

# Master Specification

## Part PR-LS-C8

### Plant Rescue and Maintenance

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**Government of South Australia**  
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# PR-LS-C8 Plant Rescue and Maintenance

## 1 General

- a) This Master Specification Part specifies the requirements for the rescue of plants from Project Sites and maintenance of the relocated plants, including:
  - i) the documentation requirements, as set out in section 2;
  - ii) the plant rescue requirements, as set out in section 3;
  - iii) the site conditions for plant relocations, as set out in section 4;
  - iv) the plant relocation procedure requirements, as set out in section 5;
  - v) the maintenance requirements, as set out in section 6; and
  - vi) the Hold Point requirements, as set out in section 7.
- b) This Master Specification Part does not apply to the relocation of trees and palms (refer to PR-LS-C4 "Tree and Palm Transplanting").
- c) Plant rescue and maintenance must comply with the Reference Documents, including AGRD Part 6B: Roadside Environment.
- d) The Contractor must ensure that, where required under the *Controlled Substances Act 1984* (SA), and the *Controlled Substances (Pesticides) Regulations 2017* (SA), workers undertaking pest control work must hold a current Pest Management Technician's License. The Contractor must provide evidence of the Pest Management Technician's Licences prior to commencement of a spraying program, as part of the Quality Management Records.

## 2 Documentation

### 2.1 Construction Documentation

In addition to the requirements of PC-CN3 "Construction Management", the Construction Documentation must include:

- a) the seed details and location of seed storage, in accordance with section 3.3l); and
- b) the cutting details and location of the cutting storage, in accordance with section 3.3l).

### 2.2 Quality Management Records

In addition to the requirements of PC-QA1 "Quality Management Requirements" or PC-QA2 "Quality Management Requirements for Major Projects" (as applicable), the Quality Management Records must include current Pest Management Technician's Licenses, in accordance with section 1d).

### 2.3 Maintenance Plan

The Maintenance Plan must include all specific maintenance requirements associated with the successful establishment of the relocated plants, as required by section 6.1c).

## 3 Plant rescue

### 3.1 General

- a) Seed or cuttings must only be taken from the plants which are to be removed from the Site.
- b) The Contractor must follow the plant rescue method specified in the Design Documentation (plant relocation, seed collection or vegetative cuttings).

### 3.2 Plant relocation

Where the Design Documentation specifies that plants are to be relocated:

- a) the Contractor must relocate the individual plants identified in the Design Documentation;
- b) the Design Documentation must specify whether each plant relocation means:
  - i) direct relocation on Site;
  - ii) direct relocation to another site; or
  - iii) relocation to a site following a period of holding in a nursery; and
- c) details of where the plants have been relocated to must be included in the As-Built Records.

### 3.3 Seed collection and vegetative cuttings

Where the Design Documentation specifies that seeds or vegetative cuttings are to be collected:

- a) the collection of native plant materials (seed, fruit, rhizome, cutting material, tuber and bulb) is controlled under Section 49 of the *National Parks and Wildlife Act 1972 (SA)*, and the propagule collector engaged by the Contractor must obtain a valid permit for collection;
- b) the Contractor must obtain a permit from the Minister for Environment and Conservation to collect native plant materials from forest reserves, national parks and wildlife reserves, Crown land and any other land reserved for, or dedicated to public purposes, such as roadsides and local council reserves;
- c) written approval from the management authority responsible for the land must be obtained by the Contractor prior to collection of native plant materials;
- d) other conditions may be imposed which limit the amount of native plant materials to be collected, the area within which native plant materials can be collected or the species from which native plant materials may be collected;
- e) prior to plants being cleared from the Site, the Contractor must collect seed or vegetative cuttings (as applicable) from the individual plants identified in the Design Documentation;
- f) the Contractor must determine:
  - i) in relation to seeds, when seed is mature and ready for collecting; and
  - ii) in relation to vegetative cuttings, when to take the cuttings and the best type to take (e.g. young growth, mature material);
- g) where applicable, the Contractor must collect, extract, clean and label the seed;
- h) the Contractor must label:
  - i) seed to indicate the plant species name, date of collection, weight of seed and place of collection; and
  - ii) cuttings with plant species name, date and place of collection;
- i) cuttings must be stored in moist paper in a cool place prior to planting;
- j) seed must be stored in air-tight containers at a constant cool temperature, away from direct light;
- k) seed and vegetative cuttings must be provided to a nursery nominated for propagation of plants or, in the case of seeds, to a suitable storage facility; and
- l) the Contractor must provide the seed and cutting details as required by section 3.3h) and the location of the seed and cutting storage as required by section 3.3k) as part of the Construction Documentation.

## 4 Site conditions for plant relocation

Plants must be relocated as close as possible to the original location taking into consideration all relevant site conditions including soil type, aspect and microclimate.

## 5 Plant relocation procedures

### 5.1 General

This section 5 sets out the procedure for relocating plants when plant relocation has been specified in the Design Documentation as the method of plant rescue.

### 5.2 Timing

- a) The Contractor must relocate the plants in accordance with the timing requirements specified in the Design Documentation.
- b) If practicable, plants must be moved in autumn or winter when their growth rate is slowest and the soil is moist.

### 5.3 Weed control

- a) The Contractor must ensure that, before plant relocation commences:
  - i) the areas where plants are to be relocated must be eradicated of weeds;
  - ii) any existing vegetative growth (excluding native vegetation) must be slashed to a height of 150 mm prior to spraying with a knockdown herbicide;
  - iii) trash build-up and cut material must be removed from the area prior to spraying with a knockdown herbicide (Roundup or equivalent) incorporating an herbicide marker dye; and
  - iv) where weed control is to be undertaken around waterways and wetlands, Roundup Biactive (or equivalent) must be used.
- b) Herbicides must be used according to the manufacturer's recommended rates and any off-target damage must be rectified by the Contractor.
- c) Herbicides must be used in accordance with PR-MA-M1 "Herbaceous and Woody Weed Control".

### 5.4 Root preparation

- a) The Contractor must undertake root pruning in advance of relocation if specified in the Design Documentation.
- b) If root pruning is required, the Contractor must cut the roots at the margins of the root ball prior to relocation to allow the plant to adjust whilst still in situ.
- c) For large shrubs root preparation must occur progressively, commencing at least 4-8 weeks prior to the plant being dug from the ground.

### 5.5 Setting out

- a) The Contractor must set out the replanting locations in accordance with the Design Documentation.
- b) Replanting locations must be set out in accordance with the Reference Documents (including AGRD Part 6B: Roadside Environment) and other Utility Service Authority legislation, regulations and requirements.
- c) Large shrubs must not be planted within 3.0 m of any pedestrian or cycle path.

- d) Large shrubs must not be replanted within 2.0 m of any fence.
- e) The Contractor must provide 2 days' prior notification to the Principal when setting out is to occur to allow for inspection of the set out, which will constitute a **Hold Point**. The Contractor must not commence replanting until this Hold Point has been released.

## 5.6 Preparation of planting holes

- a) The Contractor must prepare the planting hole in accordance with the method specified in the Design Documentation.
- b) Planting holes must be prepared before the plant to be relocated is dug up.
- c) As far as practicable, topsoil and subsoil must be kept separate when preparing planting holes.
- d) Unsuitable material brought to the surface during excavation of planting holes must be removed from Site by the Contractor.
- e) The planting hole must be at least twice the diameter of the root ball and no deeper than the height of the proposed root ball.
- f) If the depth of the planting hole exceeds the root ball height, compacted soil must be added to the hole to prevent settling after transplanting.
- g) The sides of the planting hole must be sloped and roughened to create an irregular surface that will facilitate root penetration.
- h) Where underground services are present, planting holes must be dug by hand.

## 5.7 Root excavation technique

- a) The Contractor must excavate the roots of the plants to be relocated using the method specified in the Design Documentation.
- b) Before any root excavation is carried out, the Contractor must:
  - i) thoroughly water the plants to be relocated; and
  - ii) mark the proposed root ball size on the ground.
- c) The root ball diameter for large shrubs must be at least 10 mm for every 1 mm of trunk diameter, measured at 300 mm above the ground.
- d) The root ball diameter for tussock grasses and other strap leaf plants must generally be twice the diameter of the base of the tussock.
- e) Where soil is at risk of being lost during relocation, the root ball must be wrapped in natural fibre (e.g. hessian) to prevent soil being lost during relocation, subject to section 5.7g).
- f) Once the root ball is securely wrapped and tied, the root ball can be undercut.
- g) Small plants do not need to be wrapped if the soil is moist and holds together.

## 5.8 Lifting techniques

- a) The Contractor must determine the required lifting technique and equipment for the plant, taking into consideration the soil volume to be moved with the plant.
- b) Plants must be lifted from their existing location and placed in the pre-prepared planting holes as soon as practicable.
- c) Lifting of plants must be carried out or supervised by a qualified and suitably experienced horticulturist and crane or machine operator.
- d) Suitable slings must be attached around a balance point of the plant and must provide a support system around the root ball.

- e) When a sling is attached to the plant, padding and protection must be used to reduce possible damage.
- f) Plants must not be lifted by the trunk alone.
- g) A suitably qualified horticulturalist and machine operator must determine the support system to be used.

## 5.9 Backfill

- a) Once the plant has been placed in the hole it must be backfilled with site topsoil and lightly consolidated.
- b) The plant must be set at a height such that the surface of the root ball is at the same level as the surrounding soil surface.
- c) Topsoil used as backfill for planting must meet the requirements of PR-LS-C7 "Topsoil and Earthworks".
- d) Where suitable site topsoil is not available for backfill, imported soil must be used.
- e) Imported soil must be in accordance with PR-LS-C7 "Topsoil and Earthworks".
- f) Topsoil stockpiled from the removal site also may be used as backfill, subject to section 5.9c).

## 5.10 Soil additives

- a) TerraCottem Universal must be mixed into the backfill soil at the time of planting in accordance with the manufacturer's recommended installation methodology and rates.
- b) Proposals to use alternatives to TerraCottem must be submitted to the Principal for approval in accordance with PC-CN3 "Construction Management". Alternatives to TerraCottem must not be used until the Hold Point contemplated by PC-CN3 "Construction Management" has been released.

## 5.11 Watering basin

A shallow watering basin suitable for the size of the plant relocated must be constructed around the perimeter of the root ball of each plant relocated.

## 5.12 Initial watering

Immediately following planting, each plant must be watered with 20 litres of clean potable water.

## 5.13 Reducing water loss

- a) The Contractor must lightly prune the foliage of the plant prior to relocation if required to reduce transpiration.
- b) The Contractor must apply an anti-transpirant to the plant in a spray form prior to relocation. The Contractor must determine the type and correct amount of anti-transpirant for each plant.

## 5.14 Marker stakes

- a) All relocated plants must be identified with marker stakes.
- b) Marker stakes must be:
  - i) hardwood stakes 750 mm long, 25 x 25 mm width/depth;
  - ii) straight, free from knots or twists, pointed at one end; and
  - iii) driven a minimum of 250 mm into the planting hole with no less than 500 mm remaining above ground level.



## 5.15 Tree guards

- a) Where tree guards are required, they must be 450 mm high with 230 mm sides and made from a rigid, biodegradable material that holds its form for at least 12 months.
- b) Tree guards must be assembled and positioned around the plant in accordance with the manufacturer's instructions.
- c) Support stakes must extend 50 mm above the tree guard and be driven a minimum of 250 mm into the ground.
- d) Tree guards must be installed with one hardwood and one bamboo stake to prevent the tree guard from spinning.

## 5.16 Weed mats

- a) Weed mats are required and must be Jutemat Biodegradable (or equivalent) 750-800 gsm, 600 x 600 mm.
- b) Weed mats must be installed in accordance with the manufacturer's instructions.

## 5.17 Mulch

- a) If the Design Documentation specifies that mulch is required, the Contractor must evenly spread the mulch to a depth of 100 mm.
- b) All mulch material must:
  - i) slope toward the base of stems of plants so that the mulch is not in contact with the stems of the plants;
  - ii) be raked to an even surface flush with the surrounding finished levels;
  - iii) be well leached, free from deleterious material such as soil, weeds, sticks, sawdust, plastic and metal; and
  - iv) have a low fines content.
- c) Mulch available from the removal of other on-site vegetation must only be used where:
  - i) specified in the Design Documentation and approved for this use by the Principal;
  - ii) cut plant material does not contain environmental weed species listed in the Department Environmental Weeds List or weeds species declared under the *Landscape South Australia Act 2019* (SA); and
  - iii) the chippings created from the cut plant material do not pose a risk to public safety or property.
- d) The Contractor must apply the mulch type specified in the Design Documentation. If the mulch type is not specified in the Design Documentation, mulch must have minimum 70% hardwood content.

# 6 Maintenance

## 6.1 General

- a) This section 6 applies to all plants relocated in accordance with section 5.
- b) The Contractor must maintain the relocated plants for the duration of the Landscape Maintenance Period, including:
  - i) the continued care of rescued plants within the area of the Site indicated in the Design Documentation to promote healthy and vigorous growth by implementing Best Industry Practice relevant to horticulture activities; and

- ii) rectifying any Non-Conformances that become apparent in the plant rescue Works under normal conditions and according to the season.
- c) The Contractor must submit a Maintenance Plan to the Principal within 2 weeks of the successful relocation of the rescued plants. The Maintenance Plan must include all specific maintenance requirements associated with the successful establishment of the relocated plants, taking into account the species and seasons.

## 6.2 Watering relocated plants

The Contractor must ensure that all relocated plants are free of water stress at all times during the Landscape Maintenance Period.

## 6.3 Weed control

The Contractor must ensure that, for the duration of the Landscape Maintenance Period:

- a) an area of 1200 mm diameter around all relocated plants (including the area inside tree guards) must be kept free of weeds by spraying with a knockdown herbicide (Roundup or equivalent) incorporating an herbicide marker dye;
- b) where weed control is to be undertaken in and around waterways and wetlands, Roundup Biactive (or equivalent) must be used;
- c) herbicides must be used according to the manufacturer's recommended rates and any off-target damage must be rectified by the Contractor;
- d) weeds growing inside the tree guard or within the plant's structure must be hand-pulled and disturbance to the soil must be minimised as much as possible; and
- e) herbicides must be used in accordance with PR-MA-M1 "Herbaceous and Woody Weed Control".

## 6.4 Pest and disease control

- a) The Contractor must ensure that insect pests, fungus and diseases are controlled by means of appropriate treatments for the duration of the Landscape Maintenance Period.
- b) All chemicals must be used in accordance with the manufacturer's recommendations and must be approved by the Principal.
- c) The Contractor must avoid off-target damage and rectify any off-target damage that occurs.
- d) The Contractor must recommend preferred methods of pest and disease control for the project, and chemicals and application rates to be used.

## 6.5 Maintenance of marker stakes and tree guards

- a) Where marker stakes or tree guards within the area of the Site specified in the Design Documentation have become damaged or defective during the Landscape Maintenance Period, they must be replaced by the Contractor as soon as practicable with the same type of marker stake or tree guard.
- b) Tree guards must be assembled and installed around the plant in accordance with the manufacturer's instructions.

## 6.6 Maintenance of weed mats

Where the weed mats within the area of the Site specified in the Design Documentation become damaged or defective during the Landscape Maintenance Period, they must be replaced by the Contractor as soon as practicable with the same type of weed mat.

### 6.7 Removal of marker stakes and tree guards

The Contractor must remove tree guards and marker stakes at the end of the Landscape Maintenance Period.

## 7 Hold Points

Table PR-LS-C8 7-1 details the review period or notification period, and type (documentation or construction quality) for each Hold Point referred to in this Master Specification Part.

Table PR-LS-C8 7-1 Hold Points

Section reference	Hold Point	Documentation or construction quality	Review period or notification period
5.5e)	Approval of setting out on site	Construction quality	48 hours notification