

For Banksmeadow Transfer Terminal

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Page 3 of 22 Page: Document: 23.06.2016 Date:

PLA-NSW-XXX-XXX-1

PLAN

Landscape and Vegetation Management

TABLE OF CONTENTS

Quality In	formation	on	2
Definition	s/Abbre	eviations	4
Section 1	Introdu	uction	5
	1.1 1.2 1.3 1.4	Overview Scope and Objectives Legal and Other Requirements Stakeholder Consultation	5 6
Section 2	Goals	of LVMP	10
	2.1 2.2	Landscaping and Vegetation Roles and Responsibilities	10
Section 3	Existin	g Environment and Operational Impacts	11
	3.1 3.2	Existing Environment Predicted impacts of operation of the BTT	11 14
Section 4	Lands	cape and Vegetation Management Measures	15
	4.1 4.2 4.3 4.4	Visual Amenity Landscaping Irrigation Weed, Vermin and Pest	15 16
Section 5	Lands	cape and Vegetation Monitoring and Reporting	18
	5.1 5.2 5.3 5.4	Monitoring Program Performance Reporting and Review Exceedances and Corrective Actions Publishing of Monitoring Data	18 18
Reference	es		20
Appendic	es		21
Appendix	Α	Landscape Plan	22



Definitions/Abbreviations

LVMP	Landscape and Vegetation Management Plan
BTT	Banksmeadow Transfer Terminal
COC	Conditions of Development Consent
DPE	Department of Planning and Environment
EIS	Environment Impact Statement
EMP	Environment Management Plan
EP&A	Environmental Planning and Assessment (Act and Regulations)
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ERP	Emergency Response Plan
NIMS	National Integrated Management System
OEMP	Operational Environmental Management Plan
RIVO	Incident and Compliance Management System
Veolia	Veolia Australia and New Zealand
WHS	Work Health and Safety (Act and Regulation)



Page:Page 5 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

PLAN

Landscape and Vegetation Management

SECTION 1 INTRODUCTION

1.1 Overview

Veolia Australia and New Zealand (Veolia) operates the Banksmeadow Transfer Terminal (BTT), which is located at 14 Beauchamp Road and 34-36 McPherson Street, Banksmeadow (refer to site plans in OEMP Appendix A).

The BTT facility has been approved receive up to 500,000 tonnes per annum (TPA) of waste (including 400,000 TPA of putrescible waste and 100,000 TPA of non putrescible waste) from within the Sydney Region. The waste will be containerised and loaded onto rail wagons for transportation by rail to the Woodlawn Eco Project Site (owned and operated by Veolia) in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for treatment, recycling and energy recovery.

The BTT includes the following infrastructure:

- An access road for waste trucks entering and exiting the facility from Beauchamp Road.
- Incoming and outgoing weighbridges to check the waste type and weight of the waste being delivered to the facility.
- An enclosed building for the unloading and handling of waste, with environmental controls such as dust suppression and odour control systems.
- A hardstand area for temporary storage and manoeuvring of full and empty sealed shipping containers prior to loading on to trains.
- Rail sidings for the loading of containers onto trains for rail transport to Woodlawn.

The NSW Department of Planning and Environment (DPE) assessed the State Significant development (SSD 5855) and granted Development Consent for the 'State Significant' development on 28 April 2015, in accordance with section 89 (e) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In addition, an Environmental Protection Licence (EPL) has been issued under the *Protection of the Environment Operations Act 1997* (POEO Act) by the NSW Environment Protection Authority (EPA).

This Landscape and Vegetation Management Plan (LVMP) has been prepared in accordance with the requirements of the Conditions of Development Consent (the Consent Conditions) and Environment Protection Licence issued for the BTT. The LVMP ensures that landscape impacts, from any activities undertaken during its operational phase are suitably managed and details the relevant control strategies and monitoring procedures.

The LVMP incorporates the Pest and Vermin Management Plan.

1.2 Scope and Objectives

The purpose of this LVMP is to provide, in accordance with Consent Conditions, EPL, relevant legislation and as part of Veolia's National Integrated Management System (NIMS), landscape and vegetation management procedures to form part of the BTT Operational Environmental Management Plan (OEMP).



The OEMP is the working environmental management tool for the operation of the BTT, concentrating on key environmental issues, including supporting detailed plans for the management of water quality, waste, traffic, air quality, noise, landscape and vegetation and emergency response.

This LVMP provides information on how to detail the management practices at the BTT to satisfy the requirements set out in the conditions of consent.

The LVMP includes proposals for new landscaping areas on site at the McPherson St entry and along the inner north-east facing boundary to the south west of the site access road.

The species selected for landscaping are predominantly native species, selected for their suitability to site conditions as well as for their appearance and screening value.

The LVMP also details management and control practices for vermin, pest and weed management.

1.3 Legal and Other Requirements

1.3.1 Conditions of Development Consent

Conditions 45 of Schedule 3: Environmental Performance Conditions of the Development Consent establishes the requirements for landscape and vegetation management at the BTT. In particular, it requires the preparation and implementation of a Landscape and Vegetation Management Plan (LVMP) to the satisfaction of the Secretary.

Condition 21 of Schedule 3: Environmental Performance Conditions establishes the requirements for pest, vermin and noxious weed management in the BTT. This is also addressed within this LVMP.

The conditions of consent considered relevant to this LVMP are provided in Table 1.1 below.

Relevant COC	Requirement	LVMP Reference
Landscapi	ng and Vegetation Management	
45	The Applicant shall prepare and implement a Landscaping and Vegetation Management Plan for the development in consultation with City of Botany Council and to the satisfaction of the Secretary. The plan shall:	Refer to Section 1.4.1
45(a)	be approved by the Secretary prior to the commencement of construction	Noted
45(b)	detail any trees that are proposed to be removed, ringbarked, cut, topped or lopped;	Not relevant for OEMP – construction phase
45(c)	detail any revegetation works at the site, with particular attention to minimising the visibility of the site from residences and public vantage points, minimising bushfire risk and the use of indigenous species;	Refer to Appendix A
45(d)	ensure that any clearing or trimming of vegetation on the western side of	Noted

Table 1.1 Operational Consent Requirements



Landscape and Vegetation Management

	McPherson Street, at the intersection with Beauchamp Road, is undertaken in consultation with City of Botany Bay Council; and	
45(e)	describe the on-going measures (e.g. weed control and regular pruning) that would be implemented to maintain landscaping and vegetation on the site for the life of the development.	
Pest, Ver	min and Noxious Weed Management	
21	The Applicant shall:	
21(a)	implement suitable measures to manage pests, vermin and declared noxious weeds on site; and	Refer to Section 4.4
21(b)	inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area.	Refer to Section 5.1

1.3.2 <u>Mitigation Measures</u>

In addition, the operational mitigation measures appended to the Consent Conditions for waste management are presented below.

Table 1.2 Operational Mitigation Measure Requirements

	Mitigation Requirement	LVMP Reference
Biodive	rsity	
1	A Landscape Plan will be developed during detailed design, in accordance with the Draft Botany Bay DCP and the draft Landscape Technical Guidelines for Development Sites (2013) where appropriate. Plant species to be used in landscaping will be predominantly native, with locally indigenous species incorporated where practical and suitable.	Refer to Section 3.1.1
2	The landscaped zone on the western boundary bordering the Botany Building Recyclers will be designed to capture gross pollutants and oil and grits from pavement. This area will be regularly maintained to remove any rubbish and can be renewed on a regular basis.	Design includes controls prior to landscaped zone Refer to
3	Detailed design of the terminal building and associated waste handling facilities will incorporate reasonable measures to minimize the potential for birds, rodents,	SWLMP Refer to Section 2.1
	flies and other pests to gather at the BTT site, including provision for bird deterrent measures.	
4	Weed and plant infestations identified during the operation of the Proposal will be managed in accordance with a Vermin and Pest Control Plan which will form part of the OEMP	Refer to Section 4.4
Visual A	Amenity	·



		1	
1	Highly reflective building surfaces, bright coloured surfaces and unpainted metal or materials will be avoided for the transfer terminal building and offices.Refer to Section		
2	Where possible, exterior light fittings will be installed in such a way that directs the light downwards and minimises impacts on adjacent land users.	rects the Refer to Section 4	
3	The terminal building will be covered with light coloured Colourbond cladding to reduce its prominence in upwards views against the sky. The Colourbond cladding will be alternated with translucent panels to reduce the building bulk. Veolia has selected a pale eucalypt colour for the shed, however is willing to receive proposals from the community regarding the appearance of the terminal building. Further detail on materials and finishes would be provided to Planning and Environment for approval and Randwick City Council for review, prior to construction.		
4	The cladding of the building will be robust and graffiti resistant. Additionally, the Site will be fenced to prevent unauthorized entry of the Site by vandals.	· · · · · · · · · · · · · · · · · · ·	
5	The office building would be brick veneer, matching the existing office buildings onsite.		
6	In accordance with the Botany Bay DCP (2013) Part 3L (Landscaping and Part 20 (Landscape Technical Guidelines for Development Sites) and a detailed (construction level) landscape documentation, Site analysis and schedule of finishes will be prepared by a suitably qualified landscape architect.		
	Lighting design for the Site will be such that the criteria prescribed in Table 2.1 of Australian Standard – AS 4282-1997, "Control of Obtrusive Effects of Outdoor Lighting" for commercial areas will be achieved at the Site boundary.	Refer Section 4	
	The maximum reflectivity of any glazing on street frontages will not exceed 20 per cent to avoid nuisance in the form of glare to occupants of nearby buildings, pedestrians and motorists.	Refer Section 4	
	Appropriate directional signage will be provided at the Site entrances to direct vehicles and pedestrians safely around the Sit. Signage for the Proposal will be designed to relate, in size and form, to the scale of the transfer terminal, visibility and other advertisements within the vicinity, including the Goodman's Industrial Park and Botany Industrial Park on Beauchamp Road. Signage will be designed such that there will be no lighting overspill from the signs. Further detail for signage which approval is required (i.e. not under the Exempt Development under SEPP Exempt and Complying Development Codes) would be provided to Planning and Environment prior to construction, Randwick City Council would be consulted.	Refer Section 4	

1.4 Stakeholder Consultation

1.4.1 <u>Government entities</u>

The following government entities have been consulted with as part of the preparation of this LVMP:

- NSW Department of Planning and Environment
- NSW Environment Protection Authority (EPA)



- Landscape and Vegetation Management
- City of Botany Bay Council (Botany Council)

1.4.2 <u>Community</u>

Veolia aims to ensure that the local community remains informed of the progress of the project in a pro-active and responsive manner. Veolia's communication may include the following where applicable:

- public notices and announcements;
- meetings and correspondence with appropriate regulatory authorities; and
- Discussions with adjoining land owners / neighbours who may be affected by the BTT.

The key objectives of the community focused communication and consultation program include:

- Educating stakeholders regarding key aspects of the BTT; and
- Informing community groups and neighbours to help Veolia understand concerns.

The following avenues provide availability of information about the BTT:

- Dedicated Veolia webpage: <u>http://www.veolia.com.au/sustainable-solutions/community-development/banksmeadow-transfer-terminal</u>
- Community telephone line:

Location	Contact
BTT 24 hour feedback line	1800 298 981

- Dedicated email address:
 <u>banksmeadow@veolia.com au</u>
- Published monitoring data:

http://www.veolia.com.au/sustainable-solutions/environmentalcompliance/nsw-environmental-monitoring-data



SECTION 2 GOALS OF LVMP

2.1 Landscaping and Vegetation

This Landscape and Vegetation Management Plan (LVMP) has been prepared to detail the landscaping and vegetation management measures for the Banksmeadow Transfer Terminal (BTT) to minimise impact to biodiversity during its operation.

2.2 Roles and Responsibilities

Responsibilities for implementation of the LVMP are summarised in Table 2.1 below.

Action	Responsibility	Timing
Overall implementation of the LVMP	Facility Manager and ER or nominee	Ongoing
Inspection of site areas prior to, during and after construction	Facility Manager and ER and/or nominee	As Required
Implement methodology for landscaping and vegetation treatment	Facility Manager, and ER or nominee	Ongoing
Collate and maintain records of complaints, respond to complainant	ER and/or nominee	Ongoing
Identify remediation areas/maintenance needs and notify Construction Manager/ER	Facility Manager and ER and/or nominee	As Required
Authorise and confirm the implementation of mitigation measures and reporting	Facility Manager, ER or nominee	As Required

Table 2.1 Summaries of Responsibilities- LVMP



Page:	Page 11 of 22
Document:	PLA-NSW-XXX-XXX-1
Date:	23.06.2016

Landscape and Vegetation Management

SECTION 3 EXISTING ENVIRONMENT AND OPERATIONAL IMPACTS

The BTT is situated on the western side of Beauchamp Road, and the northern side of McPherson Street, in the suburb of Banksmeadow. The Site is surrounded by industrial lots. The Banksmeadow TT provides an industrial land use consistent with the existing land use, the adjacent land uses and potential future land uses. The BTT has low biodiversity values.

The nearest residential area is located approximately 250 m to the north-east of the BTT, within the suburb of Hillsdale. The residential area of Matraville is located approximately 350 m to the east of the BTT.

3.1 Existing Environment

3.1.1 Existing Vegetation

Prior to construction of the BTT, the vegetation on the site consisted of regrowth and planted native and exotic trees, shrubs and ground covers over highly disturbed soils. There was some removal of vegetation from the BTT during construction, but this is not considered to have significantly impacted biodiversity values given BTT site's previously domination by weed species, with low biodiversity values.

Trees on the BTT site prior to construction included *Eucalyptus microcorys* (Tallowwood), *Corymbia maculata* (Spotted Gum), *Ficus benjamina* (Weeping Fig), *Casuarina glauca* (Swamp Oak), *Quercus* sp. (Oak) and *Araucaria heterophylla* (Norfolk Island Pine). Trees proposed for removal during construction of the BTT are illustrated in Figure 3.1 (below).

A number of noxious and environmental weeds had been recorded on the site. These included *Lantana camara* (Lantana), *Ricinus communis* (Castor Oil Plant), Cortaderia selloana (Pampas Grass) and *Rotundata* (Bitou Bush).



Landscape and Vegetation Management



Figure 3.1 BTT Landscaping Plan

3.1.1.1 **Revegetation**

In the final stages of construction, some revegetation was conducted on the BTT site in accordance with the Construction Landscape Plan, prepared by landscape architects - Peter Glass & Associates (Refer to Appendix A).

Plant species used in landscaping were predominately native, with local indigenous species incorporated where practical and suitable. Plant species used are included in Table 3.1 below.



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Page 13 of 22 PLA-NSW-XXX-XXX-1 23.06.2016

Landscape and Vegetation Management

Table 3.1 BTT Plant Species

Scientific name	Common Name	Mature Height and Spread	Container Size	Approximate Plant Densities				
TREES								
BI Banksia integrifolia	Coast Banksia	5.0 x 4.0m	45L	As shown				
Tristaniopsis laurina	Water Gum	8.0 x 5.0m	25L	As shown				
CA Cupaniopsis anacardioides	Tuckeroo	6.0 x 4.0m	45L	As shown				
MD Melaleuca decora	White Feather Myrtle	8.0 x 4.0m	45L	As shown				
SHRUBS								
CA Correa alba	White Correa	1.0 x 1.0m	200mm/Viro- Tube	2/10 sq metres				
CR Correa reflexa	Red Correa	1.0 x 1.0m	200mm/Viro- Tube	1/10 sq metre				
BE Banksia ericifolia	Heath Banksia	3.0 x 2.0m	200mm/Viro- Tube	1/10 sq metre				
BS Banksia spinulosa	Hairpin Banksia	3.0 x 2.0mm	200mm/Viro- Tube	1/10 sq metre				
CC Callistemon citrinus	Crimson Bottlebrush	2.0 x 2.0m	200mm/Viro- Tube	2/10 sq metre				
KA Kunzea ambigua	Tick Bush	2.0 x 2.0m	200mm/Viro- Tube	2/10 sq metre				
MN Melaleuca nodosa	Ball Honeymyrtle	2.0 x 2.0m	200mm/Viro- Tube	2/10 sq metre				
WFWestringia fruticosa	Coast Rosemary	1.5 x 1.5m	200mm/Viro- Tube	1/10 sq metre				
GROUNDCOVERS			1					
BA Baumea articulate	Jointed Twig Rush	N/A	Viro-Tube	1/1 sq metre				
DC Dianella congesta	Flax Lily	N/A	Viro-Tube	1/1 sq metre				
DR Dichondra repens	Kidney Weed	N/A	Viro-Tube	2/1 sq metre				
FN Ficiniar nodosa	Club Rush	N/A	Viro-Tube	1/1 sq metre				
LL Lomandra longifolia	Mat Rush	N/A	Viro-Tube	1/1 sq metre				



Page 14 of 22
PLA-NSW-XXX-XXX-1
23.06.2016

Landscape and Vegetation Management

MS Microlaena stipoidies	Seeping Grass	N/A	Viro-Tube	2/1 sq metre
PA Pelargonium austral	Wild Geranium	N/A	Viro-Tube	1/1 sq metre
PP Poa poiformis	Tussock Grass	N/A	Viro-Tube	1/1 sq metre
TA Themeda australis	Kangaroo Grass	N/A	Viro-Tube	1/1 sq metre

3.1.2 <u>Weed, Vermin and Pest</u>

The existing extent of vermin and pest infestations on the BTT site is not known. Previous land uses on the site (storage and small scale commercial industrial operations) were not likely to have attracted large numbers of vermin and pests. However, there is habitat on-site for vermin and pests, within buildings and storage areas as well as in the areas of exotic vegetation.

3.2 Predicted impacts of operation of the BTT

Given the BTT site's low historic biodiversity value, there were no significant impacts predicted to occur as a result of the BTT's construction. The trees on site represented a very small amount of potential foraging habitat for birds and bats, including the threatened species Grey-headed Flying Fox (Pteropus poliocephalus. These losses were mitigated by the revegetation works undertaken on site following BTT construction.

Removal of weeds has reduced the extent and potential further spread of these invasive species

The three mature trees of *Corymbia citriodora* (Lemon-scented Gum) at the entrance to the Site on McPherson Street have been retained as shown in Figure 3.1.

Inappropriate handling of waste within the Banksmeadow TT would have the potential to attract vermin, flies and birds as the decomposition of waste on-site would emit odours that attract these pests. Proposed management measures to address these potential impacts are provided in Section 4, below.



Page:Page 15 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

Landscape and Vegetation Management

SECTION 4 LANDSCAPE AND VEGETATION MANAGEMENT MEASURES

4.1 Visual Amenity

Although the potential visual impacts associated with the BTT were assessed to be limited, a number of management and mitigation measures have been undertaken to ensure that the BTT is compatible with the wider Banksmeadow Industrial Precinct. These include:

- Highly reflective building surfaces, bright coloured surfaces and unpainted metal or materials have been avoided for the transfer terminal building and offices.
- Where possible, exterior light fittings have been installed in such a way that directs the light downwards to minimise impacts on adjacent land users.
- The transfer terminal building is covered with light coloured Colourbond cladding to reduce its prominence in upwards views against the sky. The Colourbond cladding is alternated with translucent panels to reduce the building bulk.
- The cladding of the building is robust and graffiti resistant. Additionally, the BTT is fenced to prevent unauthorised entry of the site by vandals.
- The office building has been integrated with the transfer building in terms of character and colouring, based on comments from Randwick City council.
- Lighting design is such that the criteria prescribed in Table 2.1 of Australian Standard AS 4282-1997, "Control of Obtrusive Effects of Outdoor Lighting" for commercial areas has been achieved at the site boundary.
- The maximum reflectivity of any glazing on street frontages does exceed 20 per cent to avoid nuisance in the form of glare to occupants of nearby buildings, pedestrians and motorists.
- All external signage will be installed in consultation with City of Botany Bay Council

4.2 Landscaping

Given the large scale of industrial development between the residential receivers and the BTT (including the Botany Industrial Park), there are limited viewing opportunities from the residential areas to the site which require landscaping. The two view points of the Site are from the signalised intersection of Beauchamp Road and Perry Street and from the street frontage of the Site with McPherson Street.

The landscaping at the McPherson Street entry is used as a screening measure to reduce the visibility of the buildings from the street. The landscaping in the area retains the pre-existing *Corymbia citriodora* trees, which have been supplemented by an assortment of native trees, shrubs and groundcovers planted along side them. New open steel palisade fencing powder coated in a dark colour has been erected across the McPherson Street frontages of the site.

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Page:Page 16 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

Landscape and Vegetation Management

4.3 Irrigation

Irrigation on site is connected to the rainwater harvesting system, which collects rainwater from a portion of the terminal building for storage and reuse on site, including irrigation.

A fully automatic drip irrigation system (the system) of quick-couplers at the lease edge of the verge has been installed at the McPherson Street frontage and along the eastern side of the transfer building to support plant growth and maintenance of the landscaping. The system provides full coverage of all planted areas with no more than 300mm between drippers, automatic controller and backflow prevention device and connection to a recycled water source.

The irrigation complies with both Sydney Water requirements as well as Australian Standards, and will be maintained in effective working order at all times. The system will be terminated as planting is established and no longer require irrigation.

Drought tolerant grasses and shrubs that are not reliant on watering to survive have been planted on the site.

4.4 Weed, Vermin and Pest

4.4.1 <u>Control Strategies</u>

All buildings and equipment are maintained in such a manner that will not encourage the presence of pests. All efforts are taken to prevent access by insects, birds and rodents. Steps are also taken to remove them when their presence has been detected.

4.4.2 Schedule and Method of Control

Management of pest and vermin at the site is controlled through both preventative and responsive mitigation measures.

Preventative control measures include, but are not limited to:

- The design of the building which is not conducive to bird habitation;
- Minimising the time waste is spent on the floor of the building;
- Inspection of the site by a registered pest controller every three months for the first year, and at least annually thereafter;
- Good house keeping practices including weekly site inspections to record the site conditions such as drains, sumps and litter, evidence of vermin and pests, and any actions undertaken to ensure the mitigation measures mentioned above are being implemented effectively
- Placement of rodent bait stations at various locations around the site as follows:
 - Transfer Terminal (8);
 - Compactor Pit (3);
 - Site Administration Office (2);
 - Weighbridge Office (2).
- Training of all staff for recognising potential vermin habitats;
- Border spraying, for the prevention of cockroaches, silverfish, spiders and ants; and,
- Cockroach gel in office areas.



Responsive measures include, but are not limited to:

- Recording and action of staff complaints and reports, as required; •
- Discussion of any pest or vermin issues at monthly toolbox meetings; and •
- Increase in the preventative measures listed above if considered necessary, • and as advised by the Pest Controller, such as netting or hanging wires for birds.



Page:Page 18 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

Landscape and Vegetation Management

SECTION 5 LANDSCAPE AND VEGETATION MONITORING AND REPORTING

5.1 Monitoring Program

Visual inspections as detailed in Section 4.4 will ensure that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area.

Inspection and monitoring during the operational phase of the BTT will be kept on Veolia's document management system. This will ensure that all monitoring activities will assist to measure the effectiveness of landscaping and vegetation measures implemented at the BTT.

A gardening and landscaping contractor will be engaged to ensure that all landscaping, gardening and weed management is performed to maintain all landscaped areas.

The Weekly Site Inspection Checklist, records the site conditions such as drains, sumps and litter, evidence of vermin and pests, and any actions undertaken to ensure the mitigation measures mentioned above are being implemented effectively.

5.2 **Performance Reporting and Review**

Annual management reviews of the environmental performance of the BTT will assess the continuing suitability, adequacy and effectiveness of the on-site environmental management measures implemented. This review will include performance against the goals of the LVMP.

Where performance reporting is required under the Consent Conditions or EPL, all relevant information will be recorded and maintained on site. This will include, but not be limited to, the following:

- Sampling dates, times and name of sampler;
- Chain of Custody, analysis and results;
- Complaints received and corrective actions taken; and
- Copy of the EPL, development consent and other relevant approvals.

Veolia will use monitoring data to review and identify any exceedances against the adapted goals with the appropriate corrective actions applied as discussed below.

Details of compliance reporting requirements are provided in Section 5.1.2 of the OEMP.

5.3 Exceedances and Corrective Actions

Any landscape related issues will be managed in accordance Veolia's Non Conformance Procedure (PRO-COL-000-137). Investigations will be undertaken in accordance with the NSW Incident Investigation Procedure (PRO-NSW-000-130) or on a case by case basis depending on the severity of the incident as described Section 5.1.1 of the OEMP.

Notification, emergency response and reporting requirements relating to incidents are detailed in Section 4.4 of the OEMP.



Page:	Page 19 of 22
Document:	PLA-NSW-XXX-XXX-1
Date:	23.06.2016

At completion of any investigation, any corrective actions required will be recorded in the Vault and managed in accordance with the NSW Corrective Action procedure (PRO-NSW-000-132) in a timely manner as described in Section 5.1.1 of OEMP.

5.4 Publishing of Monitoring Data

Where required, Veolia publishes the results of any environmental monitoring required under the EPL on the following website:

http://www.veolia.com.au/sustainable-solutions/environmental-compliance/nswenvironmental-monitoring-data



Page:Page 20 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

PLAN

Landscape and Vegetation Management

REFERENCES

- 1. Hyder, 2014a; Veolia Environmental Services Banksmeadow Transfer Terminal Environment Impact Statement, Hyder Consulting Pty Ltd, April 2014
- 2. Hyder, 2014b; Veolia Environmental Services Banksmeadow Transfer Terminal Response to Submissions, Hyder Consulting Pty Ltd, September 2014
- 3. Veolia Environmental Services Banksmeadow Transfer Terminal Environment Impact Statement, Hyder Consulting Pty Ltd (April 2014)



Page 21 of 22 PLA-NSW-XXX-XXX-1 Page: Document: 23.06.2016 Date: Landscape and Vegetation Management

APPENDICES

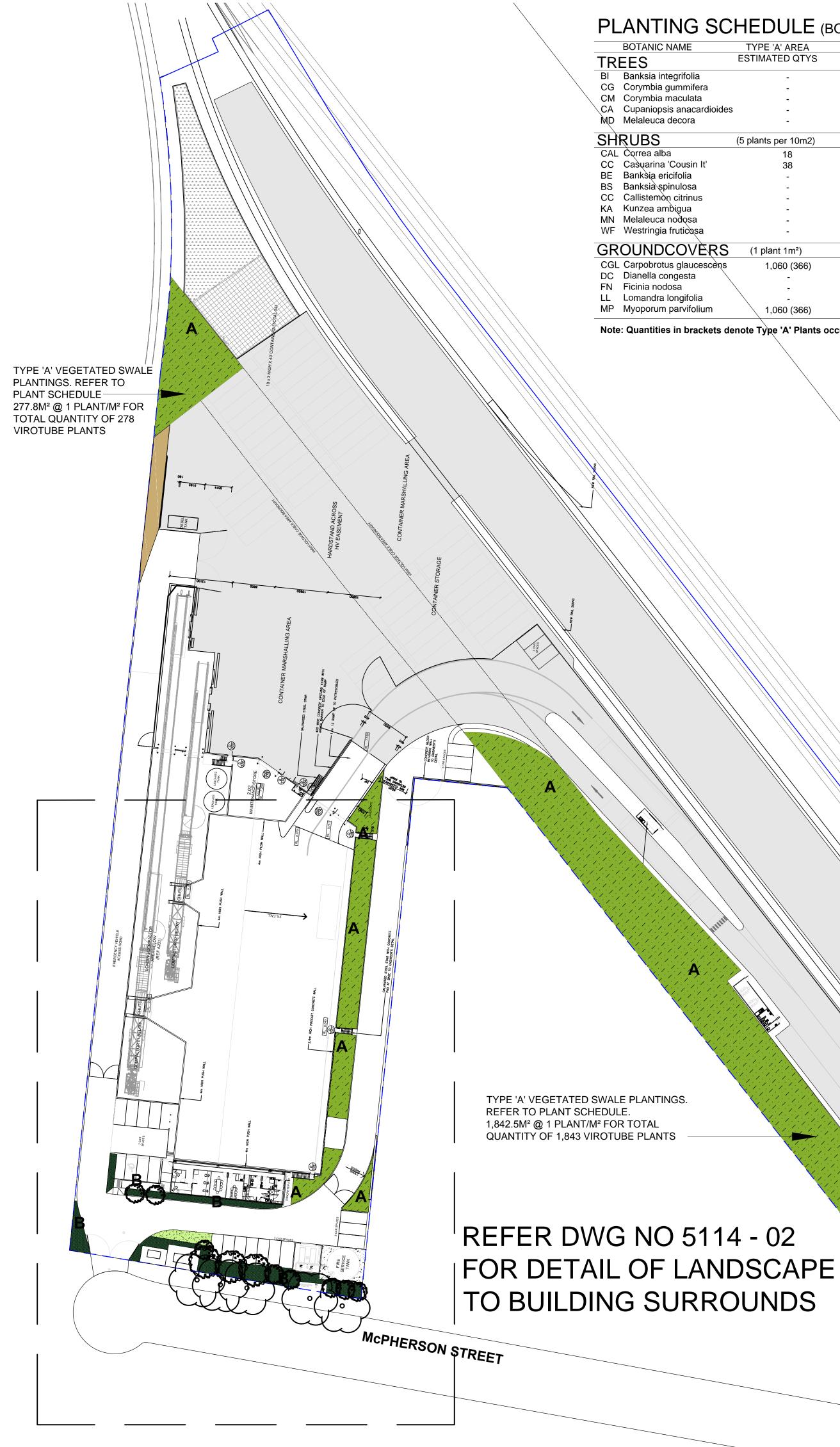


Page:Page 22 of 22Document:PLA-NSW-XXX-XXX-1Date:23.06.2016

PLAN

Landscape and Vegetation Management

Appendix A Landscape Plan



	TYPE 'A' AREA	TYPE 'B' AREA	COMMON NAME	MATURE HEIGHT	CONTAINER	APPROXIMATE
	ESTIMATED QTYS	ESTIMATED QYTS		& SPREAD	SIZE	PLANT DENSITIES
ia	-	2	Coast Banksia	5.0 x 4.0m	45L	As shown
fera	-	1	Red Bloodwood	8.0 x 5.0m	25L	As shown
ata	-	2	Spotted Gum	12.0 x 6.0m	25L	As shown
cardioides	-	2	Tuckeroo	6.0 x4.0mm	45L	As shown
a	-	4	White Feather Myrtle	8.0 x 4.0m	45L	As shown
	(5 plants per 10m2)					
	18	-	White Correa	1.0 x 1.0m	140mm	As shown
n It'	38	-	Prostrate She Oak	1.0 x 1.0m	140mm	As shown
	-	7	Heath Banksia	3.0 x 2.0m	200mm	As shown
а	-	11	Hairpin Banksia	1.5 x1.5m	200mm	As shown
us	-	8	Crimson Bottlebrush	2.0 x 2.0m	200mm	As shown
	-	11	Tick Bush	2.0 x 2.0m	200mm	As shown
а	-	6	Ball Honeymyrtle	2.0 x 2.0m	200mm	As shown
sa	-	21	Coast Rosemary	1.5 x 1.5m	140mm	As shown
/ÈRS	(1 plant 1m ²)					
icescens	1,060 (366)	-	Coastal Pigface	N/A	Viro-Tube	1 / 1 sq metre
a 🔪	-	365	Flax Lily	N/A	Viro-Tube	1/1 sq metre
	-	9	Club Rush	N/A	Viro-Tube	1/1 sq metre
olia	-	12	Mat Rush	N/A	Viro-Tube	1/1 sq metre
olium	1,060 (366)	-	Creeping Boobialla	N/A	Viro-Tube	1 / 1 sq metre

Note: Quantities in brackets denote Type 'A' Plants occurring on Drawing No 5114 - 02 only, to be planted at the density of 2 plants per sq.metre.



1.0. INITIAL PREPARATION: SHALL MEAN ALL PRELIMINARIES AND ALL PREPARATION WORKS AS NECESSARY. COMMENCEMENT OF WORK BY LANDSCAPE CONTRACTOR (HEREINAFTER REFERRED TO AS 'CONTRACTOR') SHALL BE DEEMED AS PROOF OF CONTRACTOR'S ACCEPTANCE OF EXISTING CONDITION OF SITE. NO WORK SHALL BE CARRIED OUT UNTIL ALL UNDERGROUND SERVICES AND AREAS OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROOF OF CONTRACTOR'S ACCEPTANCE OF EXISTING CONDITION OF SITE. NO WORK SHALL BE CARRIED OUT UNTIL ALL UNDERGROUND SERVICES AND AREAS OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROOF OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROOF OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROOF OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROVIDES AND AREAS OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROVIDES AND AREAS OF CONTAMINATED SOIL HAVE BEEN IDENTIFIED AND ACCURATELY LOCATED AND PROVIDES AN PEGGED BY CONTRACTOR. SHOULD CONTAMINATED SOIL BE ENCOUNTERED WORK IN THAT AREA SHALL BE STOP AND SUPERINTENDENT CONTACTED TO CONFIRM THE APPROPRIATE METHOD OF DEALING WITH THAT CONTAMINATION, PRIOR TO RECOMMENCEMENT OF WOR THIS ITEM SHALL INCLUDE ALL CARTAGE AND TIPPING FEES. OF MULCH OR LAWN.

OF THESE MATERIALS BE REQUIRED.

KEPT WATERED FOR DURATION OF CONTRACT

IRRIGATION CONTROLLER.

BUILDING'S TYPE 'B' LANDSCAPE EXTERNAL SPACES PROPOSED SYSTEM AND EQUIPMEN

LANDSCAPE MANAGEMENT NOTES

1.0. THE LANDSCAPE WORK UPON COMPLETION OF CONSTRUCTION SHALL BE ROUTINELY MAINTAINED TO KEEP THE PLANTING AREAS IN A VISUALLY PLEASING AND HEALTHY, VIGOROUS GROWING CONDITION AS SPECIFIED. ROUTINE MAINTENANCE TASKS SHALL INCLUDE REGULAR CHECKING OF TREEGUARDS, HAND WEEDING, ORGANIC FERTILISING, STAKE AND TIE ADJUSTMENT, PEST AND DISEASE CONTROL AND REMOVAL OF PRUNINGS. 2.0. MULCH TO PLANTING BEDS SHALL BE TOPPED UP TO MAINTAIN 75MM CONSTANT DEPTH USING ONLY THE SPECIFIED MATERIAL 3.0. REPLACEMENT PLANT MATERIAL SHALL BE INDENTICAL TO THE ORIGINAL SPECIFIED MATERIAL IN ALL RESPECTS. THE SPECIES IN THE PLANTING SCHEDULE ARE ENDEMIC FLORA SPECIES. IT IS RECOMMENDED THAT ALL NEW PLANTS ARE ROWN FROM LOCAL PROVENANCE PROPAGATION MATERIA

TEMPORARY EARTHWORK PROTECTION HYDROMULCHING SPECIFICATIONS EXTENT OF WORK

THE WORK INCLUDED IN THIS CONTRACT COMPRISES HYDROMULCHING OF BATTERS NO STEEPER THAN 1:3 WITH A SEEDMIX CONSISTING OF A COVER CROP APPROPRIATE TO SEASONAL TIMING AND SELECTED LOCALLY OCCURRING NATIVE SPECIES OF GRASSES. CONTRACTORS QUALIFICATIONS EACH TENDERER SHALL SUBMIT DOCUMENTARY EVIDENCE OF HIS PROVEN ABILITY TO CARRY OUT THIS TYPE OF WORK. SUCH EVIDENCE SHALL INCLUDE LIST OF SIMILAR PROJECTS SATISFACTORILY COMPLETED TOGETHER WITH A STATEMENT OF THE QUALIFICATION AND/OR EXPERIENCE OF THE PERSONNEL TO BE EMPLOYED ON THE WORKS. SITE PREPARATION MINIMAL DISTURBANCE OF EXISTING BATTERS IS PREFERRED. LIGHT CULTIVATION OF THE BANK SURFACE MAY BE FEASIBLE IN SOME AREAS. HYDROMULCHING THE APPLICATION OF HYDROMULCHING NATIVE SEED SHALL COMMENCE IMMEDIATELY AFTER THE SURFACE IS PREPARED APPLICATION RATES THE REQUIRED AREAS SHALL BE TREATED BY THE CONTRACTOR WITH THE FOLLOWING: A. NATIVE SEED 10KG PER HECTARE PLUS COVER CROP B. FERTILISER (IF APPLICABLE) 250KG PER HECTARE C. WOOD FIBRE MULCH (DYED GREEN) 2 TONNES PER HECTARE D. POLYMER BINDER (LIQUID) ENVIROTACK (POWDER) MAXIMUM 250 LITRES PER HECTARE 40KG- 60KG PER HECTARE THE SEED AND FERTILISER RATES ARE A REPRESENTATIVE SAMPLE ONLY OF THE QUANTITIES THAT SHOULD BE APPLIED PER HECTARE. LOCALLY OCCURRING SEED MIX TO NOMINALLY CONSIST OF THEMEDA SPP, DANTHONIA SPP AND POA SPP. SEED, FERTILISER, WOOD FIBRE MULCH, WATER AND BINDER SHALL BE THOROUGHLY MIXED TOGETHER WITH WATER TO PROVIDE A SLURRY AND THEN APPLIED UNDER A PRESSURE ONTO THE AREA TO BE TREATED BY MEANS OF HYDROMULCHING EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE AND BY OPERATORS TRAINED IN THE USE OF THIS EQUIPMENT.

TREE PROTECTION NOTES

INDIVIDUAL TREES CLOSE TO CONSTRUCTION ACTIVITY PROTECT TREES LIABLE TO DAMAGE WITH PROTECTIVE ENCLOSURES FOR THE DURATION OF CONSTRUCTION WORKS AND REMOVE WHEN DIRECTED. ENCLOSURES SHALL CONSIST OF F62 REINFORCING MESH 1800mm HIGH WIRED TO 2400mm LONG STAR STEEL PICKETS, DRIVEN 600mm INTO GROUND AT 1800mm CENTRES NO CLOSER THAN 1000mm FROM A TREE TRUNK

<u>GROUPS OF TREES AND SHRUBS NEAR CONSTRUCTION ACTIVITY</u> VISUALLY PROTECT GROUPED TREES AND SHRUBS WITH STAR STEEL PICKETS DRIVEN AT 2 METRE CENTRES SUPPORTING ORANGE PLASTIC SAFETY MESH

LANDSCAPE CONSTRUCTION SPECIFICATION

ALL WEEDS AND GRASS SHALL BE ERADICATED FROM PROPOSED LAWN AND GARDEN AREAS BY USE OF 'ROUNDUP' HERBICIDE APPLIED AS PER MANUFACTURER'S SPECIFICATIONS. ANY WEEDS SUCH AS OXALIS, ONION WEED OR NUT GRASS SHALL BE COMPLETELY REMOVED, TOGETHER WITH SURROUNDING SOIL. NO FURTHER WORK SHALL BE CARRIED OUT UNTIL ALL WEEDS ARE DEAD. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL FROM SITE OF ALL RUBBISH AND DEBRIS ENCOUNTERED IN AREAS TO BE LANDSCAPED AND ALL VEGETATION NOT SPECIFIED AS TO BE RETAINED.

2.0. EXCAVATION AND EARTHWORKS: SHALL MEAN ALL EXCAVATION AND EARTHWORKS AS NECESSARY. CONTRACTOR SHALL ALLOW TO EXCAVATE PROPOSED PLANTED AREAS TO 150mm DEPTH OR OTHERWISE AS NECESSARY TO ACHIEVE LEVELS AND GRADES THAT ALLOW FOR ADDITION OF MATERIALS AS DETAILED TO BRING WORKS TO PROPOSED FINISHED LEVELS. TAKE CARE NOT TO DAMAGE ROOTS OF ANY TREES TO BE RETAINED. APPROVED EXCAVATED SITE TOPSOIL SHALL BE STOCKPILED IN APPROVED LOCATION ON SITE FOR POSSIBLE REUSE IN PLANTED AREAS. CONTRACTOR SHALL NOT ALLOW TO REMOVE ANY EXCAVATED MATERIAL FROM SITE. SUCH WORK IF REQUIRED SHALL BE BY BUILDER. CONTRACTOR SHALL ENSURE THAT FINISHED LEVELS OF PLANTED AREAS FINISH 30mm (AFTER ALLOWING FOR SETTLEMENT) BELOW LEVEL OF ADJACENT ROADBASE PAVING, RETAINING WALLS, KERBS OR OTHER CONTAINING EDGE, PRIOR TO INSTALLATION 3.0. SOIL PREPARATION & INSTALLATION: SHALL MEAN PREPARATION OF ALL PLANTED AREAS PLUS INSTALLATION OF TOPSOIL MIX AND SOIL CONDITIONER AS NECESSARY. CONTRACTOR SHALL ADVISE LANDSCAPE ARCHITECT IN WRITING IF CONDITION OF SOIL EXISTING OR PROVIDED FOR USE IN PLANTED AREAS IS NOT DEEMED SATISFACTORY FOR PURPOSE INTENDED. SHOULD CONTRACTOR BE SATISFIED WITH QUALITY OF SOIL AVAILABLE/PROVIDED CONTRACTOR SHALL RIP SUB-GRADE IN ALL PLANTED AREAS AND THOROUGHLY CULTIVATE TO A DEPTH OF 200mm. ADVISE SUPERINTENDENT IN WRITING IF CONTRACTOR DOES NOT CONSIDER RESULTING SOIL TO BE SUITABLE TO RECEIVE AND ESTABLISH PLANTS. DEAD GRASS ALREADY PRESENT IN THESE AREAS SHALL BE DUG IN AS ADDITIONAL COMPOST. CONTRACTOR SHALL EXCAVATE OR SHALL USE PREVIOUSLY STOCKPILED SITE TOPSOIL AS FILL MATERIAL, AS NECESSARY TO BRING GARDEN AND LAWN AREAS TO REQUIRED LEVELS, ALLOWING FOR ADDITIONAL MATERIAL AS SPECIFIED. FOLLOWING PREPARATION INSTALL 150mm CONSOLIDATED DEPTH (THAT IS, AS NECESSARY TO ALLOW FOR FUTURE SETTLEMENT) OF APPROVED FREE

DRAINING ORGANIC TOPSOIL MIX UTILISING PREVIOUSLY STOCKPILED SITE TOPSOIL. ALLOW FOR SUPPLY, INSTALLATION AND THOROUGH CULTIVATION (INTO 100mm DEPTH OF SOIL BENEATH) OF 50mm DEPTH OF 'BOTANY MIX' SOIL CONDITIONER (EQUAL TO THAT AS AVAILABLE FROM AUSTRALIAN NATIVE LANDSCAPES ('ANL') PH: 9450 1444) IF NECESSARY (TO SUPERINTENDENT'S APPROVAL) TO ALL GENERAL PLANTED AREAS. MATERIAL IMPORTED FOR LANDSCAPING OR ASSOCIATED SITE WORKS MUST MEET THE FOLLOWING CRITERIA: LANDSCAPE MATERIAL AND/OR MATERIAL FOR SITE WORKS - THE MATERIAL IS NATURAL MATERIAL (CLAY, GRAVEL, SAND, SOIL, ROCK) AND HAS BEEN PURCHASED FROM A LICENSED LANDSCAPE SUPPLIER, A LICENSED SAND, SOIL AND GRAVEL SUPPLIER OR A LICENSED QUARRY. A CERTIFICATE VALIDATING THE QUALITY OF THE SUPPLIED MATERIALS FROM THE LICENSED LANDSCAPE SUPPLIER, LICENSED SAND AND SOIL AND GRAVEL SUPPLIER OR A LICENSED BY THE LANDSCAPE CONTRACTOR.

CONTRACTOR SHALL STATE CUBIC METRE VOLUME OF SOIL CONDITIONER ALLOWED FOR IN TENDER AND SHALL CONFIRM WITH SUPERINTENDENT REQUIREMENT FOR SOIL CONDITIONER PRIOR TO COMMENCEMENT OF WORK. TOPSOIL MIX INSTALLED INTO PLANTED AREAS SHALL BE LIGHTLY CONSOLIDATED BY FOOT OR BY APPROVED LIGHTWEIGHT ROLLER IN LAYERS SO AS TO MINIMISE DEGREE OF FUTURE SETTLEMENT. NO WORK SHALL BE CARRIED OUT ON PLANTED AREAS WHILST SOIL IS WET, TO AVOID COMPACTION OF THESE AREAS. ALL LARGE STONES, PIECES OF TIMBER AND OTHER DEBRIS SHALL BE RAKED UP FROM PROPOSED PLANTED AREAS AND TRANSFERRED TO SEPARATE STOCKPILE, TO BE REMOVED FROM SITE BY CONTRACTOR AT APPROVED INTERVALS. PREPARED SOIL SHALL BE ALLOWED TO CURE PRIOR TO INSTALLING PLANTS. ENSURE THAT ALL PLANTED AREAS DRAIN SATISFACTORILY. IF DRAINAGE PROBLEMS EXIST WITH REGARD TO EXISTING SUB-GRADE CONDITIONS, CONTRACTOR SHALL ADVISE SUPERINTENDENT & AWAIT FURTHER INSTRUCTIONS. COMPLETE SOIL PREPARATION SHALL BE TO APPROVAL OF LANDSCAPE ARCHITECT. CONTRACTOR SHALL PROVIDE WITH TENDER PER CUBIC METRE RATES FOR SUPPLY AND INSTALLATION (INCLUDING CULTIVATION) OF SOIL CONDITIONER AND ORGANIC TOPSOIL MIX SHOULD ADDITIONAL QUANTITIES

4.0. PLANTING, FERTILISING AND STAKING: SHALL MEAN ALL PLANTING AND FERTILISING WORKS AS NECESSARY. PLANTS SHALL BE AS DETAILED ON LANDSCAPE PLAN AND IN SCHEDULE AND TRUE TO SPECIES OR CULTIVAR AS NAMED. PLANTS SHALL BE WELL GROWN, HEALTHY, NOT SOFT OR FORCED, NOR ROOT-BOUND. PLANT DEVELOPMENT SHALL BE OF REASONABLE SIZE, PROPORTIONATE TO SIZE OF CONTAINER AND HABIT OF PLANT, AND IN VIGOROUS GROWTH. ALL PLANTS SHALL BE THOROUGHLY WATERED IMMEDIATELY PRIOR TO PLANTING AND PLANT SETOUT APPROVED BY LANDSCAPE ARCHITECT IN WRITING PRIOR TO PLANTING. PLANTING HOLES SHALL BE DUG TO DEPTH AND TO SLIGHTLY LARGER THAN WIDTH OF PLANT ROOT BALL WHICH THEY ARE TO RECEIVE. BASE OF PLANTING HOLE SHALL BE LOOSENED TO A DEPTH OF 75mm AND SURFACE DRESSING OF SLOW RELEASE FERTILISER (EQUAL TO 'OSMOCOTE' OR 'NUTRICOTE' 8-9 MONTH RELEASE FORMULATION, LOW PHOSPHORUS AS APPROPRIATE), ADDED TO HOLE TO MANUFACTURER'S RECOMMENDATIONS AND WORKED INTO LOOSENED SOIL. HOLE SHALL BE FILLED WITH WATER, ALLOWED TO DRAIN, AND THEN PLANT INSTALLED IN HOLE. ROOT BALL SHALL THEN BE BACK-FILLED WITH FRIABLE TOPSOIL (AES) AND ON COMPLETION OF PLANTING OPERATION BASE OF EACH STEM SHALL FINISH FLUSH WITH TOP SURFACE OF SOIL. DISH SHALL BE FORMED AROUND BASE OF EACH PLANT TO AID IN WATER ABSORPTION. CONTRACTOR SHALL ENSURE THAT 'POND' IS NOT DUG INTO CLAY SUB-GRADE MATERIAL AND THAT PLANTING HOLES ARE FREE DRAINING. SHOULD CONTRACTOR NOT BE SATISFIED WITH QUALITY OF EXISTING SOIL INTO WHICH PLANTS ARE TO BE INSTALLED THEN CONTRACTOR SHALL IMMEDIATELY ADVISE SUPERINTENDENT AND AWAIT FURTHER INSTRUCTIONS. ONCE INSTALLED, ALL PLANTS SHALL BE WELL WATERED AND

IMBER EDGING: SHALL MEAN SUPPLY AND INSTALLATION OF 150 x 25mm SAWN CCA-TREATED PINEWOOD EDGING (OF APPROPRIATE GRADE FOR IN-GROUND USE) TO JUNCTIONS BETWEEN LAWN AND GARDEN AREAS. PEG EDGING AT NOMINAL 3000mm CENTRES AND CHANGES OF DIRECTION WITH 38 x 38 x 500mm LONG SAWN HARDWOOD PEGS. POINTED AT ONE END. TOP OF PEGS SHALL FINISH 25mm BELOW TOP OF EDGING, AND TWO 50mm LONG GALVANISED NAILS USED PER PEG TO FIX EDGINGS TO PEGS. ALL TIMBER SHALL BE STRAIGHT, SOUND, FREE FROM SPLITS AND TWISTS AND OF NOM. EVEN THICKNESS THROUGHOUT. NEATLY MITRE ENDS OF TIMBER AT CHANGES OF DIRECTION. FINISH TOP OF EDGING 30mm ABOVE SOIL LEVEL IN PLANTED AREAS SO AS TO FINISH FLUSH WITH SURFACE OF ADJACENT FINISHES. 6.0. MULCHING: SHALL MEAN COMPLETE MULCHING OF ALL PLANTED AREAS. FOLLOWING COMPLETION OF PLANTING, ALL GARDEN AREAS SHALL RECEIVE NOM. 75mm DEPTH OF APPROVED NATIVE WOOD CHIP MULCH (EQUAL TO THAT AVAILABLE FROM A USTRALLAM NATIVE LANDSCAPES 'ANL' PH: 9450 1444. MULCH SHALL COVE DOWN TO FINISH FLUXIBUSH WITH CONTAINING EDGES AND SHALL BE REDUCED TO 25mm THICK AROUND BASE OF STEM OF EACH PLANT. TO BANKS STEEPER THAN 1 IN 3 INSTALL JUTE MESH SOIL SAVER BLANKET IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

7.0. TURE: SHALL MEAN COMPLETE TURFING OF AN AREA AS INDICATED ON PLAN. AREA TO BE TURFED SHALL BE PREPARED AES AND THEN LIGHTLY RAKED TO REMOVE ANY STONES, MOUNDS OR TROUGHS FROM THE SURFACE, AND TO ALLOW URF WHEN INSTALLED TO FINISH FLUSH WITH CONTAINING EDGE. SURFACE OF SOIL SHALL BE MOISTENED PRIOR TO INSTALLING TURF. TURF SHALL BE AS INDICATED ON THE DRAWING PLANS AND SECTIONS ALL TURF SHALL BE LAID IN STRETCHER BOND WITH BUTTED JOINTS. THOROUGHLY WATER TURF ON COMPLETION OF INSTALLATION AND MAINTAIN WATERING FOR DURATION OF CONTRACT. DO NOT FERTILISE LAWN AREA. 7.0. AUTOMATIC DRIP IRRIGATION SYSTEM: A FULLY AUTOMATIC WATER EFFICIENT SUBSOIL DRIP IRRIGATION SYSTEM, WITH MANUAL OVERRIDE, SHALL BE INSTALLED TO ALL LANDSCAPE TYPE 'B' AREAS ALONG THE MCPHERSON STREET FRONTAGE AND PUTRESCIBLE AREA FRONTAGES TO WATER ALL PLANTING BEDS. THE SYSTEM SHALL COMPLY WITH ALL SYDNEY WATER REQUIREMENTS AND RELEVANT AUSTRALIAN STANDARDS, SPECIFICALLY AS3500. THE IRRIGATION SYSTEM SHALL UTILISE HARVESTED RAINWATER AS ITS PRIMARY WATER SOURCE. A STAND ALONE CONTROLLER CABINET SHALL BE INSTALLED WITHIN THE INTERIOR OF THE BUILDING AS DIRECTED BY THE SUPERINTENDENT THE IRRIGATION CONTRACTOR (D&C) SHALL SUBMIT DRAWINGS AND SCHEDULES SHOWING THE LAYOUT AND DETAILS OF THE IRRIGATION SYSTEM TO THE SUPERINTENDENT PRIOR TO THE COMMENCEMENT OF LANDSCAPE WORKS. GENERALLY THE AUTOMATIC WATER EFFICIENT SUBSOIL DRIP IRRIGATION SYSTEM SHALL COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS SUBSOIL DRIPPERS FOR PLANTING BEDS: DRIPLINE TUBE SHALL BE 13MM I.D PRESSURE COMPENSATION LOW DENSITY BROWN POLYETHYLENE WITH AN EMITTER DISCHARGE RATE OF 2 LITRES PER HOUR. DRIPLINES SHALL BE PLACED 500MM APART AND EMITTERS SHALL BE PLACED 400MM APART. RECOMMENDED OPERATION PRESSURE RANGE SHALL BE 100 TO 300 KPA. DRIPLINES FOR GARDEN AREAS TO BE INSTALLED UNDER MULCH LAYER.

AUTOMATIC CONTROL VALVES (USED TO CONTROL SEPARATE IRRIGATION ZONES VIA CABLES IN CONDUITS UNDER PAVING): 24 V SOLENOID ACTUATED HYDRAULIC VALVES WITH FLOW CONTROL AND A MAXIMUM OPERATING PRESSURE RATING OF 1 MPA. PROVIDE A STAINLESS STEEL BONNET HOLDING DOWN BOLTS AND INTERNAL METAL PARTS OF STAINLESS STEEL, ARE TO BE SERVICED WITHOUT REMOVAL FROM THE LINE. A GATE VALVE SHALL BE PROVIDED OF THE SAME SIZE IMMEDIATELY UPSTREAM OF EACH AUTOMATIC CONTROL VALVE. HOUSE BOTH VALVES IN A HIGH IMPACT PLASTIC VALVE BOX WITH HIGH IMPACT PLASTIC COVER AT FINISHED GROUND LEVEL. SUPPORT THE BOX ON BRICKS AT EACH SIDE PRESSURE REGULATING VALVES: PROVIDE PRESSURE REGULATING VALVES AT WATER SUPPLY OFF TAKE POINT. ADJUSTABLE AT BETWEEN 100 - 700 KPA. PROVIDE AN 800 M FILTER SIZED TO SUIT THE FLOW IMMEDIATELY UPSTREAM FROM THE PRESSURE REGULATING VALVE AND PROVIDE GATE VALVES UPSTREAM FROM THE FLITER AND DOWNSTREAM FROM THE PRESSURE REGULATING VALVE. MOUNT THE ASSEMBLY IN AN ACCESSIBLE POSITION IN A VALVEBOX, ACCESS PIT OR ADJACENT BUILDING AND PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH SYDNEY WATER REGULATIONS. RAINWATER SENSORS: PROVIDE A RAINWATER SENSOR LOCATED IN AN UNCOVERED AREA TO PREVENT IRRIGATION SYSTEM WATERING TO LANDSCAPE PLANTING AREAS DURING PERIODS OF RAIN. CONNECT THE RAINWATER SENSOR TO THE CONTROL WIRES CONNECT THE AUTOMATIC CONTROL VALVES AND RAINWATER SENSORS TO THE CONTROLLER WITH DOUBLE INSULATED UNDERGROUND CABLES LAID ALONGSIDE PIPING WHERE POSSIBLE. LAY INTERTWINED FOR THEIR FULL

LENGTH WITHOUT JOINTS EXCEPT AT VALVES, SENSORS AND BRANCHES OFF COMMON WIRES. PROVIDE WATERPROOF CONNECTORS. PROVIDE EXPANSION LOOPS AT CHANGES OF DIRECTION AND AT JOINTS. GENERAL: PROVIDE MANUAL CYCLE AND INDIVIDUAL STATION OPERATION, MANUAL ON/OFF OPERATION OF IRRIGATION WITHOUT LOSS OF PROGRAM, 240 V INPUT AND 24 V OUTPUT CAPABLE OF OPERATING 2 CONTROL VALVES SIMULTANEOUSLY, 24 HOUR BATTERY PROGRAM BACKUP AND POWER SURGE PROTECTION. ELECTRICAL CONNECTION: PROVIDE 240 V SUPPLY, WITH AN ISOLATING SWITCH AT THE CONTROLLER. ZONE ALLOCATIONS: THE PLANTING BEDS SHALL HAVE SEPARATE CONTROLLERS WITH NOMINAL ALLOWANCE OF 6 ZONES ALLOCATED TO THE VARIOUS PLANTING AREAS LOCATED ALONG MCPHERSON STREET AND TO THE FULL EXTENT OF THE INSTALLATION: ENSURE THAT ALL PIPE WORK IS ADEQUATELY COVERED WITH PLASTIC AND TAPE DURING INSTALLATION, TO ENSURE THAT NO SOIL OR OTHER MATERIAL CAN ENTER AND BLOCK PIPES. CONTRACTOR SHALL ENSURE THAT ALL GARDEN AND LAWN AREAS AS INDICATED ABOVE ARE SATISFACTORILY IRRIGATED, ENSURING THAT SOIL IS KEPT MOIST, NOT WET, TO THE APPROVAL OF LANDSCAPE ARCHITECT. CONTRACTOR SHALL CHECK PRESSURE OF WATER SUPPLY ON

SITE AND ENSURE THAT THIS IS TAKEN INTO ACCOUNT FOR BOTH TENDER AND FINAL DESIGN/INSTALLATION. NOTE: MINOR ADJUSTMENTS TO SYSTEM MAY BE REQUIRED ON SITE, TO OVERCOME ANY SITE IDIOSYNCRACIES. WARRANTY: TWELVE MONTHS WARRANTY ON IRRIGATION SYSTEM SHALL BE PROVIDED BY CONTRACTOR, COVERING BOTH MATERIALS AND LABOUR. CONTRACTOR SHALL FULLY DETAIL AND SUBMIT TOGETHER WITH TENDER AN OUTLINE OF 8.0. COMPLETION: PRIOR TO REQUESTING PRACTICAL COMPLETION, CONTRACTOR SHALL MAKE GOOD ANY DAMAGED AREAS. CONTRACTOR SHALL LEAVE AREAS OVER WHICH CONTRACTOR HAS WORKED IN A TIDY CONDITION AND TO SATISFACTION OF SUPERINTENDENT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL FROM SITE OF ALL UNWANTED MATERIAL AND DEBRIS RESULTING FROM THIS WORK.

9.0. MAINTENANCE: CONTRACTOR SHALL MAINTAIN SITE FOR A PERIOD OF 26 WEEKS FROM PRACTICAL COMPLETION. CONTRACTOR SHALL STATE IN TENDER EXACT NUMBER OF DAYS, AND INTERVALS BETWEEN, THAT HAVE BEEN ALLOWED TO MAINTAIN THIS SITE, AND SHALL KEP A LOG BOOK OF MAINTENANCE WORKS. TIMING OF MAINTENANCE WORKS SHALL BE SPREAD REGULARLY OVER MAINTENANCE PERIOD. DUTIES SHALL INCLUDE, BUT NOT BE LIMITED TO, WATERING, REINSTATING MULCH AS NECESSARY TO MAINTAIN SPECIFIED DEPTHS, REMOVAL OF ANY WEED GROWTH OR RUBBISH, REPLACING FAILED PLANTS (AT NO ADDITIONAL COST TO CLIENT UNLESS DUE TO VANDALISM OR SOME OTHER REASON BEYOND THE CONTRACTOR'S CONTROL, AT DISCRETION OF SUPERINTENDENT), SPRAYING OF PLANTS AS NECESSARY TO COMBAT INSECTS OR DISEASE AND ADJUSTING STAKING TO PLANTS.

AFTER CARE MAINTENANCE_ WHERE POSSIBLE OR PRACTICABLE WATERING OF THE SEEDED AREA SHOULD BE CARRIED OUT. IN THIS SITUATION THE WOOD-FIBRE SHOULD BE KEPT MOIST UNTIL A SATISFACTORY GERMINATION OCCURS. AFTER THIS, SUFFICIENT WATERING MUST BE KEPT UP UNTIL THE NATIVE PLANTS HAVE REACHED A STAGE WHERE THEY CAN SURVIVE IN THEIR OWN RIGHT.

NOTE:

COMMENCEMENT OF WORK.

PLANTS ARE LIVING ORGANISMS. IF THEY ARE MAINTAINED IN A HEALTHY CONDITION THEY SHALL CONTINUE TO GROW. IT WILL THEREFORE BE NECESSARY TO REGULARLY MONITOR THE GROWTH OF THE PLANTS SO THAT THEY CAN BE PRUNED OR OTHERWISE ATTENDED TO SO THAT THEY DO NOT OUTGROW THEIR ALLOTTED SPACE. EXACT LOCATION OF SITE BOUNDARIES ARE TO BE CONFIRMED ON SITE PRIOR TO

WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED MEASUREMENTS. ALL DIMENSIONS AND LEVELS SHALL BE VERIFIED BY CONTRACTOR ON SITE. CONTRATOR SHALL OBTAIN LANDSCAPE ARCHITECT'S WRITTEN APPROVAL OF INITIAL SETOUT PRIOR TO COMMENCEMENT OF WORK. IF IN DOUBT, CONTACT LANDSCAPE ARCHITECT.

ANY BATTER GREATER THAN 1 IN 3 SHALL BE STABILISED BY APPROVED GEOFABRIC OR OTHER EROSION CONTROL MEASURE, TO SATISFACTION OF LANDSCAPE ARCHITECT

FINAL PLANT SIZES MAY BE ADJUSTED AS NECESSARY TO SUIT AVAILABILITY OF PLANT SPECIES AT TIME OF IMPLEMENTATION AND FINAL PROJECT BUDGET. SHOULD PROPOSED TREE LOCATION HAVE THE POTENTIAL TO INTERFERE WITH EXISTING OR PROPOSED UTILITIES, CONTRACTOR SHALL ADVISE LANDSCAPE ARCHITECT AND AWAIT INSTRUCTIONS PRIOR TO PROCEEDING.

LEGEND



'SIR WALTER' SOFT LEAF **BUFFALO TURF TO OFFICE** FRONTAGE AND NATURE STRIP. REFER SPECIFICATION.

TYPE 'A' VEGETATED BANK PLANTING. **REFER PLANT SCHEDULE AND** SPECIFICATIONS. DRIP **IRRIGATION NOT REQUIRED.**

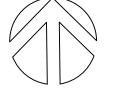


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TYPE 'B' PLANTING BEDS WITH DRIP **IRRIGATION. REFER PLANT** SCHEDULE AND SPECIFICATIONS

EXISTING TREES TO BE RETAINED AND PROTECTED DURING CONSTRUCTION

PLANTING BED TIMBER EDGING AS SPECIFIED





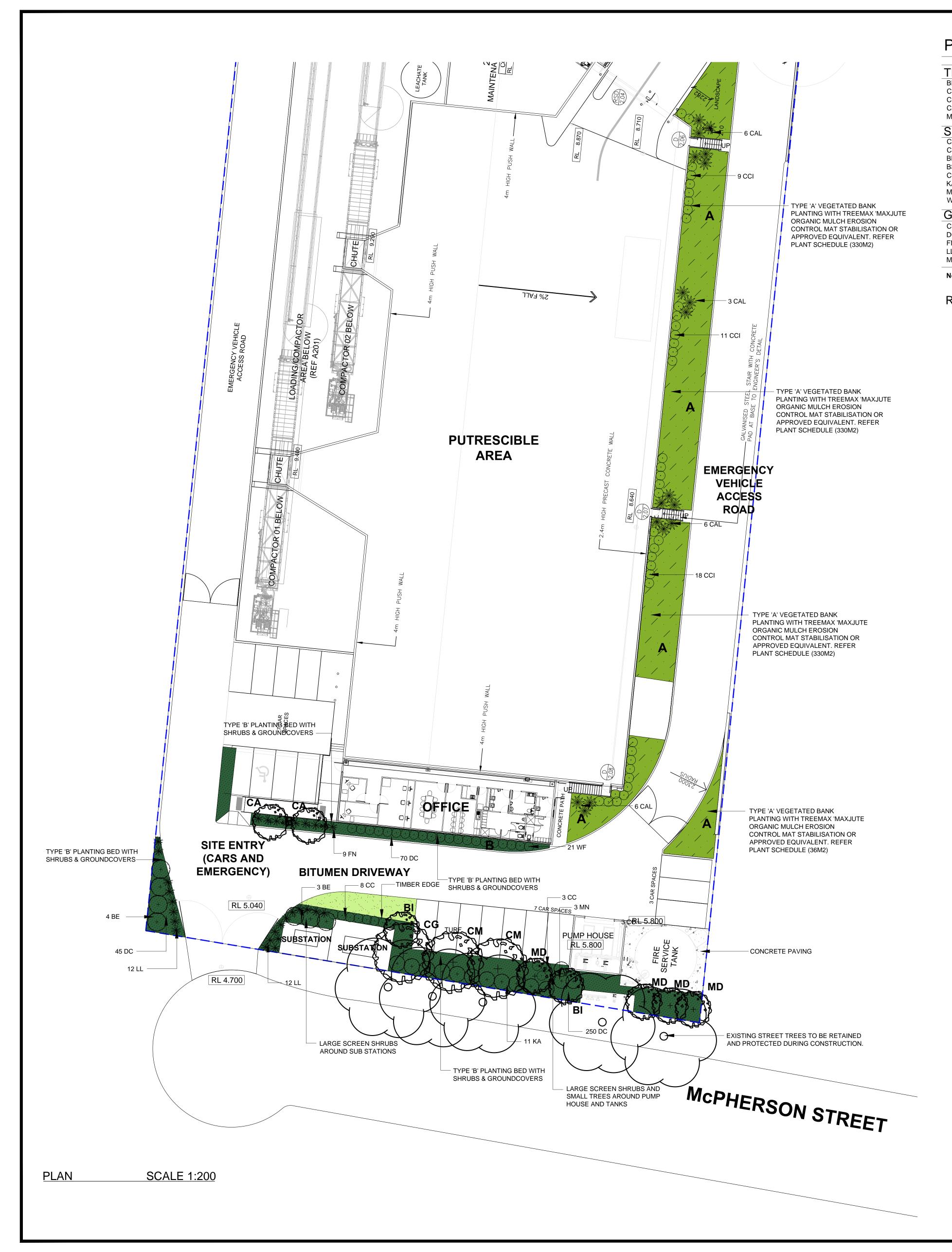
MAGNETIC NORTH

PROJECT NORTH

F	AS BUILT		28
E	GROUNDCOVER REDUCT	IONS	02
D	PLANTING REDUCTIONS		14
С	ISSUED FOR APPROVAL		10
В	ISSUED FOR APPROVAL		26
А	FOR REVIEW AND DISCU	ISSION	15
ISSUE	DESCRIPTION		D
	er Glass & Landscape A Environmenta Pool Desi 69 Christie Street, St Leon Phone (02) 9906 2727 Fax Email: design@peterg Web: www.petergla	rchitects I Planners gners nards NSW 2065 5 (02) 9906 4470 glass.com.au	te
client LIPN	/IAN PTY LTD	LIPMAN	N
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LAN	DSCAPE SITE	PLAN	

5114 - 0	1 AS BUILT -
DRAWING NUMB	ER IS
JOB NUMBER	5114
DATE	15/05/2015
CHECKED	PL
DESIGNED/DRAWN	PL/CW
SCALE	1:500 @ B1 / 1:1250 @ A3





PLANTING SCHEDULE (BOTH DRAWINGS)

	BOTANIC NAME	TYPE 'A' AREA	TYPE 'B' AREA	COMMON NAME	MATURE HEIGHT	CONTAINER	APPROXIMATE
TR	EES	ESTIMATED QTYS	ESTIMATED QYTS		& SPREAD	SIZE	PLANT DENSITIES
BI	Banksia integrifolia	-	2	Coast Banksia	5.0 x 4.0m	45L	As shown
CG	Corymbia gummifera	-	1	Red Bloodwood	8.0 x 5.0m	25L	As shown
CM	Corymbia maculata	-	2	Spotted Gum	12.0 x 6.0m	25L	As shown
CA	Cupaniopsis anacardioides	-	2	Tuckeroo	6.0 x4.0mm	45L	As shown
MD	Melaleuca decora	-	4	White Feather Myrtle	8.0 x 4.0m	45L	As shown
SH	RUBS	(5 plants per 10m2)					
CAL	Correa alba	18	-	White Correa	1.0 x 1.0m	140mm	As shown
CC	Casuarina 'Cousin It'	38	-	Prostrate She Oak	1.0 x 1.0m	140mm	As shown
BE	Banksia ericifolia	-	7	Heath Banksia	3.0 x 2.0m	200mm	As shown
BS	Banksia spinulosa	-	11	Hairpin Banksia	1.5 x1.5m	200mm	As shown
CC	Callistemon citrinus	-	8	Crimson Bottlebrush	2.0 x 2.0m	200mm	As shown
KA	Kunzea ambigua	-	11	Tick Bush	2.0 x 2.0m	200mm	As shown
MN	Melaleuca nodosa	-	6	Ball Honeymyrtle	2.0 x 2.0m	200mm	As shown
WF	Westringia fruticosa	-	21	Coast Rosemary	1.5 x 1.5m	140mm	As shown
GR	OUNDCOVERS	(1 plant 1m ²)					
CGL	Carpobrotus glaucescens	1,060 (366)	-	Coastal Pigface	N/A	Viro-Tube	1 / 1 sq metre
DC	Dianella congesta	-	365	Flax Lily	N/A	Viro-Tube	1/1 sq metre
FN	Ficinia nodosa	-	9	Club Rush	N/A	Viro-Tube	1/1 sq metre
LL	Lomandra longifolia	-	12	Mat Rush	N/A	Viro-Tube	1/1 sq metre
MP	Myoporum parvifolium	1,060 (366)	-	Creeping Boobialla	N/A	Viro-Tube	1 / 1 sq metre
Note	e: Quantities in brackets de	enote Type 'A' Plants o	occurring on Drawing No	o 5114 - 02 only, to be plan	ted at the density of 2 pl	ants per sq.metre).

REFER DWG NO 5114 - 01 FOR LANDSCAPE SPECIFICATIONS

SPACE.

ARCHITECT.

ARCHITECT.



TYPE 'B'

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