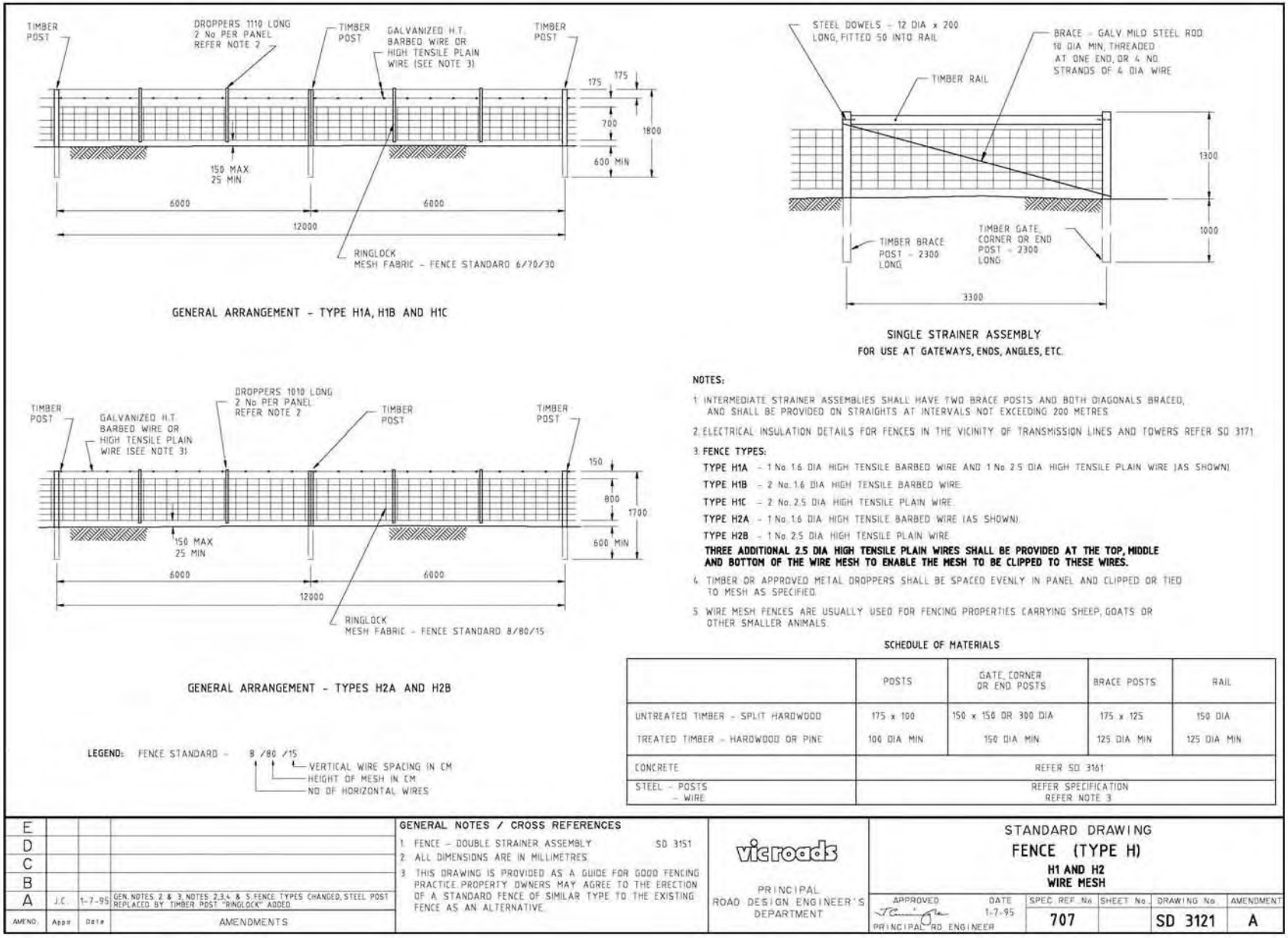


Figure 3: Example of Boardwalk

Attachment 2:

Supplementary Information to SUP Referral

(submitted to DSEWPaC on 30 August 2010)

LINKING MELBOURNE AUTHORITY

Our reference: A191347

Your reference:

30 August 2010

Mr Chris Murphy
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

Dear Chris

Supplementary information to referral for Shared Use Path, Pines Flora and Fauna Reserve – EPBC Referral 2009/5100.

Linking Melbourne Authority submitted a referral under the Environment Protection and Biodiversity Conservation Act (1999) for a Shared Use Path (SUP) through the Pines Flora and Fauna Reserve (EPBC Ref. 2009/5100). The location of the SUP is identified in Figure 1.

This referral was submitted in September 2009. The Department of the Environment, Water, Heritage and the Arts (DEWHA) sent a request for additional information regarding the referral in October 2009. Specifically, DEWHA required further information as follows:

1) *Final design, location and number of fauna crossings*
2) *Details of how access to the Pines Flora and Fauna Reserve will be managed to ensure the outcomes of Condition 2C of Peninsula Link Project Approval (2007/3480) will not be compromised*
3) *Measures that will ensure domestic pets will not enter Southern Brown Bandicoot habitat.*

The information contained in this letter provides further information and outlines how the above conditions will be met.

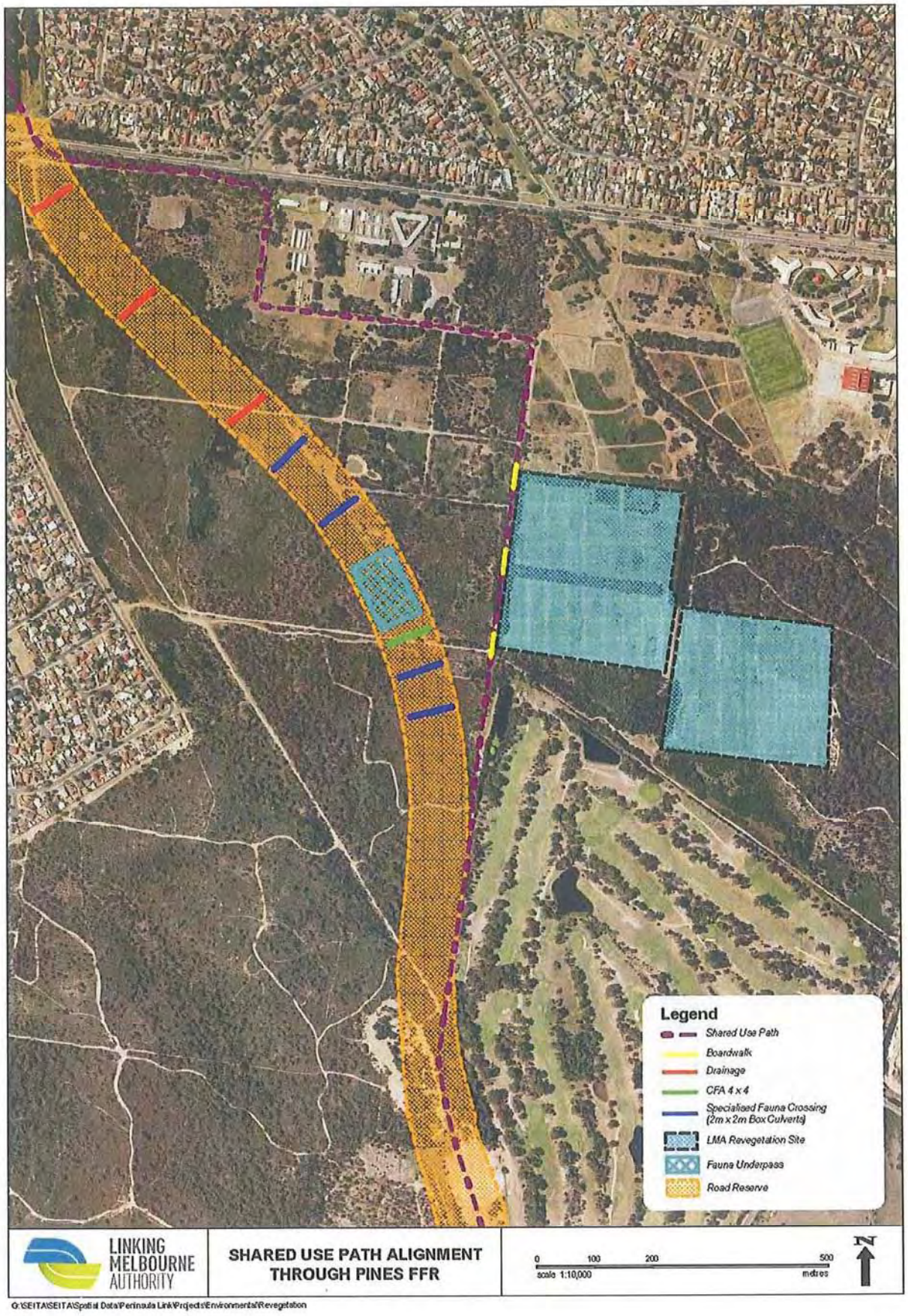
LMA would also like to advise that the referral for the Pines Flora and Fauna Reserve SUP is a separate referral in its own right and, whilst related to the approved Peninsula Link project, should be judged on its own merits.

Please contact Jenny Carbery on 8562 6872 if you require further information and quote the above Linking Melbourne Authority reference on related correspondence.

Yours sincerely

Ken Mathers
Chief Executive Officer

Figure 1: Shared Use Path through the Pines Flora and Fauna Reserve



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1: Design, Location and Number of Fauna Crossings

The concept design and location of the major fauna underpass and other fauna crossings under the Peninsula Link roadway was provided to DEWHA as part of the Southern Brown Bandicoot Management Plan.

As part of the proposal to modify the location of the shared use path through the Pines Flora and Fauna Reserve a concept design was prepared by by Dr. Rodney van der Ree of the Australian Research Centre for Urban Ecology (ARCUE). The concept design considered the fauna crossings under the roadway together with a proposal to provide connectivity across the shared use path . A concept drawing, *Southern Brown Bandicoot Walking and Cycling Path Crossing,* was included as part of the initial Referral showing the indicative location and number of elevated stuctures (fauna crossings/underpasses) (see attachment 1). The concept provided for three fauna underpasses, habitat revegetation and predator (specifically for foxes) proof fencing to exclude people and dogs from key bandicoot habitat.

The concept, as described in these documents, will be adopted by SouthernWay and incorporated into the final design of the SUP. SouthernWay will consult with LMA, Parks Victoria and the Department of Sustainability and Environment (DSE), to develop the final design for the SUP. Once these design plans are available they will be forwarded to DEWHA.

A concept design has been prepared for the SUP, however a detailed design will not be undertaken until after the conditions of the EPBC Approval are know and can be incorporated into the detailed design.. To assist with obtaining EPBC approval, LMA commits to ensuring that the final design will conform with the concept design outlined by ARCUE (see attachment 1). LMA will also ensure that the following design elements are incorporated:

- The SUP predator proof fencing integrates with the Pines Flora and Fauna Reserve perimeter predator proof fence.
- The elevated structures/ underpasses will be strategically located to ensure that fauna access to the revegetation sites (see figure 1) is maximised and integrated with the fauna underpasses and crossings under the Peninsula Link freeway.
- Revegetation and landscaping works associated with the SUP construction utilise flora taxa that are appropriate to the site's Ecological Vegetation Classes and which offer harbour and habitat for the region's significant fauna (specifically Southern Brown Bandicoot).

2: Management of Pines Flora and Fauna Reserve to incorporate condition 2C

Condition 2C of Peninsula Link Approval (2007/3480) includes the following predator control measures:

- installation and maintenance of a predator control and monitoring program in the Pines Flora and Fauna Reserve
- installation and maintenance of a predator proof fence around the boundary of the Pines Flora and Fauna Reserve
- identification of impact thresholds that will trigger management intervention.

Predator control and monitoring

The LMA approved *Southern Brown Bandicoot Management* Plan provides details on the predator control and monitoring program currently being implemented within the Pines Flora and Fauna Reserve (see Section 4.10 and 5.6) of the Southern Brown Bandicoot Management Plan for details). The program includes both fox and feral cat control measures. Fox control includes trapping and den fumigation which has resulted in a total of 12 foxes trapped and three dens fumigated to date. Traps have also been set to target cats, which has resulted in the trapping of three cats to date.

LMA will continue to implement the monitoring program and predator control program in accordance with the approved management plan. This includes monitoring for bandicoots during construction and post construction as well as predator control.

Monitoring of foxes has been undertaken using a range of methods including sandpads, remote camera footage and active searching (fox scats, dens etc). This data has been collated and an estimate of fox abundance has been developed. However, further work is required to refine the methodology to improve the quality of data and accuracy of the fox abundance estimate. LMA will be undertaking further fox abundance assessments during Spring 2010, to build on the current dataset.

Predator proof fence
The approved *Southern Brown Bandicoot Management Plan* provides a commitment to install a predator proof boundary fence around the outside of the Reserve. The final alignment and design of the perimeter fence will be developed by LMA. Linking Melbourne Authority has committed to providing DEWHA with a copy of the final design report in December 2012 for approval by the Federal Environment Minister, with the fence to be installed following construction of Peninsula Link in 2013.

Management intervention
The approved *Southern Brown Bandicoot Management Plan* provides a process that will used to identify impact thresholds to trigger management intervention (see section 6.4.3 of SBB Management Plan). This includes undertaking a Population Viability Analysis (PVA), which will be progressed to develop management recommendations to guide SBB management strategies at The Pines FFR. A fox abundance estimate will also be derived. LMA will further refine the methodology to obtain accurate fox abundance estimates and, once satisfied with the quality of data, can then set rigorous fox reduction targets.

The report detailing the results of the pre-construction research and monitoring has been submitted to DEWHA, which incorporates a summary of both SBB and fox distribution and abundance.

The monitoring work, fox abundance estimates, predator control results, PVA outcomes and the strategic assessment of a number of documents will assist in setting the long term management measures including triggers for intervention for SBB in the Pines Flora and Fauna Reserve. The SBB Management Plan will be updated in December 2012 to further detail the above matters.

3: Measures to ensure domestic pets will not enter SBB habitat

Current status and future planning:
There has been dog walking in the Pines FFR since its establishment in the late 1980s. Under Local laws, dogs are permitted provided they are kept on a leash and kept under control. Parks Victoria works in partnership with the City of Frankston to enforce the current controls. Gates on existing boundaries are designed to prevent dogs that may be wandering at large from entering the reserve.

Parks Victoria will review current dog walking status during the preparation of a management plan for the Reserve. There are opportunities to significantly reduce or prevent dog walking on leash through core SBB habitat areas and focus dog walking around perimeter areas primarily on fire breaks and integrate this planning with the design of the predator proof fence (as identified in the Southern Brown Bandicoot Management Plan). Community consultation will be undertaken on this significant issue by Parks Victoria.

Once the Pines Flora and Fauna Reserve Management Plan is finalised, set asides can be established to only permit dogs in specific areas under the provision of the Nature Conservation Reserves Regulations.

Fence along SUP near bandicoot habitat areas:
Fencing both sides of the SUP near areas of SBB core habitat to prevent dogs from entering such areas will be considered when developing the detailed design for the perimeter predator proof fence and once Parks Victoria has prepared their Pines FFR Management Plan, including rationalisation of dog access areas. The detailed design for any SUP fencing will be developed in conjunction with design for the perimeter predator proof fence as per the SBB Management Plan. The potential location for fencing is shown in Attachment 2.

Also as part of the perimeter and SUP fencing design, consideration will be given to the implication of fencing on larger fauna species such as wallabies. The design of the fencing will be undertaken in consultation with fauna specialists, Parks Victoria and DSE.

4: SUP Connection to Ballarto Road

Ballarto Road will cross over Peninsula Link via a bridge structure. In order for local residents to access the Peninsula Link SUP, a connection is required from Ballarto Road.

Attached for your information is a plan (PLB-DRG-C-1224) showing the design of the local connection from the Ballarto road bridge structure to the Pines SUP.

Attachment 1:

Southern Brown Bandicoot Walking and Cycling Path Crossing within the Pines Reserve

An alternative concept design for bandicoot crossing structures on the shared user path

Dr Rodney van der Ree
Deputy Director,
Australian Research Centre for Urban Ecology
rvdr@unimelb.edu.au, 83443661 / 0412 562 429
2nd September 2009

Royal Botanic Gardens Melbourne

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C/o School of Botany
University of Melbourne
Australia 3010
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The shared user path may act as a barrier that prevents or limits the movement of southern brown bandicoots from one side to the other. The current concept design proposed to mitigate the barrier effect of the shared user path is a single raised boardwalk approximately 100 m in length. With respect to bandicoots, there are three issues of concern with current concept. Firstly, it is not known if bandicoots will move under a boardwalk that has heavy pedestrian traffic. Second, a single stretch of boardwalk offers a single crossing location, and if the bandicoots are not using the vegetation near the single boardwalk, then it may have little use. Third, the crossing structures across the shared user path should approximately align with the multiple crossing structures proposed for Peninsula Link. This will facilitate more efficient crossings of both the shared user path and Peninsula Link. An alternative option is described below.

Alternative Concept

The elevated boardwalk is to be divided in to 3 sections each approximately 30- 40 m in length. At each end of the three sections, a culvert is positioned where the path is being raised to achieve the height required for the boardwalk. This combination of boardwalk and culverts is termed a crossing zone. The culverts would include a round concrete pipe at one end and a box culvert with a natural dirt floor at the other. The diameter of the round pipe culvert is 50 – 60 cm, and the box culvert would be of a similar dimension. The pipe and square culvert should extend 1.5 – 2 m (overall pipe/culvert length of ~ 6m) from the edge of the path to allow bandicoots to access the entrance without having to get too close to the path itself. To improve the aesthetic of the culverts, they should be covered with dirt and vegetation planted on and around them. The three crossing zones should be positioned approximately 100 – 150 m apart, generally aligning with the crossing structures proposed for Peninsula Link. See attached concept drawing. Note however that the suggested distance of 100 – 150 m between boardwalks is indicative only. The goal is to align the crossings across Peninsula Link and the crossings across the shared user path as closely as possibly.

The approach to the entrance of the crossing structures is also important. Dense heathy vegetation should be planted around each crossing zone to provide cover from predators (e.g. foxes) when accessing the culverts/raised boardwalk. The edge of the path and raised boardwalk should also be planted out with dense tall shrubs that act as a screen, further separating bandicoots using the crossing structures from people using the shared user path. The raised boardwalk and path between each section of raised boardwalk should be fenced to ensure dogs and people do not leave the path as well as funneling bandicoots towards the three crossing zones.

The benefits:

1) With crossing structures across the shared user path and Peninsula Link more closely aligned, crossing of both linear infrastructures by bandicoots should be easier
2) It is not known exactly which type of mitigation structure is preferred by bandicoots. With this design, there is the possibility of testing the rate of use and effectiveness of round culverts, square culverts with a natural dirt floor and elevated boardwalk
3) By having at least three crossing zones, there is an increase in the likelihood that bandicoots will use the crossing structures. Wildlife populations are naturally patchily distributed and move around across the landscape over time. Therefore, an inappropriately located culvert may receive minimal use, despite being of suitable design.

Royal Botanic Gardens Melbourne

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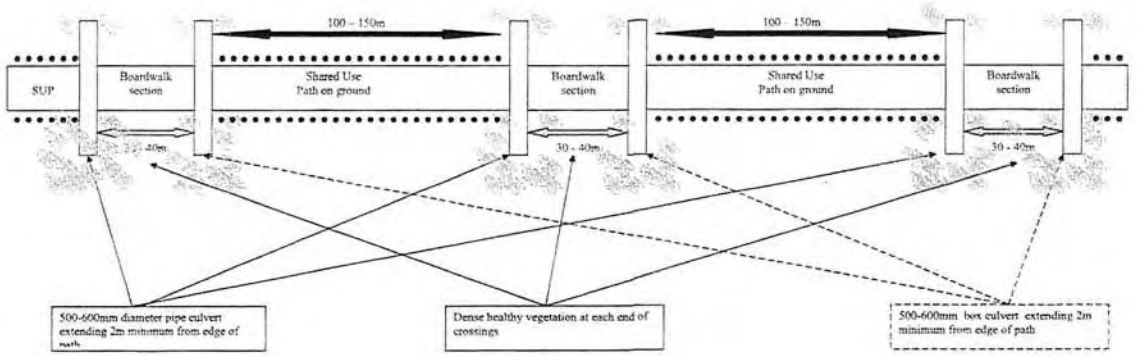
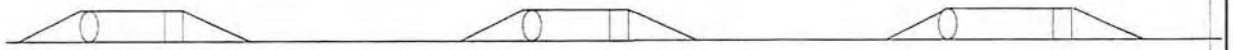


Fence (extent to compliment fauna underpass)

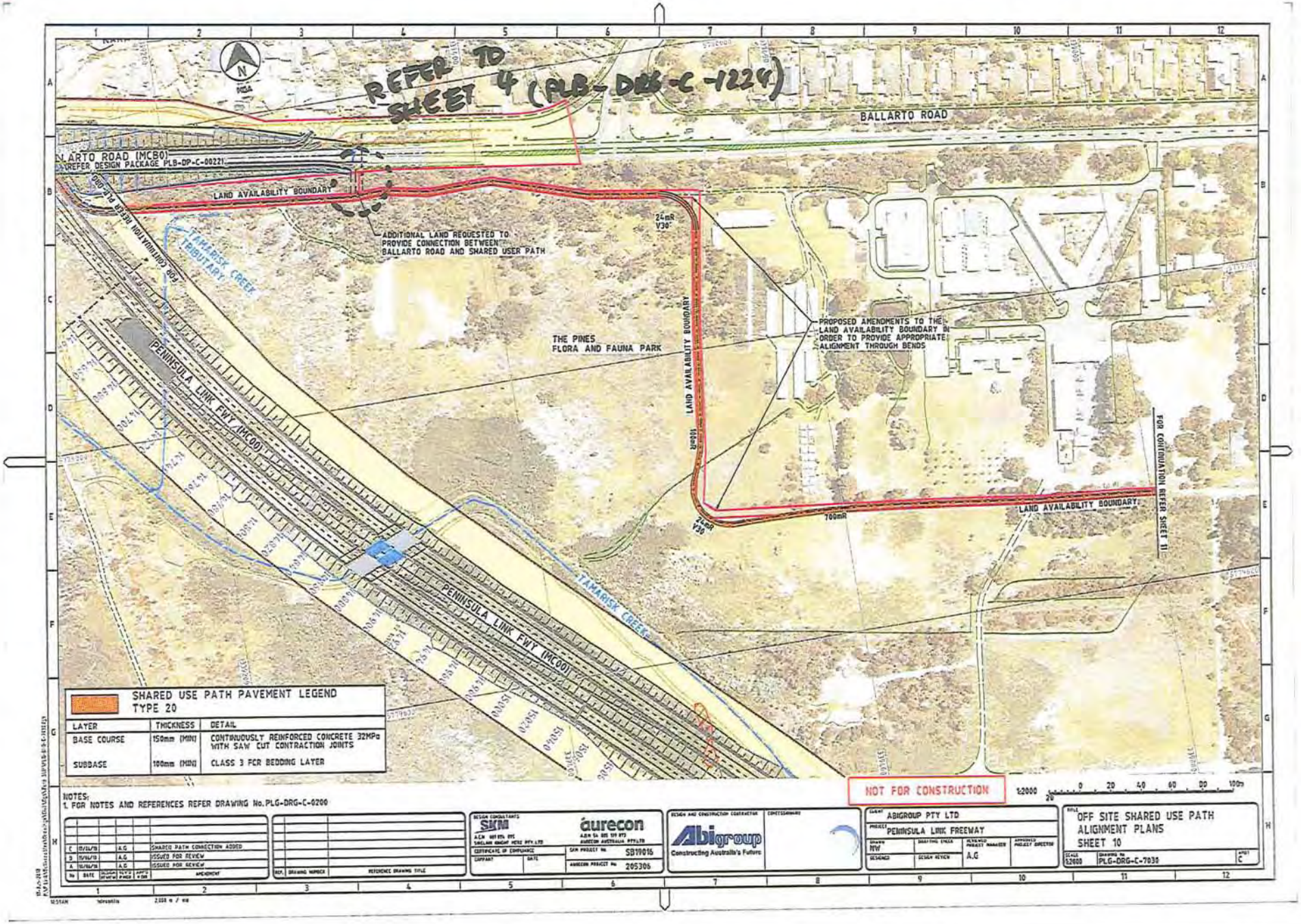
Boardwalk includes handrailing / balustrade

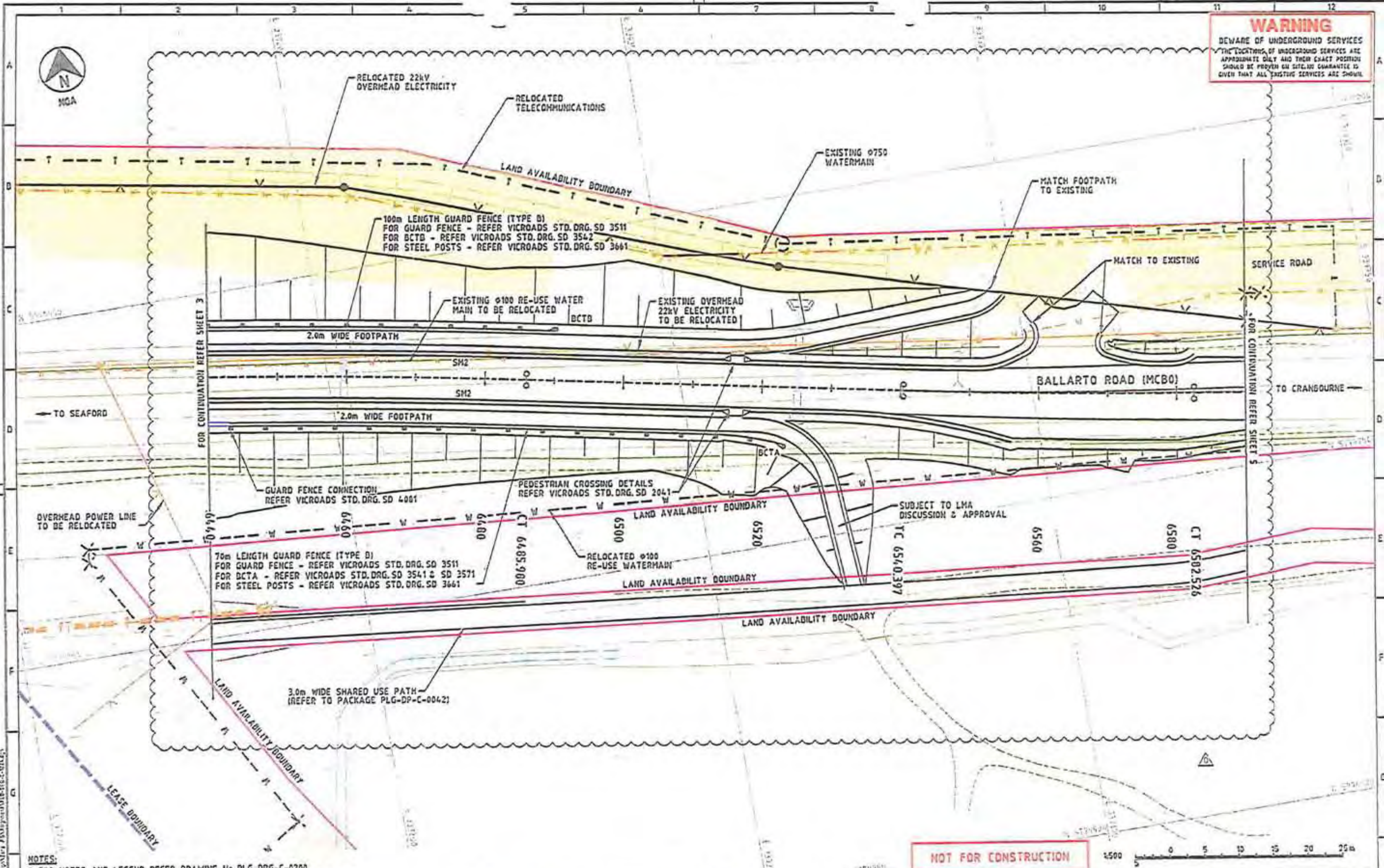


CONCEPT DRAWING - SOUTHERN BROWN BANDICOOT WALKING AND CYCLING PATH CROSSING WITHIN THE PINES RESERVE

Attachment 2:

Potential Location for fencing along SUP


REFER TO SHEET 4 (PLB-DBB-C-1224)
BALLARTO ROAD
LAND AVAILABILITY BOUNDARY
ADDITIONAL LAND REQUESTED TO PROVIDE CONNECTION BETWEEN BALLARTO ROAD AND SHARED USER PATH
TAMARISK CREEK TRIBUTARY
PENINSULA LINK FWY (MC00)
THE PINES FLORA AND FAUNA PARK
PROPOSED AMENDMENTS TO THE LAND AVAILABILITY BOUNDARY IN ORDER TO PROVIDE APPROPRIATE ALIGNMENT THROUGH BENDS
FOR CONTINUATION REFER SHEET 11
SHARED USE PATH PAVEMENT LEGEND
TYPE 20
LAYER | THICKNESS | DETAIL
BASE COURSE | 150mm (MIN) | CONTINUOUSLY REINFORCED CONCRETE 32MPa WITH SAW CUT CONTRACTION JOINTS
SUBBASE | 100mm (MIN) | CLASS 3 FCR BEDDING LAYER
NOTES:
1. FOR NOTES AND REFERENCES REFER DRAWING No. PLG-DRG-C-0200
NOT FOR CONSTRUCTION
1:2000
OFF SITE SHARED USE PATH ALIGNMENT PLANS SHEET 10
PLG-DRG-C-7030



NOTES:
1. FOR NOTES AND LEGEND REFER DRAWING No. PLG-DRG-C-0200
2. FOR DRAINAGE NOTES AND LEGEND REFER DRAWING No. PLG-DRG-D-0200

NOT FOR CONSTRUCTION

1:500 0 5 10 15 20 25m

No	DATE	DESIGN REVIEW	DRAWN CHECK	APP'D	AMENDMENT
D			A.G		ISSUED FOR REVIEW - GENERAL REVISION
C			A.G		ISSUED FOR REVIEW - GENERAL REVISION
B					ISSUED FOR REVIEW - GENERAL REVISION
A					ISSUED FOR REVIEW

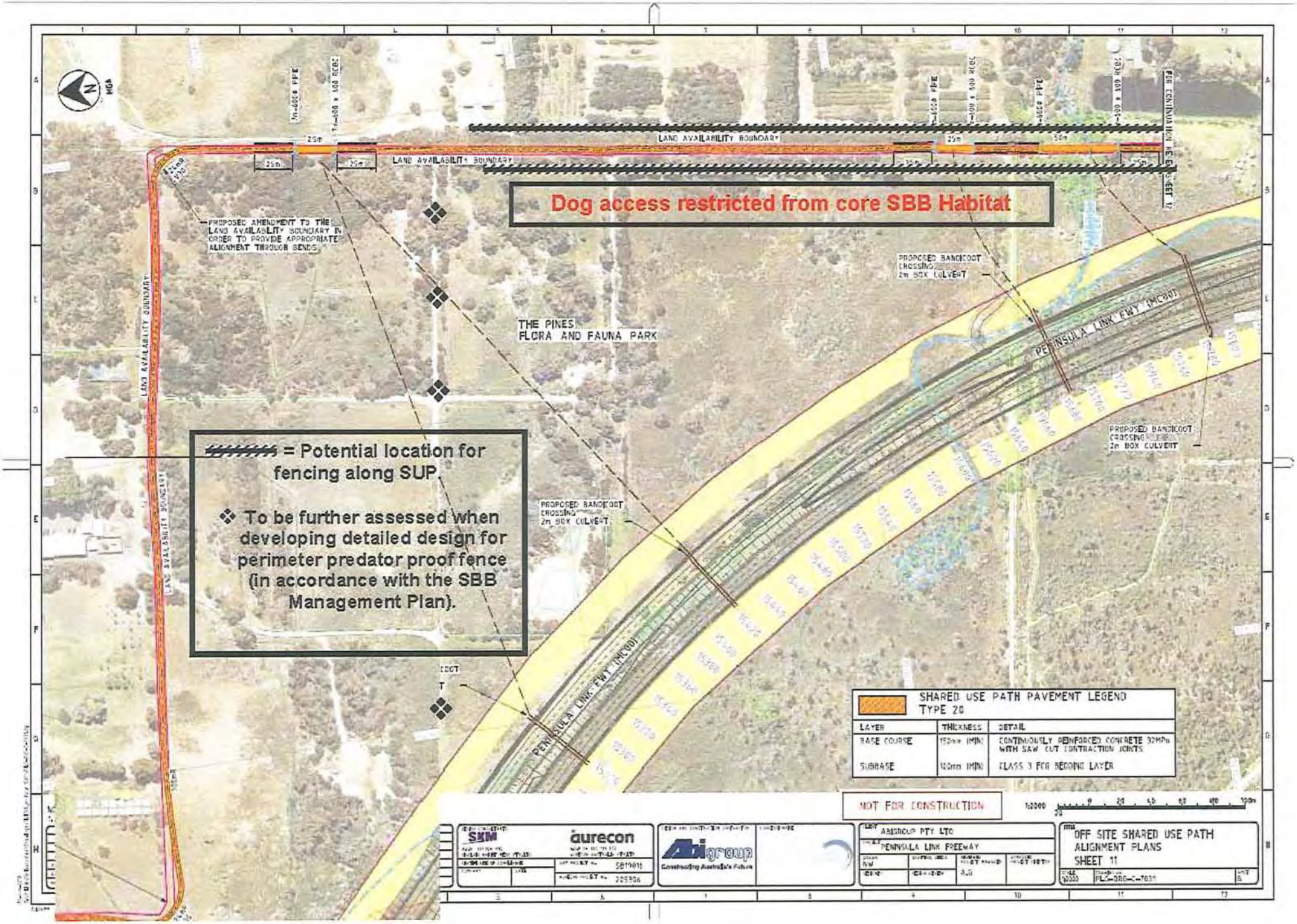
REF. DRAWING NUMBER	REFERENCE DRAWING TITLE

DESIGN CONSULTANTS: SKM / aurecon
SKM PROJECT No. SB19016
AURECON PROJECT No. 205306

DESIGN AND CONSTRUCTION CONTRACTOR: Abigroup — Constructing Australia's Future
CONCESSIONAIRE: southernway

CLIENT: ABIGROUP PTY LTD
PROJECT: PENINSULA LINK FREEWAY
DRAWN: LL
REVIEWED PROJECT MANAGER: A.G

TITLE: BALLARTO ROAD (ZONE B) ALIGNMENT PLAN SHEET 4
SCALE: 1:500
DRAWING No. PLG-DRG-C-1224
AMDT: D
A3


Dog access restricted from core SBB Habitat
LAND AVAILABILITY BOUNDARY
PROPOSED AMENDMENT TO THE LAND AVAILABILITY BOUNDARY IN ORDER TO PROVIDE APPROPRIATE ALIGNMENT THROUGH BENDS
THE PINES FLORA AND FAUNA PARK
PROPOSED BANDICOOT CROSSING 2m BOX CULVERT
PENINSULA LINK FWY (MC001)
= Potential location for fencing along SUP.
To be further assessed when developing detailed design for perimeter predator proof fence (in accordance with the SBB Management Plan).
SHARED USE PATH PAVEMENT LEGEND
TYPE 2C
LAYER
THICKNESS
DETAIL
BASE COURSE
150mm (MIN)
CONTINUOUSLY REINFORCED CONCRETE 32MPa WITH SAW CUT CONTRACTION JOINTS
SUBBASE
100mm (MIN)
CLASS 3 FCR BEDDING LAYER
NOT FOR CONSTRUCTION
aurecon
ABIGROUP PTY LTD
PENINSULA LINK FREEWAY
OFF SITE SHARED USE PATH ALIGNMENT PLANS SHEET 11