Meadow Creek Solar Farm
Landscape Strategy

June 2024

Final

Prepared by Horizon Studio

For Meadow Creek Solar Farm Pty Ltd

Prepared for Meadow Creek Solar Farm Pty Ltd.

Revision	Status	Date
1	Draft for comment	31.05.2024
2	Final for planning approval	04.06.2024

Acknowledgment

Horizon Studio acknowledges the Traditional Owners of the land and waters considered in this report, their connection to Country and their on going contribution to the improving the environment and the health and well-being of all people.

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1. Introduction

Horizon Studio Landscape Architecture, (Horizon Studio), has been engaged by Meadow Creek Solar Farm Pty Ltd to prepare a Landscape strategy for the proposed Meadow Creek Solar Farm and associated transmission lines and infrastructure. The Landscape Strategy is required for the Planning Permit application, for the development of a solar energy facility. The proposed solar farm will be located at 1033 Oxley - Meadow Creek Road, Meadow Creek, will have a peak capacity of 332 Megawatts, (MW), and will cover an area of approximately 566 Hectares. The transmission infrastructure includes towers dispersed over approximately two kilometres and a substation to be located at the connection with the existing transmission lines running parallel with the Whorouly - Bobinawarrah road.

2. Landscape Strategy Intent

The purpose of this landscape strategy is to provide guidance for integrating the proposed solar farm infrastructure into the landscape with consideration of environmental, cultural and visual values, through on site planting.

The key objectives of this landscape strategy are to:

- Mitigate the visual impact from the solar farm and transmission infrastructure.
- Recommend a landscape treatment that acknowledges the existing local character and visual quality.
- Recommend a landscape treatment that acknowledges the local ecology and climatic conditions.
- Provide guidance for the proper implementation and maintenance of the landscape treatment to ensure success.

3. Site context

Meadow Creek is located in the Upper King Valley, north east Victoria, and is approximately 27 kilometers south east of Wangaratta, the closest regional centre. Agriculture is the primary activity in the region with tourism also being a significant contributor to the regional economy. Nearby settlements include Moyhu, Oxley and Whitfield with clusters of dwellings scattered throughout the surrounding rural landscape. The King valley is also home to a number of renowned wineries and food producers and the natural environment supports a range of activities including bush walking, cycling, horse riding, paddling and other activities. Notable features in the Meadow Creek area include the King River and the Carboor State forest with Moyhu being the closest settlement. The location of the proposed solar farm, transmission lines and substation are shown in Figure 1. Local context.

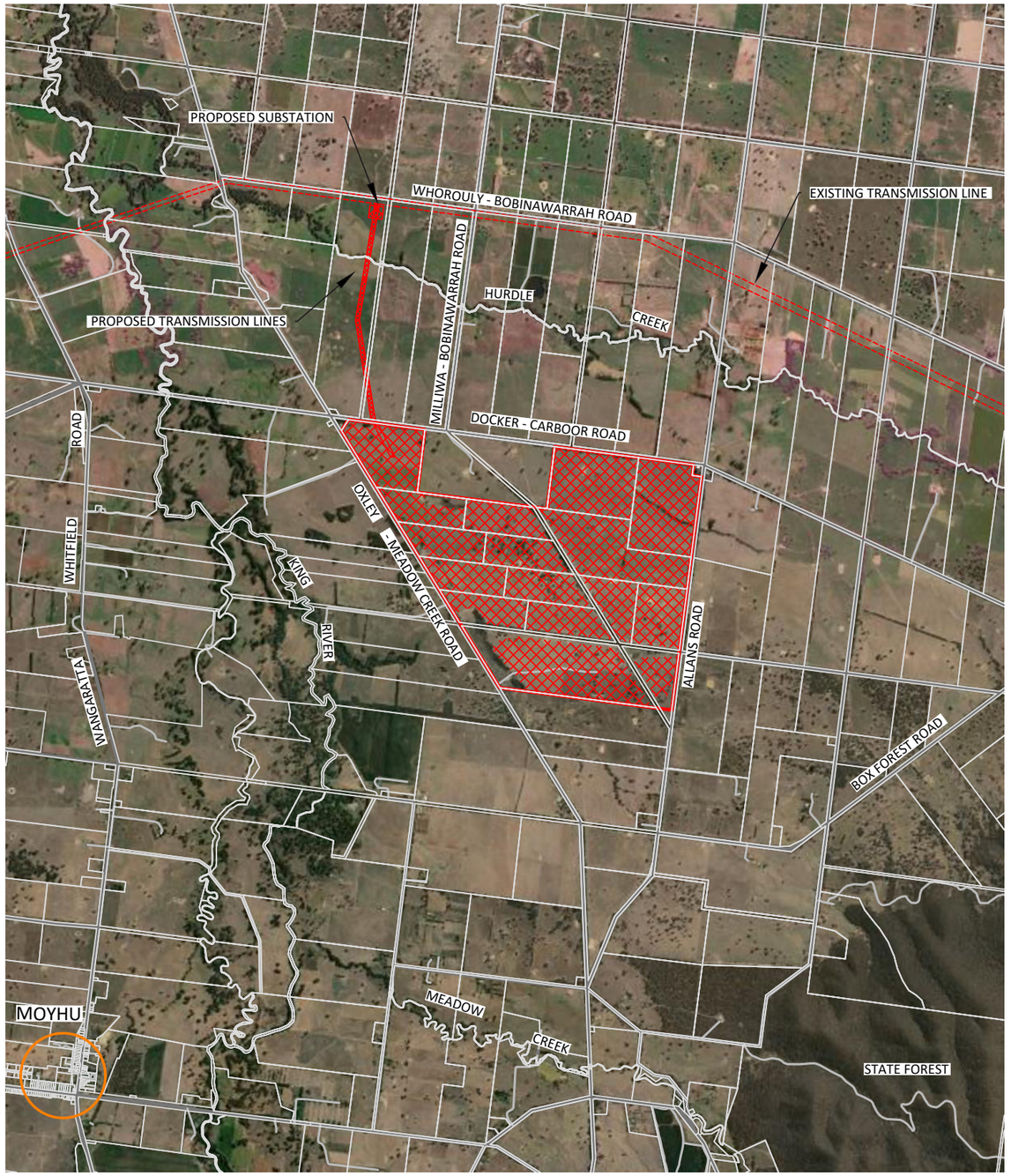


Figure 1. Local context

4. Existing site conditions

The site is comprised of a number of properties that have historically been used for cattle grazing and livestock feed pasture. While the majority of the land has been cleared for agriculture there are scattered trees across much of the site and two significant corridors of native trees that bisect much of the site. The scattered trees and those that make the tree corridors are primarily Red Gum, (Eucalyptus *camaldulensis*), or Yellow Box, (Eucalyptus *melliodora*), both of which are typical of the dominant Ecological Vegetation Class, (EVC 55) of the site area. The majority of the scattered trees are to be retained as are all of the significant tree corridors with the PV arrays arranged to avoid these.

There are a two minor waterways that cross parts of the PV array site, notably Sheep Station creek in the south-west corner, which has been protected from cattle grazing and partially revegetated with Blue Gum in recent times. The other unnamed waterway, in the north-west corner of the site has been impacted by grazing over the years however it feeds into a dam that supports a significant stand of mixed gum species, Red Gum and Yellow Box. Both of these waterways and the associated native vegetation has been avoided in the arrangement of the PV modules.

Similarly the site for the transmission lines and substation is primarily pasture with a lesser number of scattered trees than the PV array site. Hurdle Creek which is lined with Red Gum and Yellow Box bisects the transmission line corridor south of the proposed substation on the Whorouly Bobinawarrah Road. The substation site is completely pasture grass.

The roads in the local area have wide verges up to 10 metres which are lined with native trees along some sections, typically Red Gum, Yellow Box and Peppermint.

The Docker Carboor road immediately north of the PV array site has scattered stands of native trees along both verges as well as stretches of significant openings up to 400 metres long. Similarly the Oxley Meadow Creek road immediately west of the PV array site also has scattered stands of native trees along both verges and significant open stretches of grass. Allans Road which runs along the eastern boundary of the PV array site is heavily treed along both verges with openings only at property access points.

5. Landscape design rationale

The key objective of the landscape treatment is to mitigate impacts on landscape character and views associated with the proposed solar farm and transmission infrastructure. The relatively flat terrain combined with the scattered trees assist to limit potential impacts to the immediate surrounds. For the PV array the potential for impacts is limited to the immediately adjacent roadways and neighbouring properties. The extents for potential impacts from the substation and transmission infrastructure is limited to the immediately adjacent Whorouly Bobinawarrah road and nearby residences.

Taking into consideration the findings of the Landscape Visual Impact Assessment, Flora and Fauna report and Bushfires mitigation measures the following landscape treatment has been determined:

PV array site

- Implement a 5 metre wide vegetative screen around the perimeter of the PV array site with a 10 metre wide firebreak before the PV array.
- Screen vegetation to be primarily a mix of medium to large shrubs with a small percentage of medium to large trees reflecting the existing landscape character including scattered trees and wide open sky views.
- The screening vegetation to be positioned in front, (outward facing), of the proposed 2.2 metre tall wire mesh security fence.
- No screening in front, (outward facing), of Sheep Station Creek area or the stand of trees on the banks of the dam at the end of the unnamed waterway in the north-west corner.
- Implement a temporary screen structure along a section of the Docker - Carboor road to mitigate the potential impacts from glint and glare until the vegetation reaches an effective screening height, estimated to be 3 to 5 years from planting.

Substation site

- Implement a 5 metre wide vegetative screen along the eastern property boundary using a mix of medium to large shrubs with a small percentage of medium to large trees reflecting the existing landscape character including scattered trees and wide open sky views.
- Implement a vegetative screen along the north property boundary and within the transmission line easement using only small to medium shrubs with a maximum height of 3 metres.
- Implement a partial vegetative screen along the west boundary using stands of scattered trees to reflect the existing landscape character and views.

6. Plant selection

Plant species have been selected from the dominant Ecological Vegetation Class, EVC 55 - Plains Grassy Woodland, EVC47 Valley Grassy Forest, and EVC 68 Creekline Grassy Woodland, taking into account the site conditions and suitability for planting and establishment. Additional native shrub species suited to soil type and local climatic conditions have also been selected to provide a healthy mix of plants and to ensure an effective screen is achieved.

Refer to Sheet 6 for plant species and descriptions.

7. Planting size

It is recommended to use tubestock, (typically 50x50mm wide x 100mm deep) the advantage being the young plants will be able to adapt to the local conditions more quickly than larger more advanced plant stock. Additionally tubestock is easier to plant than potted stock, particularly where required in large numbers, and can be prepared by local suppliers.

8. Site preparation

- Prior to the commencement of any works the site must be cleared of any debris, stockpiles and any detritus including dead vegetation, e.g., logs or branches.
- Areas to be planted shall be eradicated of weeds and any existing vegetative growth (excluding native vegetation to be retained), shall be slashed to a height of 150 mm.
- Trash build-up and cut material shall be removed from the area prior to spraying with an approved knockdown herbicide incorporating a herbicide marker. Bi-active herbicide shall be used around wetlands and waterways. The herbicide shall be used according to the manufacturer's recommended rates and any off-target damage shall be rectified by the Contractor.
- All areas for planting must be clearly delineated so that no vehicles can unintentionally enter.

9. Planting

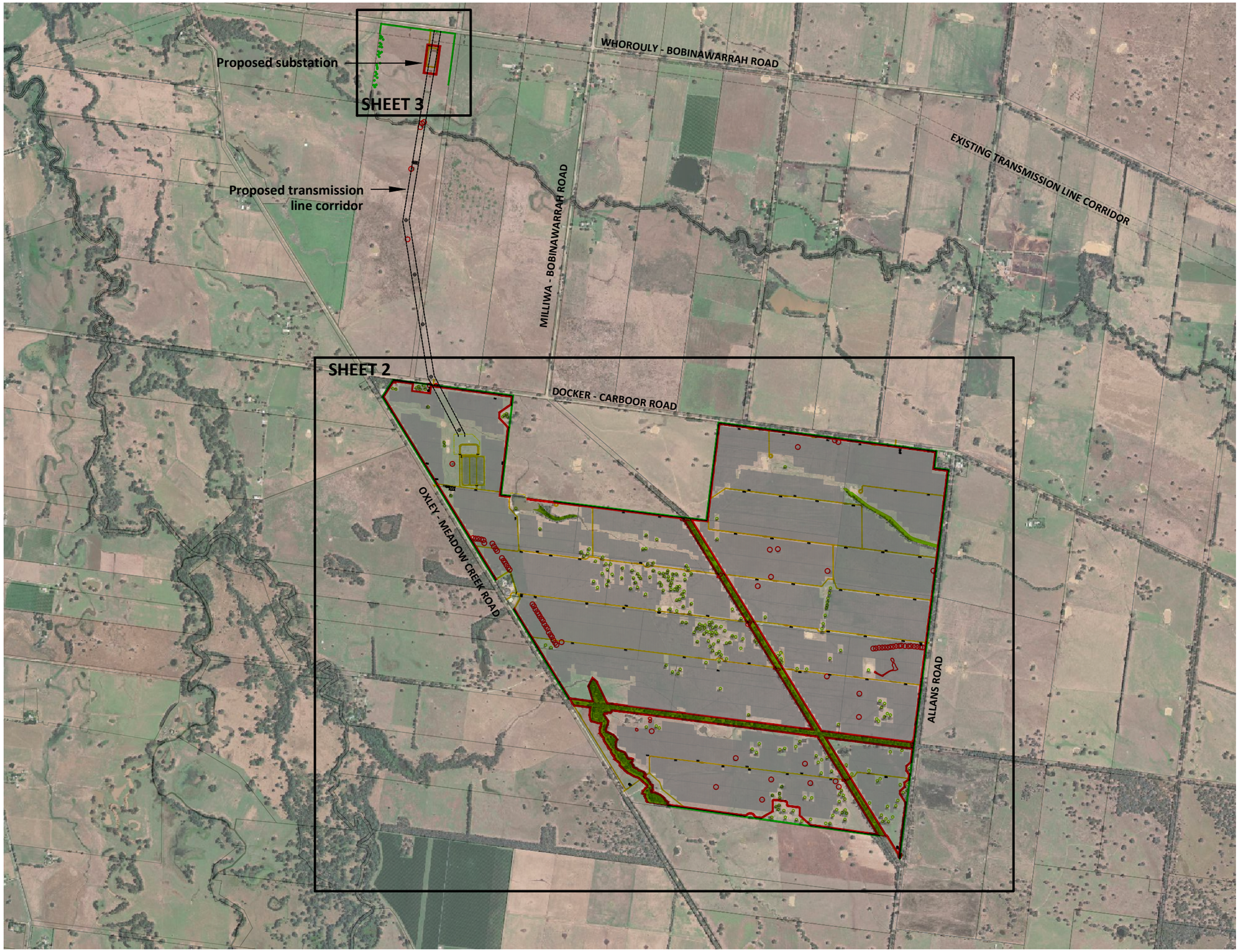
- All plants are to be in good health, not bound in their containers and with adequate moisture in the planting medium. If stored the plants must be sufficiently watered to prevent drying out. Roots must be moist and contained in a moist medium at the time of planting.
- All plantings to be arranged in clusters in accordance with the Typical planting arrangement, Sheet 5.
- Planting must be in accordance with the Typical Planting detail, Sheet 5
- Each plant is to be watered thoroughly after planting, ensuring that the moisture has penetrated to the full depth of the roots.
- Each plant must be planted with a slow release fertilizer.
- Each plant must be mulched with an approved organic mulch, which must be placed in accordance with the Typical Planting detail.

10. Plant protection

Each plant must be protected from vermin and or unfavorable weather using a plant guard as per the Typical planting detail or other approved protection measure.

11. Plant management

- All planted areas are to be regularly monitored to ensure the soil around the plants remains moist for a nominal period of twelve weeks. The period of 'watering in' may vary according to the final site conditions and the time of planting.
- Planted areas are to be regularly monitored for weeds with spot spraying or hand removal the preferred method.
- Any plants which do not take and survive must be replaced.
- The planting must be monitored regularly with any unsuccessful plants replaced as soon as practical, to ensure an effective vegetative screen is achieved.



North

ADVERTISED PLAN

Legend

- Property Boundary
- 2.2m high black mesh security fencing
- 5m wide screen planting
- On site retained vegetation
- On site vegetation to be removed
- 10m wide fire break
- Internal roads
- Solar Panel arrays

NOT FOR CONSTRUCTION

HORIZON STUDIO LANDSCAPE ARCHITECTURE
e: simon@horizonstudio.com.au ph: 0418306225
Feathertop Track, Harrietville, Victoria, 3741.

0 .1 .25 .5 1.0 2.5

scale - 1:25,000 in kilometres @ A3

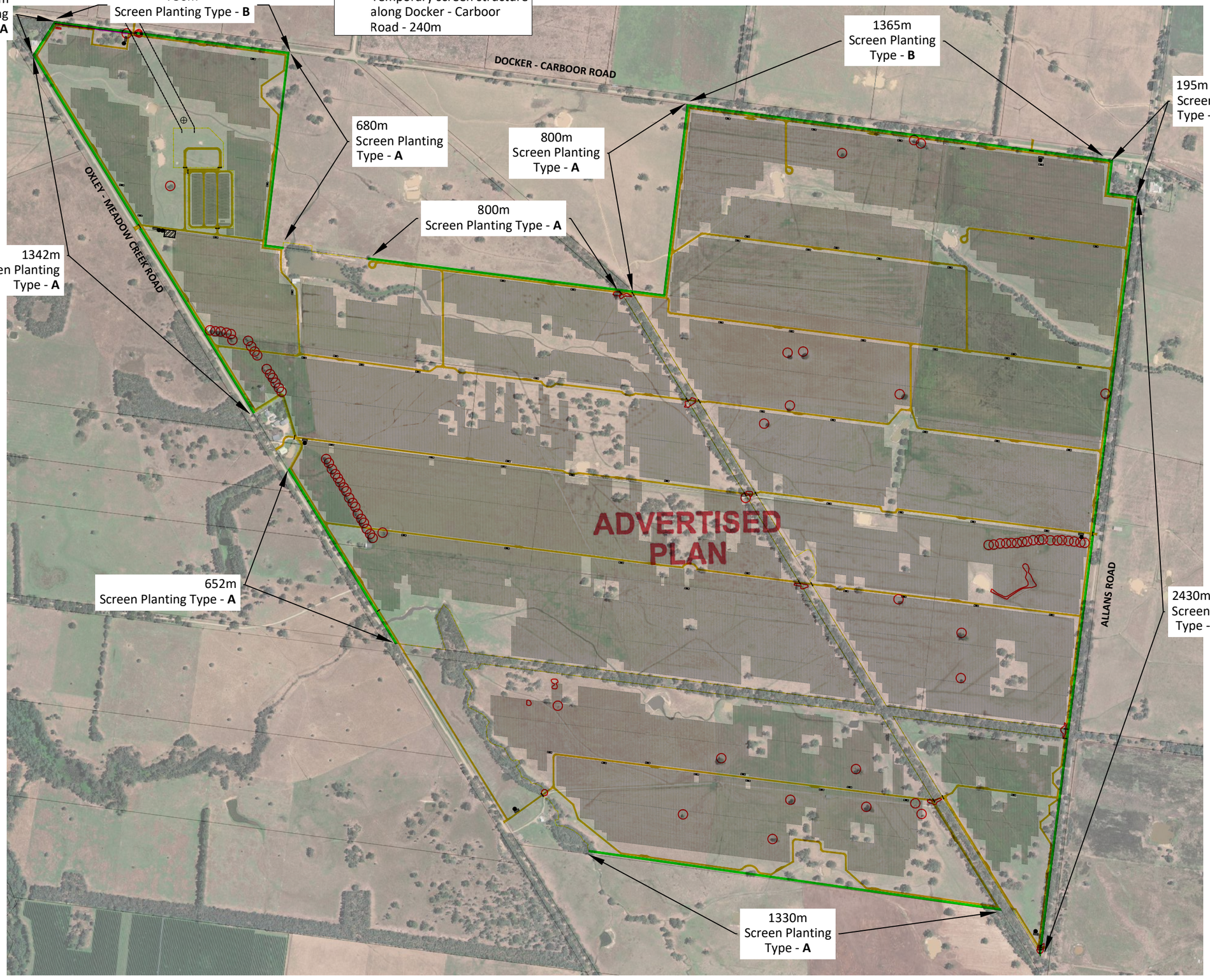
Rev no.	Revision	Date
1.	Draft for comment	31.05.24
2.	Final for approval	04.06.24

Prepared for:
Meadow Creek Solar Farm Pty Ltd
430 Victoria street ,
Brunswick VIC 3056

Landscape Plan

Meadow Creek Solar Farm

Sh 1 of 6 Drg no. - LP240501



North

Planting types

Vegetation type	Planting type % of mix				
	A	B	C	D	E
Small to medium shrubs up to 3m height				100%	
Medium to large native shrubs between 3 to 6m height.	70%	80%	70%		
Small to medium native trees between 6 to 15m height	20%	20%	30%		60%
Medium to large native trees between 15 to 25m height	10%				40%

Note:

- Lengths of screen planting corridors is approximate, measured from corners and end of fence runs. Distances are to be confirmed on site prior to calculating actual areas for planting.
- Refer to Sheet 4 for typical planting arrangement.
- Refer to Sheet 5 for plant species descriptions

Legend

- Property Boundary
- 2.2m high black mesh security fencing
- 5m wide screen planting
- Temporary screen structure
- On site vegetation to be removed
- Internal roads
- Solar Panel arrays

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Solar Farm Pty Ltd
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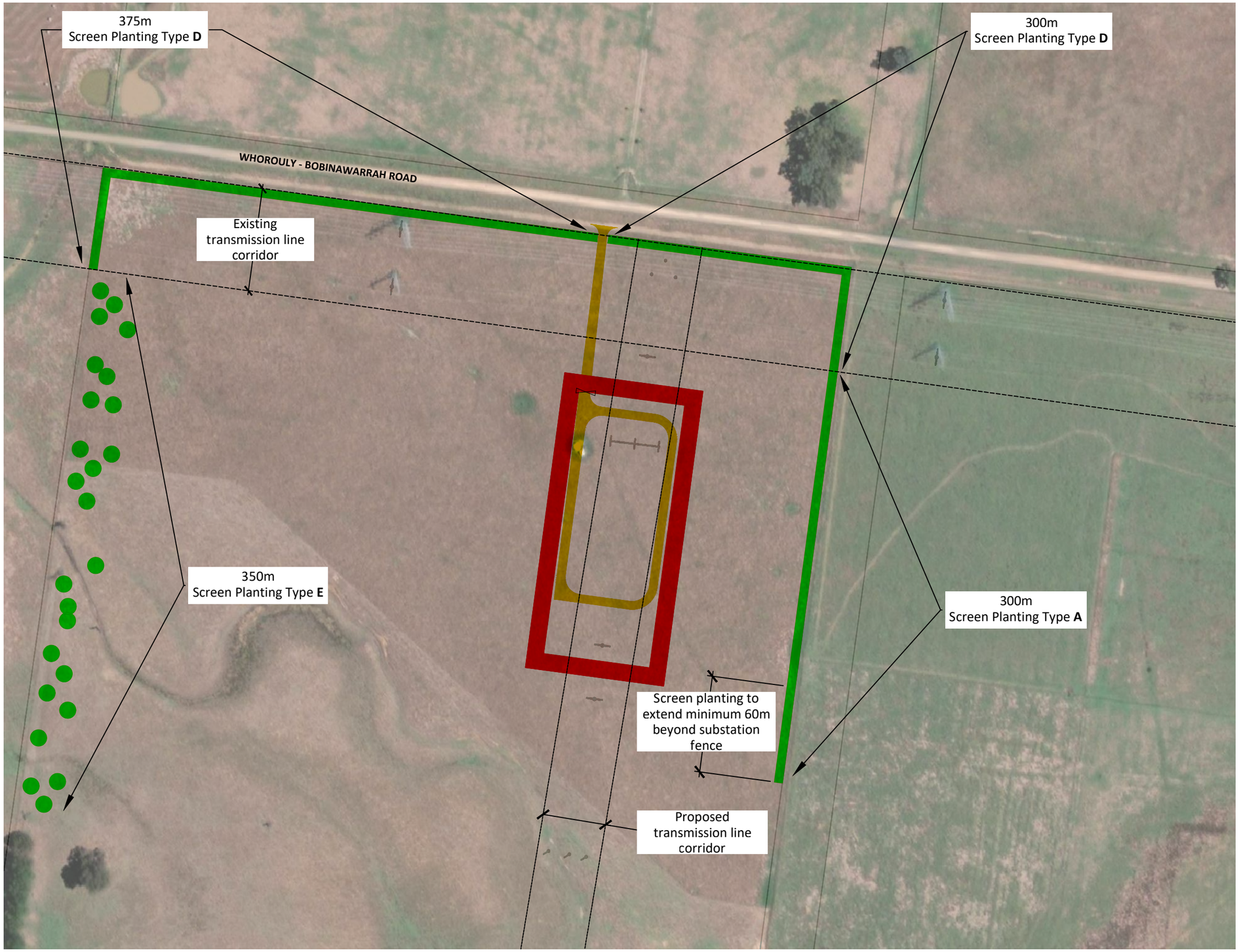
Landscape Plan

Meadow Creek Solar Farm

Sh 2 of 6 Drg no. - LP240502



North

Planting types

Vegetation type	Planting type % of mix				
	A	**B**	**C**	**D**	**E**
Small to medium shrubs up to 3m height				100%	
Medium to large native shrubs between 3 to 6m height.	70%	80%	70%		
Small to medium native trees between 6 to 15m height	20%	20%	30%		60%
Medium to large native trees between 15 to 25m height	10%				40%

Note:

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- Refer to Sheet 4 for typical planting arrangement.
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Legend

- Property Boundary
- 2.2m high black mesh security fencing
- 5m wide screen planting
- Tree planting
- Internal roads
- 10m wide fire break
- Transmission towers

NOT FOR CONSTRUCTION

ADVERTISED PLAN

0 10 25 50 100 250

scale - 1:2500 in metres @ A3

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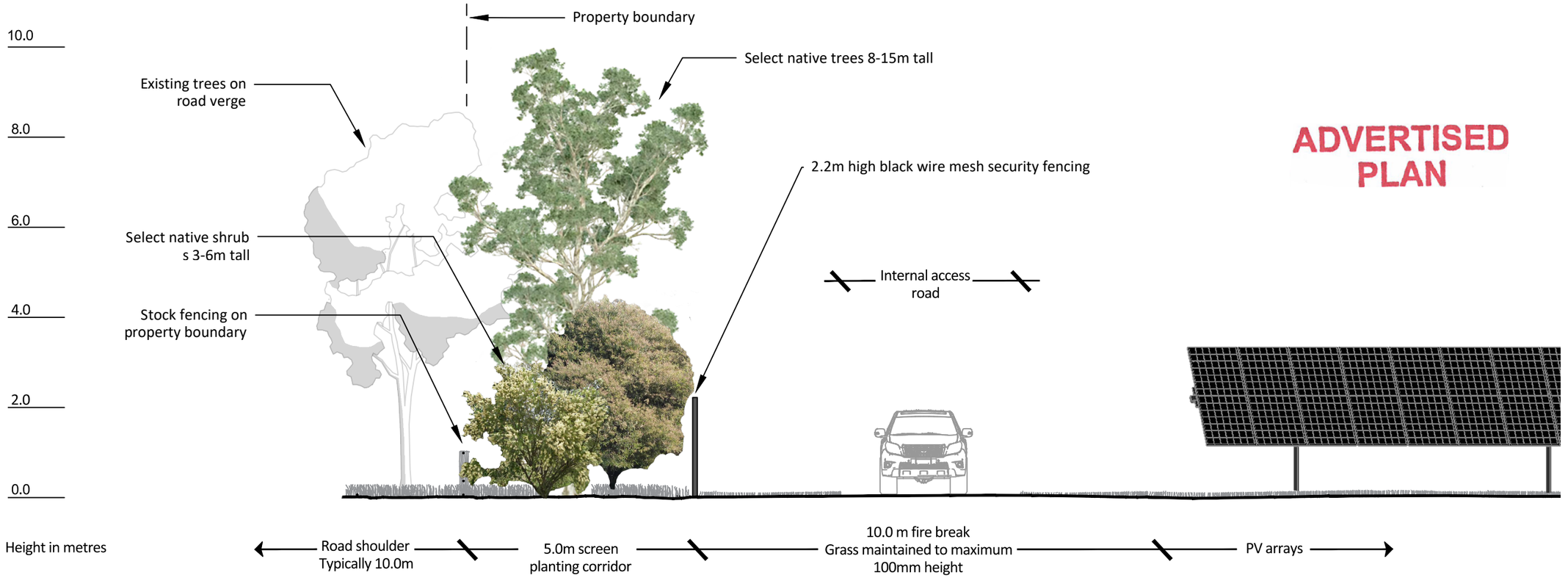
Landscape Plan

Meadow Creek Solar Farm

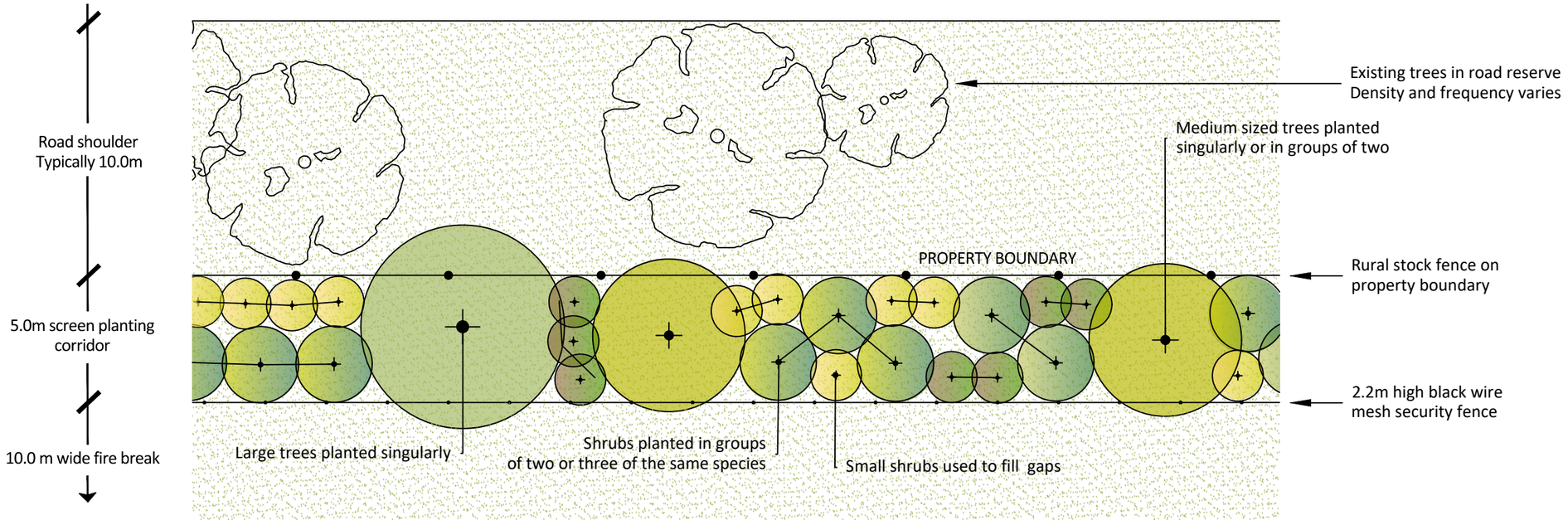
Sh 3 of 6 Drg no. - LP240503



ADVERTISED PLAN

Typical section
Screen planting types A, B & C
Scale - 1:100

Note:
- Plant in random patterns, no straight lines.



Typical planting plan
Screen planting types A, B & C
Scale - 1:200

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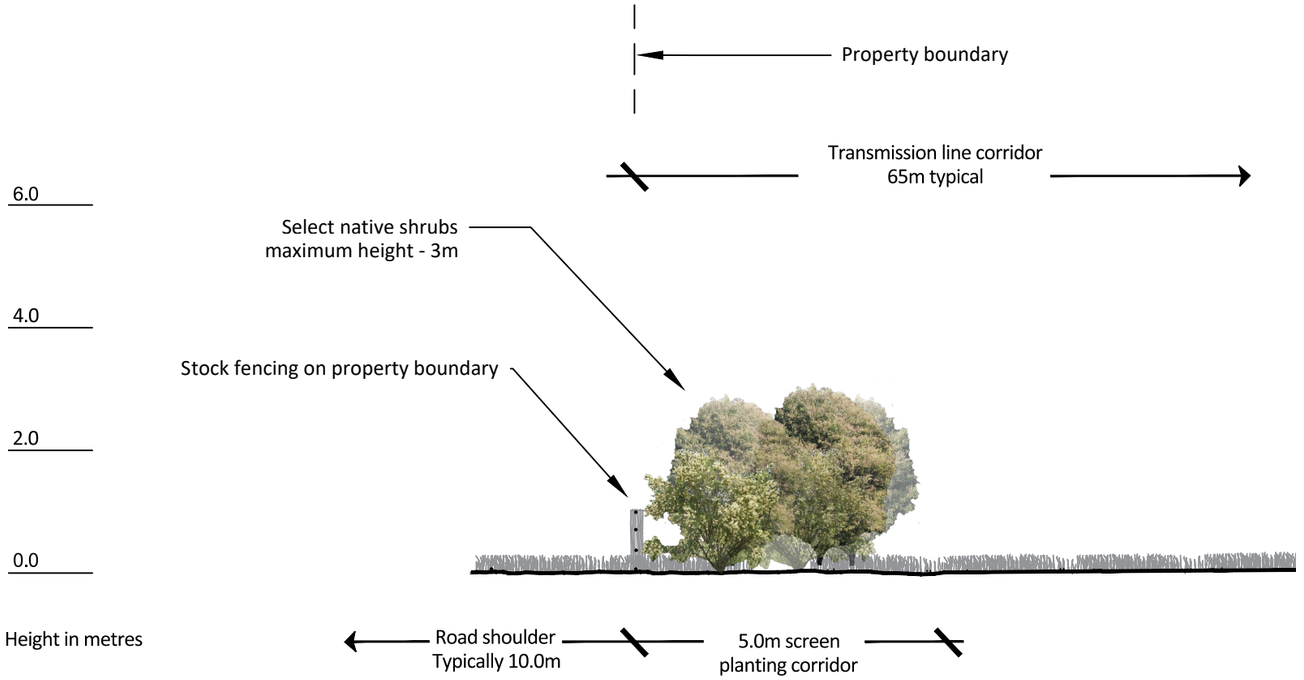
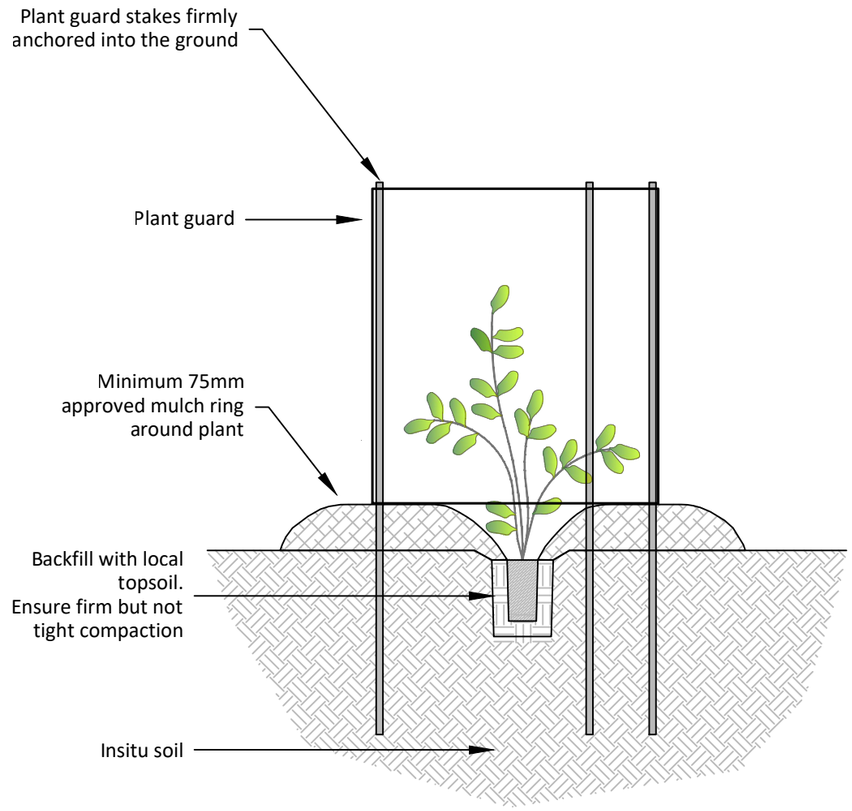
Typical arrangement
Types A, B & C
Meadow Creek Solar Farm

Sh 4 of 6 Drg no. - LP240504



Typical section
Screen planting type D
Scale - 1:100

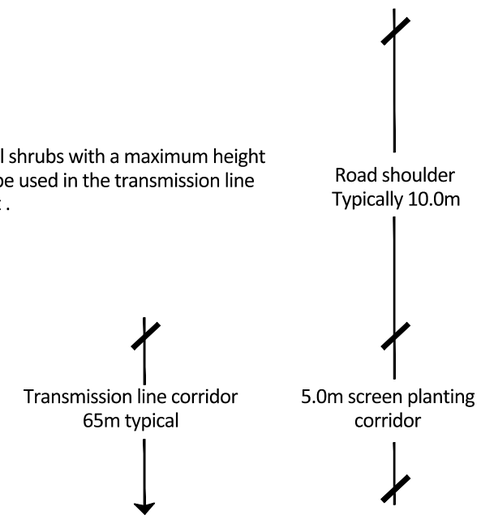


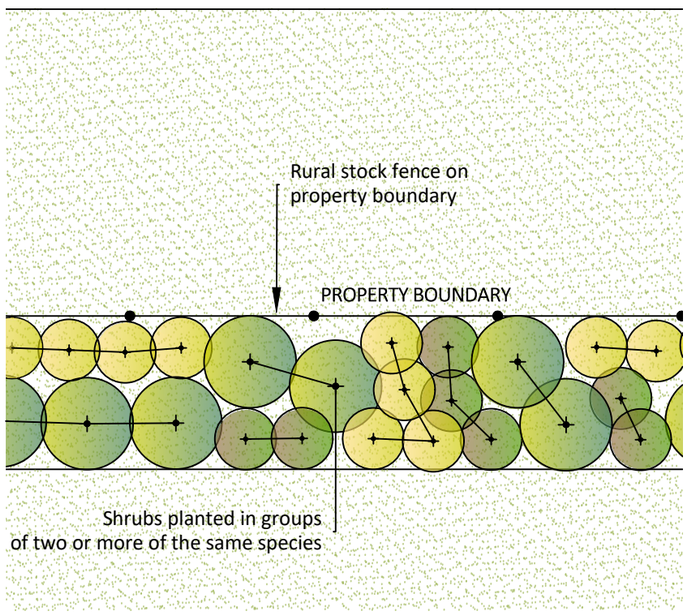
Typical planting detail
Tubestock
Scale - 1:10

Note:
- Tubestock to be planted slightly below surrounding ground level, 20- 30 mm.
- Ensure no soil containing roots is exposed to air after planting.
- Pull mulch away from stem and plant base to create a well.
- Ensure the plant foliage is free from the tree not guard, (not stuck underneath).
- Plant guard must be adequately secured by stakes or pins.

ADVERTISED PLAN

Note:
- Only small shrubs with a maximum height of 3m to be used in the transmission line easement .





Typical planting plan
Screen planting type D
Scale - 1:200

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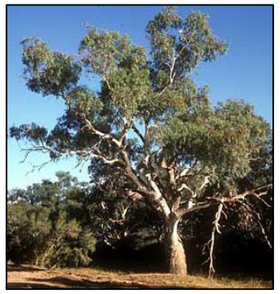
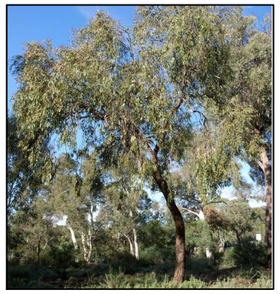
Typical arrangement
Type D
Meadow Creek Solar Farm

Sh 5 of 6 Drg no. - LP240505

Large trees, 20 metres + height

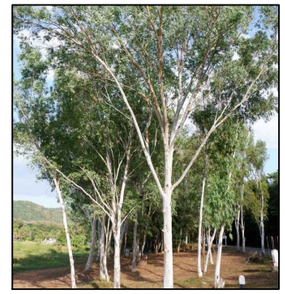

Eucalyptus *camaldulensis*


Eucalyptus *dives*


Eucalyptus *radiata*

Small to medium trees, 8 - 20 metres height


Acacia *melanoxylon*


Eucalyptus *melliodora*

Medium to large shrubs, 5 - 8 metres height


Acacia *acinacea*


Acacia *obliquinervia*


Acacia *pycantha*


Acacia *pravissima*

Small to medium height shrubs, to 3 metres height


Acacia *paradoxa*


Banksia *marginata*


Bursaria *spinosa*


Cassinia *aculeata*

Botanical name	Common name	Size at maturity - 20 years (height by width in metres)	Planting size	Planting spacing	Planting scheme					Ecological Vegetation Class, (EVC)
Tree species					Type A	Type B	Type C	Type D	Type E	
Acacia *melanoxylon*	Blackwood	15x5	50mm Tube	1 per 4m2	✓	✓	✓		✓	47
Eucalyptus *camaldulensis*	River Red Gum	25x15	50mm Tube	1 per 8m2	✓				✓	55
Eucalyptus *dives*	Broad-Leaved Peppermint	20x10	50mm Tube	1 per 6m2	✓	✓	✓		✓	
Eucalyptus *melliodora*	Yellow Box	10x8	50mm Tube	1 per 4m2	✓	✓	✓		✓	55
Eucalyptus *radiata*	Narrow leaf Peppermint	20x10	50mm Tube	1 per 6m2	✓	✓	✓		✓	47
Shrub species										
Acacia *acinacea*	Gold-dust Wattle	5x3	50mm Tube	1 per 2m2	✓	✓	✓			55
Acacia *obliquinervia*	Mountain Hickory Wattle	8x6	50mm Tube	1 per 3m2	✓	✓	✓			
Acacia *paradoxa*	Hedge Wattle	4x3	50mm Tube	1 per 2m2	✓	✓	✓			55
Acacia *pycnantha*	Golden Wattle	8x5	50mm Tube	1 per 3m2	✓	✓	✓			55
Acacia *pravissima*	Ovens Wattle	5x3	50mm Tube	1 per 3m2	✓	✓	✓			
Banksia *marginata*	Silver Banksia	3x3	50mm Tube	1 per 2m2	✓	✓	✓	✓		
Bursaria *spinosa* var macrophylla	Sweet Bursaria	3x3	50mm Tube	1 per 2m2	✓	✓	✓			55
Cassinia *aculeata*	Common Cassinia	3x3	50mm Tube	1 per 2m2	✓	✓	✓	✓		47
Cassinia *longifolia*	Shiny Cassinia	3x3	50mm Tube	1 per 2m2	✓	✓	✓	✓		
Leptospermum *continentale*	Prickly Tea-Tree	2x2	50mm Tube	1 per 2m2				✓		47
Melaleuca *parvistaminea*	Rough Barked Honey Myrtle	3x2	50mm Tube	1 per 2m2				✓		

Small to medium height shrubs, to 3 metres height


Cassinia *longifolia*


Leptospermum *continentale*


Melaleuca *parvistaminea*

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