NURSERY FACILITY

CONTENTS

1. NURSERY FACILITY

1.1 Extent of section

This document provides the Employer's requirements for the Contractor to remove, preserve and replant the trees that need to be preserved according to the National and Limpopo Province listings of protected species.

The document provide general specifications for the removal and replanting of trees but for special individual trees (such as the Baobab) the method of removal and replanting shall be designed by an arboreal specialist in conjunction with the Contractor to cater for specific Specie and site conditions.

1.2 Scope of work

The Contractor shall remove the trees that have been designated as such from the work areas before construction commences, move to a temporary nursery facility for preservation and provide support for maintaining the trees for the duration of the contract period so that they can be re-instated at designated areas as part of the Power Station Landscaping.

The scope includes the provision by the Contractor of specialist equipment to remove large trees, transport and the establishment of a nursery facility that will include the following:

- Clear and grub site.
- Construct security fence.
- Prepare soil to receive trees from site.
- Install irrigation system.
- Construct office, workshop and storage sheds as required.
- Provide access roads.

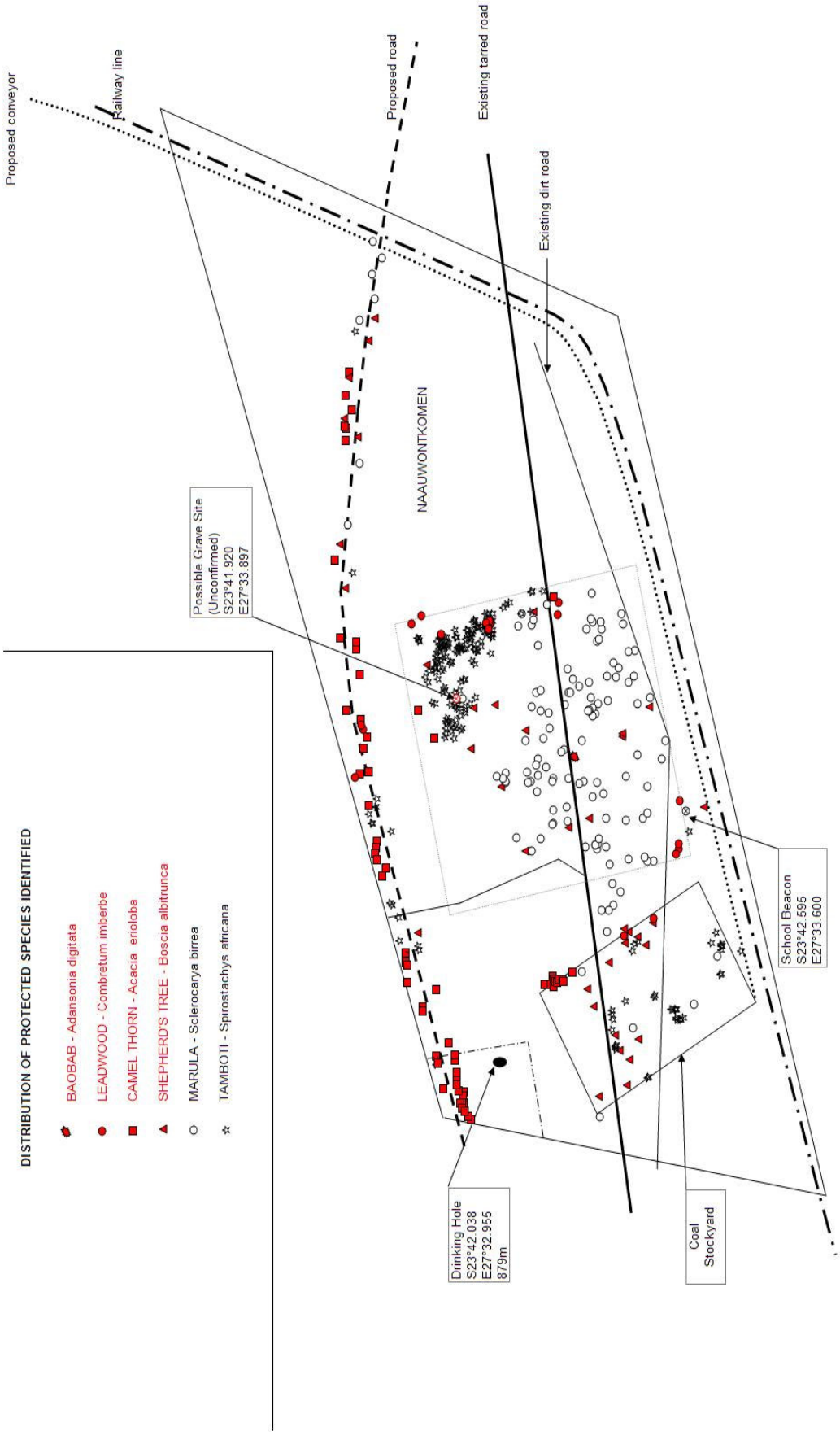
The following tree species are included for preservation:

Species	**Common Name**
Adansonia digitata	Baobab
Acacia erioloba	Camel thorn
Boscia albitrunca	Shepherd's tree
Combretum imberbe	Leadwood
Sclerocarya birrea	Marula
Spirostachys africana	Tamboti

All trees that needs preservation has been identified and their position established by Global Satellite Positioning. The number of trees to be preserved numbers about 500. The description of each tree, GPS position and approximate weight for transport purposes are given in Annexure A.

The distribution of the trees across the works site and road diversion is presented in Figure 1.

A general "Specification for Replanting Trees" are contained in Annexure B and a general "Specification for the care of Replanted Trees" are presented in Annexure C. Specific requirements for the trees at Alpha site are contained in Annexure D.


Proposed conveyor
Railway line
Proposed road
Existing tarred road
Existing dirt road
NAAUWONTKOMEN
Possible Grave Site
(Unconfirmed)
S23°41.920
E27°33.897
School Beacon
S23°42.595
E27°33.600
Drinking Hole
S23°42.038
E27°32.955
879m
Coal
Stockyard
DISTRIBUTION OF PROTECTED SPECIES IDENTIFIED
BAOBAB - Adansonia digitata
LEADWOOD - Combretum imberbe
CAMEL THORN - Acacia erioloba
SHEPHERD'S TREE - Boscia albitrunca
MARULA - Sclerocarya birrea
TAMBOTI - Spirostachys africana

1.3 TRANSPLANT TREES

Trees to be transplanted shall be removed and stored or transplanted to the locations shown on the plans in conformance with the provisions in these special provisions.

1.3.1 Planting of trees

When the trees are removed the trees shall be stored and maintained until transplanting can be completed. In special cases, the trees shall be planted at the new locations the same day the trees are removed.

1.3.2 Pruning of trees

Trees to be transplanted shall be pruned just prior to removing the trees. Pruning of trees to be transplanted shall include removal of broken or bruised branches 25 mm or larger in diameter, deadwood, and suckers. Pruning shall be in conformance with the provisions in Annexure B "Transplanting of trees" or the requirements of the arboreal specialist for individual trees. Tree seal compounds shall be used to cover pruning cuts on the advice of the arboreal specialist.

1.3.3 Disposal of prunings

Removed pruned materials shall be disposed of in conformance with the provisions in the Environmental Management Plan At the Contractor's expense prunings may be reduced to chips. Chipped materials shall be spread within the site those locations designated by the Engineer.

1.3.4 Methodology

The Contractor shall determine the methods to be used to transplant trees, including removing, transporting, storing if required, planting, guying, and maintaining the trees in conjunction with the arboreal specialist. The Contractor shall submit a proposed plan for this work, in writing, to the Engineer prior to the start of the work. The proposed plan shall include, but not necessarily be limited to, root ball size, method of root ball containment, and maintenance programs for each tree to be transplanted.

1.3.5 Stimulants

When trees are replanted, a root stimulant, approved by the Engineer on advice of the arboreal specialist, shall be applied to the roots of each tree in conformance with the printed instructions of the root stimulant manufacturer. A copy of the instructions shall be furnished to the Engineer before applying any stimulant. Root stimulant to be used shall be submitted to the Engineer not less than 1 week prior to the stimulant's intended use. Root stimulants not approved by the Engineer shall not be used.

1.3.6 Backfilling

Holes resulting from the removal of transplanted trees shall be backfilled during construction of the terrace, contractor's yards and roads. Soil from the surrounding area may be used to backfill these holes where the holes extend below the level of the construction. The backfill shall be graded to conform to the adjacent existing grade.

1.3.7 Watering

Watering basins shall be constructed around each transplanted tree and irrigation systems installed where directed according to the instructions of the arboreal specialist.

1.3.8 Site clearance

Clear and grub the site in accordance with the requirements of this specification and of the specifications of "2.Works Information: Terrace and Contractor's Yards."

1.3.9 Fencing

Construct a single 2.4 m fence and access gates around the nursery area in accordance with the requirements of the specifications of "7.Works Information: Security Fencing".

1.3.10 Preparation

Prepare the nursery area for replanting of the trees in accordance with the requirements of Annexure B and the arboreal specialist.

1.3.11 Facilities

Supply and construct the following facilities:

- Office 10 m^2
- Storage facilities 100 m^2
- Workshop 50 m^2

in accordance with the requirements of the specifications of "6.Works Information: Construction Ablutions, Canteen and Site Offices".

1.3.12 Access road

Construct a gravel access road from provincial road D1675 according to the standards for the extension of provincial road D2549 in accordance with the requirements of the specifications of "9.Works Information: Road Diversion and Bridge".

1.1.1 Payment

The contract lump sum price paid for transplanted trees shall include full compensation for furnishing all labour, materials, tools, equipment, and incidentals, and for doing all the work involved in transplanting trees, complete in place, as shown on the plans, as specified in these special provisions, and as directed by the Engineer and arboreal specialist. The lump sum shall include full compensation for all materials labour, tools equipment and incidental to construct the nursery facility. Lump Sum

2. ANNEXURE A: REGISTER OF TREES

PROJECT ALPHA

Protected Tree Species Register (NAAUWONTKOMEN)

Accuracy: 4-10 m

Survey Conducted between:
2006-09-14 and 2006-10-30

Surveyor: A. Bosman

Given weight ranges are a guide only and should not be used for pricing purposes at all!

The calculation of the weight of trees includes a number of assumptions:

1. All trees demonstrate a similarly equal cylindrical growth form if the branches could be clumped together at the apex of the tree.
2. The tree's volume remains equal from base to apex.
3. The roots form 50% of the tree's weight.
4. 30% of the tree's roots would be removed during excavation.
5. The approximate expected weight is calculated at 30% of total water holding capacity (78% v/v).
6. The water content and therefore the weight of the tree will increase towards the max. weight as the season progresses, depending on precipitation.

Species	Name	Code	Weight of wood	(Air dried)
Adansonia digitata	Baobab	AD	320kg/m³	
Acacia erioloba	Camel thorn	AC	1000kg/m³	
Boscia albitrunca	Shepherd's tree	BO	800kg/m³	
Combretum imberbe	Leadwood	CO	1200kg/m³	
Sclerocarya birrea	Marula	SC	560kg/m³	
Spirostachys africana	Tamboti	SP	960kg/m³	

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	Weight range (min - max) approx.	Aprox. expected weight	
AD001	S 23°42.288'	E 27°33.737'	8.5	13	R 294 666.67	40 644 kg	139 713 kg		70 365 kg	
AD002					R -	0 kg	0 kg		0 kg	
AC001	S 23°42.213'	E 27°34.156'	1.2	8	R 7 200.00	1 558 kg	2 773 kg		1 922 kg	
AC002	S 23°41.860'	E 27°33.794'	0.4	6	R 1 800.00	130 kg	231 kg		160 kg	
AC003	S 23°41.810'	E 27°33.864'	0.9	8	R 5 400.00	876 kg	1 560 kg		1 081 kg	
AC004	S 23°42.265'	E 27°33.189'	0.1	2	R 150.00	3 kg	5 kg		3 kg	
AC005	S 23°42.236'	E 27°33.171'	0.1	3	R 225.00	4 kg	7 kg		5 kg	
AC006	S 23°42.225'	E 27°33.169'	0.2	4	R 600.00	22 kg	39 kg		27 kg	
AC007	S 23°42.223'	E 27°33.165'	0.4	5	R 1 500.00	108 kg	193 kg		133 kg	
AC008	S 23°42.219'	E 27°33.167'	0.3	5	R 2 250.00	61 kg	108 kg		75 kg	2 trees
AC009	S 23°42.215'	E 27°33.162'	0.4	6	R 3 600.00	130 kg	231 kg		160 kg	2 trees
AC010	S 23°42.209'	E 27°33.157'	0.4	6	R 1 800.00	130 kg	231 kg		160 kg	
AC011	S 23°42.213'	E 27°33.168'	0.5	7	R 2 625.00	237 kg	421 kg		292 kg	
AC012	S 23°42.205'	E 27°33.178'	0.6	11	R 4 950.00	536 kg	953 kg		661 kg	
AC013	S 23°42.203'	E 27°33.164'	0.2	4	R 600.00	22 kg	39 kg		27 kg	
AC014	S 23°42.199'	E 27°33.160'	0.9	5	R 3 375.00	548 kg	975 kg		676 kg	
AC015	S 23°42.186'	E 27°33.155'	0.6	7	R 3 150.00	341 kg	607 kg		421 kg	
AC016	S 23°42.238'	E 27°33.163'	0.5	5	R 1 875.00	169 kg	301 kg		209 kg	
AC017	S 23°41.629'	E 27°34.042'	0.4	6	R 1 800.00	130 kg	231 kg		160 kg	
AC018	S 23°41.624'	E 27°34.023'	1	6	R 4 500.00	811 kg	1 444 kg		1 001 kg	
AC019	S 23°41.952'	E 27°32.827'	0.9	5	R 3 375.00	548 kg	975 kg		676 kg	
AC020	S 23°41.957'	E 27°32.816'	0.5	5	R 1 875.00	169 kg	301 kg		209 kg	
AC021	S 23°41.967'	E 27°32.806'	1.2	5	R 4 500.00	974 kg	1 733 kg		1 201 kg	
AC022	S 23°41.946'	E 27°32.840'	0.9	5	R 3 375.00	548 kg	975 kg		676 kg	
AC023	S 23°41.943'	E 27°32.848'	0.9	4	R 2 700.00	438 kg	780 kg		541 kg	
AC024	S 23°41.943'	E 27°32.850'	0.8	4	R 2 400.00	346 kg	616 kg		427 kg	
AC025	S 23°41.946'	E 27°32.849'	0.5	4	R 1 500.00	135 kg	241 kg		167 kg	
AC026	S 23°41.945'	E 27°32.864'	0.4	4	R 1 200.00	87 kg	154 kg		107 kg	
AC027	S 23°41.944'	E 27°32.872'	0.5	4	R 1 500.00	135 kg	241 kg		167 kg	
AC028	S 23°41.885'	E 27°32.885'	0.3	4	R 900.00	49 kg	87 kg		60 kg	
AC029	S 23°41.864'	E 27°32.952'	0.4	5	R 1 500.00	108 kg	193 kg		133 kg	
AC030	S 23°41.863'	E 27°32.972'	0.3	4	R 900.00	49 kg	87 kg		60 kg	
AC031	S 23°41.822'	E 27°33.084'	0.4	5	R 1 500.00	108 kg	193 kg		133 kg	
AC032	S 23°41.823'	E 27°33.096'	0.5	6	R 2 250.00	203 kg	361 kg		250 kg	
AC033	S 23°41.784'	E 27°33.158'	2.6	12	R 23 400.00	10 970 kg	19 526 kg		13 537 kg	
AC034	S 23°41.776'	E 27°33.208'	2.6	10	R 19 500.00	9 141 kg	16 272 kg		11 280 kg	
AC035	S 23°41.769'	E 27°33.213'	2	10	R 15 000.00	5 409 kg	9 628 kg		6 675 kg	
AC036	S 23°41.771'	E 27°33.242'	1.5	10	R 11 250.00	3 043 kg	5 416 kg		3 755 kg	
AC037	S 23°41.705'	E 27°33.433'	1.8	8	R 10 800.00	3 505 kg	6 239 kg		4 325 kg	
AC038	S 23°41.713'	E 27°33.455'	0.9	8	R 5 400.00	876 kg	1 560 kg		1 081 kg	
AC039	S 23°41.689'	E 27°33.481'	2.4	8	R 14 400.00	6 231 kg	11 092 kg		7 689 kg	
AC040	S 23°41.686'	E 27°33.494'	1.4	8	R 8 400.00	2 120 kg	3 774 kg		2 617 kg	
AC041	S 23°41.686'	E 27°33.514'	1.8	8	R 10 800.00	3 505 kg	6 239 kg		4 325 kg	
AC042	S 23°41.692'	E 27°33.527'	2	10	R 15 000.00	5 409 kg	9 628 kg		6 675 kg	
AC043	S 23°41.665'	E 27°33.620'	1	6	R 4 500.00	811 kg	1 444 kg		1 001 kg	
AC044	S 23°41.634'	E 27°33.699'	0.8	6	R 3 600.00	519 kg	924 kg		641 kg	
AC045	S 23°41.604'	E 27°33.865'	0.9	7	R 4 725.00	767 kg	1 365 kg		946 kg	
AC046	S 23°41.580'	E 27°34.052'	0.7	4	R 2 100.00	265 kg	472 kg		327 kg	
AC047	S 23°41.570'	E 27°34.253'	1.4	7	R 7 350.00	1 855 kg	3 302 kg		2 289 kg	
AC048	S 23°41.597'	E 27°34.565'	1	5	R 3 750.00	676 kg	1 204 kg		834 kg	
AC049	S 23°41.594'	E 27°34.597'	1.4	6	R 6 300.00	1 590 kg	2 831 kg		1 962 kg	
AC050	S 23°41.604'	E 27°34.596'	1	6	R 4 500.00	811 kg	1 444 kg		1 001 kg	
AC051	S 23°41.611'	E 27°34.643'	1	6	R 4 500.00	811 kg	1 444 kg		1 001 kg	
AC052	S 23°41.600'	E 27°34.679'	1.3	8	R 7 800.00	1 828 kg	3 254 kg		2 256 kg	
AC053	S 23°41.607'	E 27°34.741'	2	8	R 12 000.00	4 327 kg	7 703 kg		5 340 kg	
AC054	S 23°41.862'	E 27°33.144'	0.3	6	R 1 350.00	73 kg	130 kg		90 kg	

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight
AC055	S 23°41.900'	E 27°33.006'	0.2	5	R 750.00	27 kg	48 kg	33 kg
AC056	S 23°41.917'	E 27°32.973'	0.4	5	R 1 500.00	108 kg	193 kg	133 kg
AC057	S 23°41.917'	E 27°32.958'	0.3	5	R 1 125.00	61 kg	108 kg	75 kg
AC058	S 23°41.928'	E 27°32.925'	0.4	5	R 1 500.00	108 kg	193 kg	133 kg
AC059	S 23°41.927'	E 27°32.920'	0.3	5	R 1 125.00	61 kg	108 kg	75 kg
AC060	S 23°41.931'	E 27°32.896'	0.5	5	R 1 875.00	169 kg	301 kg	209 kg
AC061	S 23°41.937'	E 27°32.887'	0.3	4	R 900.00	49 kg	87 kg	60 kg
AC062	S 23°41.635'	E 27°33.960'	0.3	5	R 1 125.00	61 kg	108 kg	75 kg
AC063	S 23°41.640'	E 27°33.841'	1.2	8	R 7 200.00	1 558 kg	2 773 kg	1 922 kg
AC064	S 23°41.655'	E 27°33.798'	2	8	R 12 000.00	4 327 kg	7 703 kg	5 340 kg
AC065	S 23°41.651'	E 27°33.767'	0.6	7	R 3 150.00	341 kg	607 kg	421 kg
AC066	S 23°41.663'	E 27°33.706'	0.9	8	R 5 400.00	876 kg	1 560 kg	1 081 kg
AC067	S 23°41.661'	E 27°33.709'	1	6	R 4 500.00	811 kg	1 444 kg	1 001 kg
AC068					R -	0 kg	0 kg	0 kg
AC069					R -	0 kg	0 kg	0 kg
AC070					R -	0 kg	0 kg	0 kg
AC071					R -	0 kg	0 kg	0 kg
AC072					R -	0 kg	0 kg	0 kg
AC073					R -	0 kg	0 kg	0 kg
AC074					R -	0 kg	0 kg	0 kg
AC075					R -	0 kg	0 kg	0 kg
BO001	S 23°42.660'	E 27°33.614'	0.5	3.5	R 4 375.00	95 kg	187 kg	122 kg
BO002	S 23°42.501'	E 27°33.874'	0.6	3	R 4 500.00	117 kg	231 kg	151 kg
BO003	S 23°42.316'	E 27°33.584'	1.3	5	R 16 250.00	914 kg	1 805 kg	1 182 kg
BO004	S 23°42.257'	E 27°33.573'	1.2	8	R 24 000.00	1 246 kg	2 461 kg	1 611 kg
BO005	S 23°42.130'	E 27°33.505'	0.4	5	R 5 000.00	87 kg	171 kg	112 kg
BO006	S 23°42.058'	E 27°33.668'	0.6	6	R 9 000.00	234 kg	462 kg	302 kg
BO007	S 23°41.975'	E 27°33.771'	1	11	R 27 500.00	1 190 kg	2 350 kg	1 538 kg
BO008	S 23°42.133'	E 27°33.817'	0.6	8	R 12 000.00	312 kg	615 kg	403 kg
BO009	S 23°42.037'	E 27°33.881'	0.9	6	R 13 500.00	526 kg	1 038 kg	680 kg
BO010	S 23°41.973'	E 27°33.871'	1.3	10	R 32 500.00	1 828 kg	3 611 kg	2 363 kg
BO011	S 23°42.419'	E 27°33.806'	0.7	6	R 10 500.00	318 kg	628 kg	411 kg
BO012	S 23°42.416'	E 27°33.797'	0.7	7	R 12 250.00	371 kg	733 kg	480 kg
BO013	S 23°42.435'	E 27°32.909'	0.4	4	R 4 000.00	69 kg	137 kg	89 kg
BO014	S 23°42.429'	E 27°32.897'	1	7	R 17 500.00	757 kg	1 496 kg	979 kg
BO015	S 23°42.433'	E 27°32.961'	0.8	5	R 10 000.00	346 kg	684 kg	447 kg
BO016	S 23°42.464'	E 27°33.013'	0.8	6	R 12 000.00	415 kg	820 kg	537 kg
BO017	S 23°42.409'	E 27°32.984'	0.3	5	R 3 750.00	49 kg	96 kg	63 kg
BO018	S 23°42.394'	E 27°33.020'	0.6	8	R 12 000.00	312 kg	615 kg	403 kg
BO019	S 23°42.375'	E 27°33.215'	0.6	6	R 9 000.00	234 kg	462 kg	302 kg
BO020	S 23°42.424'	E 27°33.266'	0.7	8	R 14 000.00	424 kg	838 kg	548 kg
BO021	S 23°42.460'	E 27°33.281'	1.5	6	R 22 500.00	1 460 kg	2 884 kg	1 888 kg
BO022	S 23°42.484'	E 27°33.256'	0.9	8	R 18 000.00	701 kg	1 385 kg	906 kg
BO023	S 23°42.504'	E 27°33.319'	1.1	7	R 19 250.00	916 kg	1 810 kg	1 184 kg
BO024	S 23°42.421'	E 27°33.305'	1.2	5	R 15 000.00	779 kg	1 538 kg	1 007 kg
BO025	S 23°42.419'	E 27°33.284'	0.3	4	R 3 000.00	39 kg	77 kg	50 kg
BO026	S 23°42.344'	E 27°33.867'	0.7	6	R 10 500.00	318 kg	628 kg	411 kg
BO027	S 23°42.331'	E 27°33.098'	1.7	6	R 25 500.00	1 876 kg	3 705 kg	2 425 kg
BO028	S 23°42.312'	E 27°33.144'	0.1	5	R 1 250.00	5 kg	11 kg	7 kg
BO029	S 23°41.836'	E 27°33.985'	2	7	R 35 000.00	3 029 kg	5 982 kg	3 915 kg
BO030	S 23°42.150'	E 27°34.122'	0.7	5	R 8 750.00	265 kg	523 kg	343 kg
BO031	S 23°41.580'	E 27°34.290'	2.6	7	R 45 500.00	5 119 kg	10 110 kg	6 617 kg
BO032	S 23°41.602'	E 27°34.620'	1.8	7	R 31 500.00	2 454 kg	4 846 kg	3 171 kg
BO033	S 23°41.607'	E 27°34.727'	1	7	R 17 500.00	757 kg	1 496 kg	979 kg
BO034	S 23°41.810'	E 27°33.291'	0.7	7	R 12 250.00	371 kg	733 kg	480 kg
BO035	S 23°41.596'	E 27°34.183'	2.4	5	R 30 000.00	3 116 kg	6 153 kg	4 027 kg
BO036	S 23°41.636'	E 27°34.574'	1.4	5	R 17 500.00	1 060 kg	2 094 kg	1 370 kg
BO037	S 23°41.663'	E 27°34.824'	1.6	5	R 20 000.00	1 385 kg	2 735 kg	1 790 kg
BO038	S 23°41.680'	E 27°34.880'	2.1	6	R 31 500.00	2 862 kg	5 653 kg	3 700 kg
BO039					R -	0 kg	0 kg	0 kg
BO040					R -	0 kg	0 kg	0 kg
BO041					R -	0 kg	0 kg	0 kg
CO001	S 23°42.578'	E 27°33.624'	1.2	7	R 31 360.00	1 636 kg	2 699 kg	1 955 kg
CO002	S 23°42.221'	E 27°34.109'	1.9	9	R 63 840.00	5 272 kg	8 699 kg	6 300 kg
CO003	S 23°42.222'	E 27°34.140'	0.2	4.5	R 3 360.00	29 kg	48 kg	35 kg
CO004	S 23°42.580'	E 27°33.522'	1	10	R 37 333.33	1 623 kg	2 678 kg	1 939 kg
CO005	S 23°42.572'	E 27°33.493'	1	8	R 29 866.67	1 298 kg	2 142 kg	1 551 kg
CO006	S 23°42.579'	E 27°33.502'	2	7	R 52 266.67	4 544 kg	7 497 kg	5 430 kg
CO007	S 23°42.505'	E 27°33.326'	0.3	5	R 5 600.00	73 kg	120 kg	87 kg
CO008	S 23°42.420'	E 27°33.281'	0.5	5	R 4 666.67	203 kg	335 kg	242 kg
CO009	S 23°41.792'	E 27°34.094'	1.2	9	R 20 160.00	2 103 kg	3 470 kg	2 513 kg
CO010	S 23°41.820'	E 27°34.109'	0.9	7	R 11 760.00	920 kg	1 518 kg	1 100 kg
CO011	S 23°41.878'	E 27°34.062'	0.9	9	R 15 120.00	1 183 kg	1 952 kg	1 414 kg
CO012	S 23°42.024'	E 27°34.093'	1.1	5	R 10 266.67	982 kg	1 620 kg	1 173 kg
CO013	S 23°42.018'	E 27°34.090'	0.4	4	R 2 986.67	104 kg	171 kg	124 kg
CO014	S 23°42.025'	E 27°34.097'	0.8	5	R 7 466.67	519 kg	857 kg	621 kg
CO015	S 23°42.013'	E 27°34.084'	0.2	4	R 1 493.33	26 kg	43 kg	31 kg
CO016	S 23°42.019'	E 27°34.075'	0.6	3	R 3 360.00	175 kg	289 kg	209 kg

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight
CO017	S 23°41.621'	E 27°33.695'	2.6	10	R 65 000.00	10 970 kg	18 100 kg	13 109 kg
CO018	S 23°41.643'	E 27°33.827'	0.2	4	R 2 000.00	26 kg	43 kg	31 kg
CO019	S 23°41.648'	E 27°33.820'	0.7	7	R 12 250.00	557 kg	918 kg	665 kg
CO020					R -	0 kg	0 kg	0 kg
CO021					R -	0 kg	0 kg	0 kg
CO022					R -	0 kg	0 kg	0 kg
CO023					R -	0 kg	0 kg	0 kg
CO024					R -	0 kg	0 kg	0 kg
CO025					R -	0 kg	0 kg	0 kg
SC001	S 23°42.322'	E 27°34.166'	1.8	10	R 28 800.00	2 454 kg	5 871 kg	3 479 kg
SC002	S 23°42.310'	E 27°34.075'	1.8	10	R 28 800.00	2 454 kg	5 871 kg	3 479 kg
SC003	S 23°42.317'	E 27°34.099'	1.7	9	R 24 480.00	1 970 kg	4 713 kg	2 793 kg
SC004	S 23°42.328'	E 27°34.096'	1.7	10	R 27 200.00	2 189 kg	5 237 kg	3 103 kg
SC005	S 23°42.350'	E 27°34.092'	2.3	11	R 40 480.00	4 407 kg	10 544 kg	6 248 kg
SC006	S 23°42.350'	E 27°34.076'	3.1	12	R 59 520.00	8 733 kg	20 897 kg	12 382 kg
SC007	S 23°42.414'	E 27°34.120'	2	10	R 32 000.00	3 029 kg	7 248 kg	4 295 kg
SC008	S 23°42.348'	E 27°34.050'	1.8	9	R 25 920.00	2 208 kg	5 284 kg	3 131 kg
SC009	S 23°42.335'	E 27°34.046'	1.6	8	R 20 480.00	1 551 kg	3 711 kg	2 199 kg
SC010	S 23°42.420'	E 27°34.090'	1.7	12	R 32 640.00	2 626 kg	6 284 kg	3 724 kg
SC011	S 23°42.386'	E 27°33.985'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg
SC012	S 23°42.369'	E 27°33.960'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg
SC013	S 23°42.313'	E 27°33.938'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg
SC014	S 23°42.291'	E 27°33.928'	1.9	13	R 39 520.00	3 554 kg	8 504 kg	5 039 kg
SC015	S 23°42.256'	E 27°33.972'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg
SC016	S 23°42.266'	E 27°33.950'	2.1	12	R 40 320.00	4 007 kg	9 589 kg	5 682 kg
SC017	S 23°42.260'	E 27°33.913'	2.1	12	R 40 320.00	4 007 kg	9 589 kg	5 682 kg
SC018	S 23°42.257'	E 27°33.909'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg
SC019	S 23°42.251'	E 27°33.882'	1.7	12	R 32 640.00	2 626 kg	6 284 kg	3 724 kg
SC020	S 23°42.306'	E 27°33.869'	0.6	4.5	R 4 320.00	123 kg	294 kg	174 kg
SC021	S 23°42.315'	E 27°33.868'	2.1	11	R 36 960.00	3 674 kg	8 790 kg	5 209 kg
SC022	S 23°42.317'	E 27°33.867'	2	12	R 38 400.00	3 635 kg	8 698 kg	5 154 kg
SC023	S 23°42.326'	E 27°33.873'	1.8	13	R 37 440.00	3 190 kg	7 632 kg	4 522 kg
SC024	S 23°42.321'	E 27°33.898'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg
SC025	S 23°42.342'	E 27°33.882'	1.7	12	R 32 640.00	2 626 kg	6 284 kg	3 724 kg
SC026	S 23°42.328'	E 27°33.853'	2.1	12	R 40 320.00	4 007 kg	9 589 kg	5 682 kg
SC027	S 23°42.332'	E 27°33.857'	1.1	10	R 17 600.00	916 kg	2 193 kg	1 299 kg
SC028	S 23°42.374'	E 27°33.888'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg
SC029	S 23°42.397'	E 27°33.951'	2.2	12	R 42 240.00	4 398 kg	10 524 kg	6 236 kg
SC030	S 23°42.401'	E 27°33.975'	1.9	14	R 42 560.00	3 827 kg	9 158 kg	5 427 kg
SC031	S 23°42.432'	E 27°34.016'	2	12	R 38 400.00	3 635 kg	8 698 kg	5 154 kg
SC032	S 23°42.452'	E 27°34.022'	1.6	10	R 25 600.00	1 939 kg	4 639 kg	2 749 kg
SC033	S 23°42.454'	E 27°33.954'	1.7	10	R 27 200.00	2 189 kg	5 237 kg	3 103 kg
SC034	S 23°42.433'	E 27°33.944'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg
SC035	S 23°42.457'	E 27°33.880'	1.8	13	R 37 440.00	3 190 kg	7 632 kg	4 522 kg
SC036	S 23°42.496'	E 27°33.891'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg
SC037	S 23°42.295'	E 27°33.785'	1.4	9	R 20 160.00	1 336 kg	3 196 kg	1 894 kg
SC038	S 23°42.459'	E 27°33.745'	1.4	10	R 22 400.00	1 484 kg	3 552 kg	2 104 kg
SC039	S 23°42.541'	E 27°33.785'	2.4	14	R 53 760.00	6 107 kg	14 612 kg	8 658 kg
SC040	S 23°42.527'	E 27°33.742'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg
SC041	S 23°42.425'	E 27°33.691'	1.2	10	R 19 200.00	1 090 kg	2 609 kg	1 546 kg
SC042	S 23°42.363'	E 27°33.650'	2.3	8	R 29 440.00	3 205 kg	7 669 kg	4 544 kg
SC043	S 23°42.338'	E 27°33.678'	2.3	11	R 40 480.00	4 407 kg	10 544 kg	6 248 kg
SC044	S 23°42.325'	E 27°33.645'	3	10	R 48 000.00	6 815 kg	16 308 kg	9 663 kg
SC045	S 23°42.292'	E 27°33.673'	1.6	9	R 23 040.00	1 745 kg	4 175 kg	2 474 kg
SC046	S 23°42.311'	E 27°33.677'	1.7	10	R 27 200.00	2 189 kg	5 237 kg	3 103 kg
SC047	S 23°42.488'	E 27°33.664'	1.5	11	R 26 400.00	1 874 kg	4 485 kg	2 657 kg
SC048	S 23°42.490'	E 27°33.600'	2.7	12	R 51 840.00	6 625 kg	15 852 kg	9 393 kg
SC049	S 23°42.483'	E 27°33.585'	2.3	14	R 51 520.00	5 608 kg	13 420 kg	7 952 kg
SC050	S 23°42.430'	E 27°33.583'	2	11	R 35 200.00	3 332 kg	7 973 kg	4 724 kg
SC051	S 23°42.359'	E 27°33.588'	1.5	13	R 31 200.00	2 215 kg	5 300 kg	3 141 kg
SC052	S 23°42.339'	E 27°33.533'	2.8	12	R 53 760.00	7 124 kg	17 048 kg	10 101 kg
SC053	S 23°42.336'	E 27°33.519'	1.3	11	R 22 880.00	1 408 kg	3 369 kg	1 996 kg
SC054	S 23°42.338'	E 27°33.519'	1	9	R 14 400.00	682 kg	1 631 kg	966 kg
SC055	S 23°42.331'	E 27°33.516'	3	12	R 57 600.00	8 179 kg	19 570 kg	11 596 kg
SC056	S 23°42.310'	E 27°33.510'	2.3	12	R 44 160.00	4 807 kg	11 503 kg	6 816 kg
SC057	S 23°42.338'	E 27°33.502'	2.8	10	R 44 800.00	5 937 kg	14 206 kg	8 418 kg
SC058	S 23°42.364'	E 27°33.507'	2.1	14	R 47 040.00	4 675 kg	11 188 kg	6 629 kg
SC059	S 23°42.482'	E 27°33.490'	1.5	11	R 26 400.00	1 874 kg	4 485 kg	2 657 kg
SC060	S 23°42.489'	E 27°33.475'	1.7	15	R 40 800.00	3 283 kg	7 855 kg	4 655 kg
SC061	S 23°42.505'	E 27°33.474'	1.9	14	R 42 560.00	3 827 kg	9 158 kg	5 427 kg
SC062	S 23°42.433'	E 27°33.480'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg
SC063	S 23°42.379'	E 27°33.465'	2.6	13	R 54 080.00	6 655 kg	15 924 kg	9 436 kg
SC064	S 23°42.254'	E 27°33.580'	2.9	13	R 60 320.00	8 279 kg	19 811 kg	11 739 kg
SC065	S 23°42.257'	E 27°33.613'	3.6	11	R 63 360.00	10 796 kg	25 833 kg	15 307 kg
SC066	S 23°42.103'	E 27°33.535'	1.3	10	R 20 800.00	1 280 kg	3 062 kg	1 815 kg
SC067	S 23°42.145'	E 27°33.499'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg
SC068	S 23°42.179'	E 27°33.528'	1.7	10	R 27 200.00	2 189 kg	5 237 kg	3 103 kg
SC069	S 23°42.208'	E 27°33.565'	2.3	13	R 47 840.00	5 208 kg	12 461 kg	7 384 kg

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight	
SC070	S 23°42.208'	E 27°33.568'	2.5	12	R 48 000.00	5 680 kg	13 590 kg	8 053 kg	
SC071	S 23°42.206'	E 27°33.605'	2.1	14	R 47 040.00	4 675 kg	11 188 kg	6 629 kg	
SC072	S 23°42.048'	E 27°33.694'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg	
SC073	S 23°42.060'	E 27°33.689'	2.5	15	R 60 000.00	7 099 kg	16 988 kg	10 066 kg	
SC074	S 23°42.069'	E 27°33.677'	1.9	13	R 39 520.00	3 554 kg	8 504 kg	5 039 kg	
SC075	S 23°42.072'	E 27°33.686'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg	
SC076	S 23°42.069'	E 27°33.701'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg	
SC077	S 23°42.133'	E 27°33.710'	2.4	15	R 57 600.00	6 543 kg	15 656 kg	9 277 kg	
SC078	S 23°42.137'	E 27°33.686'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg	
SC079	S 23°42.145'	E 27°33.683'	2.1	14	R 47 040.00	4 675 kg	11 188 kg	6 629 kg	
SC080	S 23°42.161'	E 27°33.660'	1.9	14	R 42 560.00	3 827 kg	9 158 kg	5 427 kg	
SC081	S 23°42.166'	E 27°33.698'	2.2	14	R 49 280.00	5 131 kg	12 278 kg	7 275 kg	
SC082	S 23°42.159'	E 27°33.723'	1.7	12	R 32 640.00	2 626 kg	6 284 kg	3 724 kg	
SC083	S 23°42.167'	E 27°33.738'	1.4	11	R 24 640.00	1 633 kg	3 907 kg	2 315 kg	
SC084	S 23°42.187'	E 27°33.715'	1.9	12	R 36 480.00	3 281 kg	7 850 kg	4 651 kg	
SC085	S 23°42.210'	E 27°33.685'	1.9	13	R 39 520.00	3 554 kg	8 504 kg	5 039 kg	
SC086	S 23°42.211'	E 27°33.687'	1.2	11	R 21 120.00	1 200 kg	2 870 kg	1 701 kg	
SC087	S 23°42.236'	E 27°33.758'	2.3	9	R 33 120.00	3 605 kg	8 627 kg	5 112 kg	
SC088	S 23°42.244'	E 27°33.761'	1.2	8	R 15 360.00	872 kg	2 087 kg	1 237 kg	
SC089	S 23°42.252'	E 27°33.690'	2.7	10	R 43 200.00	5 521 kg	13 210 kg	7 827 kg	
SC090	S 23°42.200'	E 27°33.819'	2.2	13	R 45 760.00	4 765 kg	11 401 kg	6 756 kg	
SC091	S 23°42.180'	E 27°33.800'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg	
SC092	S 23°42.131'	E 27°33.785'	1.7	13	R 35 360.00	2 845 kg	6 808 kg	4 034 kg	
SC093	S 23°42.173'	E 27°33.917'	1.8	12	R 34 560.00	2 944 kg	7 045 kg	4 175 kg	
SC094	S 23°42.162'	E 27°33.911'	1.5	9	R 21 600.00	1 533 kg	3 669 kg	2 174 kg	
SC095	S 23°42.167'	E 27°34.029'	2.1	11	R 36 960.00	3 674 kg	8 790 kg	5 209 kg	
SC096	S 23°42.202'	E 27°33.857'	1.4	10	R 22 400.00	1 484 kg	3 552 kg	2 104 kg	
SC097	S 23°42.174'	E 27°33.867'	4	11	R 70 400.00	13 328 kg	31 892 kg	18 897 kg	
SC098	S 23°42.149'	E 27°33.878'	1.6	10	R 25 600.00	1 939 kg	4 639 kg	2 749 kg	
SC099	S 23°42.693'	E 27°33.236'	2.1	14	R 47 040.00	4 675 kg	11 188 kg	6 629 kg	
SC100	S 23°42.448'	E 27°33.044'	1.4	11	R 24 640.00	1 633 kg	3 907 kg	2 315 kg	
SC101	S 23°42.626'	E 27°33.104'	1	10	R 16 000.00	757 kg	1 812 kg	1 074 kg	
SC102	S 23°42.367'	E 27°33.293'	2.1	11	R 36 960.00	3 674 kg	8 790 kg	5 209 kg	
SC103	S 23°42.350'	E 27°33.351'	0.7	7	R 7 840.00	260 kg	622 kg	368 kg	
SC104	S 23°42.375'	E 27°33.349'	1.2	4	R 7 680.00	436 kg	1 044 kg	618 kg	
SC105	S 23°42.386'	E 27°33.357'	0.8	6	R 7 680.00	291 kg	696 kg	412 kg	
SC106	S 23°42.383'	E 27°33.418'	2.2	9	R 31 680.00	3 299 kg	7 893 kg	4 677 kg	
SC107	S 23°42.409'	E 27°33.397'	4.4	11	R 77 440.00	16 127 kg	38 589 kg	22 866 kg	
SC108	S 23°42.343'	E 27°33.814'	2	10	R 32 000.00	3 029 kg	7 248 kg	4 295 kg	
SC109	S 23°42.293'	E 27°33.190'	0.5	8	R 6 400.00	151 kg	362 kg	215 kg	
SC110	S 23°41.942'	E 27°33.898'	1.9	11	R 33 440.00	3 007 kg	7 196 kg	4 264 kg	
SC111	S 23°42.152'	E 27°34.100'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg	
SC112	S 23°42.146'	E 27°34.090'	1	8	R 12 800.00	606 kg	1 450 kg	859 kg	
SC113	S 23°42.117'	E 27°34.113'	1.8	11	R 31 680.00	2 699 kg	6 458 kg	3 827 kg	
SC114	S 23°42.105'	E 27°34.088'	1.6	12	R 30 720.00	2 326 kg	5 567 kg	3 298 kg	
SC115	S 23°42.191'	E 27°34.139'	2.2	12	R 42 240.00	4 398 kg	10 524 kg	6 236 kg	
SC116	S 23°41.597'	E 27°34.343'	1.2	9	R 17 280.00	981 kg	2 348 kg	1 392 kg	
SC117	S 23°41.634'	E 27°34.870'	1.4	10	R 22 400.00	1 484 kg	3 552 kg	2 104 kg	
SC118	S 23°41.636'	E 27°34.506'	0.8	9	R 11 520.00	436 kg	1 044 kg	618 kg	
SC119	S 23°41.684'	E 27°34.928'	1.6	11	R 28 160.00	2 132 kg	5 103 kg	3 024 kg	
SC120	S 23°41.674'	E 27°34.995'	1.4	11	R 24 640.00	1 633 kg	3 907 kg	2 315 kg	
SC121	S 23°41.703'	E 27°35.032'	3	12	R 57 600.00	8 179 kg	19 570 kg	11 596 kg	
SC122	S 23°41.682'	E 27°35.081'	1.2	10	R 19 200.00	1 090 kg	2 609 kg	1 546 kg	
SC123					R -	0 kg	0 kg	0 kg	
SC124					R -	0 kg	0 kg	0 kg	
SC125					R -	0 kg	0 kg	0 kg	
SP001	S 23°41.980'	E 27°33.897'	1.2	9	R 17 280.00	1 682 kg	3 049 kg	2 093 kg	
SP002	S 23°41.963'	E 27°33.886'	1.9	7	R 21 280.00	3 281 kg	5 946 kg	4 080 kg	
SP003	S 23°41.958'	E 27°33.878'	2.2	7	R 24 640.00	4 398 kg	7 972 kg	5 470 kg	
SP004	S 23°41.953'	E 27°33.860'	1.4	9	R 20 160.00	2 290 kg	4 151 kg	2 848 kg	
SP005	S 23°41.949'	E 27°33.857'	1.2	8	R 15 360.00	1 496 kg	2 711 kg	1 860 kg	
SP006	S 23°41.936'	E 27°33.849'	1.6	10	R 25 600.00	3 323 kg	6 024 kg	4 133 kg	
SP007	S 23°41.891'	E 27°33.793'	1.9	7	R 21 280.00	3 281 kg	5 946 kg	4 080 kg	
SP008	S 23°41.891'	E 27°33.806'	2.1	10	R 33 600.00	5 725 kg	10 377 kg	7 120 kg	
SP009	S 23°41.899'	E 27°33.815'	0.6	7	R 6 720.00	327 kg	593 kg	407 kg	
SP010	S 23°41.897'	E 27°33.836'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	
SP011	S 23°41.898'	E 27°33.840'	2.2	10	R 35 200.00	6 283 kg	11 388 kg	7 815 kg	
SP012	S 23°41.898'	E 27°33.839'	1.2	7	R 13 440.00	1 309 kg	2 372 kg	1 628 kg	
SP013	S 23°41.908'	E 27°33.843'	1.2	9	R 17 280.00	1 682 kg	3 049 kg	2 093 kg	
SP014	S 23°41.916'	E 27°33.831'	1.4	11	R 24 640.00	2 799 kg	5 073 kg	3 481 kg	
SP015	S 23°41.922'	E 27°33.834'	1.2	11	R 21 120.00	2 056 kg	3 727 kg	2 558 kg	
SP016	S 23°41.926'	E 27°33.827'	1.8	11	R 31 680.00	4 627 kg	8 386 kg	5 754 kg	
SP017	S 23°41.917'	E 27°33.819'	1.6	6	R 15 360.00	1 994 kg	3 614 kg	2 480 kg	
SP018	S 23°41.912'	E 27°33.806'	1.5	9	R 21 600.00	2 629 kg	4 765 kg	3 270 kg	
SP019	S 23°41.915'	E 27°33.796'	0.8	6	R 7 680.00	499 kg	904 kg	620 kg	
SP020	S 23°41.942'	E 27°33.812'	2.2	9	R 31 680.00	5 655 kg	10 249 kg	7 033 kg	
SP021	S 23°41.939'	E 27°33.816'	2.1	10	R 33 600.00	5 725 kg	10 377 kg	7 120 kg	
SP022	S 23°41.921'	E 27°33.867'	4.5	10	R 64 000.00	26 288 kg	47 647 kg	32 696 kg	5 trees

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight	
SP023	S 23°42.689'	E 27°33.292'	3.5	10	R 56 000.00	15 903 kg	28 824 kg	19 779 kg	
SP024	S 23°42.707'	E 27°33.182'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	
SP025	S 23°42.708'	E 27°33.186'	1	5	R 8 000.00	649 kg	1 176 kg	807 kg	
SP026	S 23°42.708'	E 27°33.260'	1.4	9	R 20 160.00	2 290 kg	4 151 kg	2 848 kg	
SP027	S 23°42.710'	E 27°33.258'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	
SP028	S 23°42.709'	E 27°33.258'	0.9	8	R 11 520.00	841 kg	1 525 kg	1 046 kg	
SP029	S 23°42.710'	E 27°33.240'	1.2	7	R 13 440.00	1 309 kg	2 372 kg	1 628 kg	
SP030	S 23°42.565'	E 27°33.091'	3	10	R 48 000.00	11 684 kg	21 177 kg	14 532 kg	
SP031	S 23°42.565'	E 27°33.089'	1.9	7	R 21 280.00	3 281 kg	5 946 kg	4 080 kg	
SP032	S 23°42.569'	E 27°33.096'	0.7	8	R 8 960.00	509 kg	922 kg	633 kg	
SP033	S 23°42.570'	E 27°33.092'	0.9	9	R 12 960.00	946 kg	1 715 kg	1 177 kg	
SP034	S 23°42.612'	E 27°33.552'	1	8	R 12 800.00	1 039 kg	1 882 kg	1 292 kg	
SP035	S 23°42.492'	E 27°32.918'	1.9	12	R 36 480.00	5 624 kg	10 193 kg	6 995 kg	
SP036	S 23°42.489'	E 27°32.913'	1.3	10	R 20 800.00	2 194 kg	3 976 kg	2 729 kg	
SP037	S 23°42.393'	E 27°32.992'	1.3	9	R 18 720.00	1 975 kg	3 579 kg	2 456 kg	
SP038	S 23°42.392'	E 27°32.990'	1.1	7	R 12 320.00	1 100 kg	1 993 kg	1 368 kg	
SP039	S 23°42.395'	E 27°32.992'	0.5	8	R 6 400.00	260 kg	471 kg	323 kg	
SP040	S 23°42.396'	E 27°32.995'	0.5	8	R 6 400.00	260 kg	471 kg	323 kg	
SP041	S 23°42.506'	E 27°33.123'	2	8	R 25 600.00	4 154 kg	7 529 kg	5 167 kg	
SP042	S 23°42.509'	E 27°33.126'	1.1	7	R 12 320.00	1 100 kg	1 993 kg	1 368 kg	2 trees
SP043	S 23°42.381'	E 27°33.041'	1.1	8	R 14 080.00	1 257 kg	2 278 kg	1 563 kg	
SP044	S 23°42.383'	E 27°33.067'	1.2	7	R 13 440.00	1 309 kg	2 372 kg	1 628 kg	
SP045	S 23°42.382'	E 27°33.077'	0.9	8	R 11 520.00	841 kg	1 525 kg	1 046 kg	
SP046	S 23°42.382'	E 27°33.087'	0.7	7	R 7 840.00	445 kg	807 kg	554 kg	
SP047	S 23°42.424'	E 27°33.114'	1.9	8	R 24 320.00	3 749 kg	6 795 kg	4 663 kg	
SP048	S 23°42.458'	E 27°33.267'	2.4	12	R 46 080.00	8 973 kg	16 264 kg	11 160 kg	
SP049	S 23°42.451'	E 27°33.263'	0.4	6	R 3 840.00	125 kg	226 kg	155 kg	
SP050	S 23°42.449'	E 27°33.246'	1.3	8	R 16 640.00	1 755 kg	3 181 kg	2 183 kg	
SP051	S 23°42.761'	E 27°33.246'	1.4	8	R 17 920.00	2 036 kg	3 689 kg	2 532 kg	
SP052	S 23°42.592'	E 27°33.072'	0.9	8	R 11 520.00	841 kg	1 525 kg	1 046 kg	3 trees
SP053	S 23°42.588'	E 27°33.066'	1.7	9	R 24 480.00	3 377 kg	6 120 kg	4 200 kg	2 trees
SP054	S 23°42.573'	E 27°33.071'	0.9	8	R 11 520.00	841 kg	1 525 kg	1 046 kg	
SP055	S 23°42.572'	E 27°33.066'	1.9	10	R 30 400.00	4 686 kg	8 494 kg	5 829 kg	
SP056	S 23°42.576'	E 27°33.068'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	
SP057	S 23°42.571'	E 27°33.092'	0.6	7	R 6 720.00	327 kg	593 kg	407 kg	
SP058	S 23°42.678'	E 27°33.266'	0.8	6	R 7 680.00	499 kg	904 kg	620 kg	2 trees
SP059	S 23°42.023'	E 27°34.014'	2.4	12	R 46 080.00	8 973 kg	16 264 kg	11 160 kg	
SP060	S 23°41.948'	E 27°33.942'	1.4	7	R 15 680.00	1 781 kg	3 228 kg	2 215 kg	
SP061	S 23°41.945'	E 27°33.945'	0.9	5	R 7 200.00	526 kg	953 kg	654 kg	
SP062	S 23°41.936'	E 27°33.942'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	2 trees
SP063	S 23°41.931'	E 27°33.918'	2.4	8	R 30 720.00	5 982 kg	10 842 kg	7 440 kg	2 trees
SP064	S 23°41.919'	E 27°33.909'	0.8	8	R 10 240.00	665 kg	1 205 kg	827 kg	
SP065	S 23°41.920'	E 27°33.897'	1.6	9	R 23 040.00	2 991 kg	5 421 kg	3 720 kg	Grave?
SP066	S 23°41.925'	E 27°33.893'	2.6	10	R 41 600.00	8 776 kg	15 906 kg	10 915 kg	
SP067	S 23°41.929'	E 27°33.878'	2.6	10	R 41 600.00	8 776 kg	15 906 kg	10 915 kg	
SP068	S 23°41.928'	E 27°33.868'	1.2	10	R 19 200.00	1 869 kg	3 388 kg	2 325 kg	
SP069	S 23°41.917'	E 27°33.884'	0.8	9	R 11 520.00	748 kg	1 355 kg	930 kg	
SP070	S 23°41.908'	E 27°33.880'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	
SP071	S 23°41.887'	E 27°33.911'	2	8	R 25 600.00	4 154 kg	7 529 kg	5 167 kg	
SP072	S 23°41.891'	E 27°33.918'	2	8	R 25 600.00	4 154 kg	7 529 kg	5 167 kg	
SP073	S 23°41.888'	E 27°33.926'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	
SP074	S 23°41.859'	E 27°33.884'	3.8	10	R 60 800.00	18 746 kg	33 977 kg	23 315 kg	
SP075	S 23°41.852'	E 27°33.887'	0.7	7	R 7 840.00	445 kg	807 kg	554 kg	
SP076	S 23°41.839'	E 27°33.938'	2.2	11	R 38 720.00	6 912 kg	12 527 kg	8 596 kg	
SP077	S 23°41.832'	E 27°33.955'	1.9	9	R 27 360.00	4 218 kg	7 645 kg	5 246 kg	
SP078	S 23°41.842'	E 27°33.966'	1	8	R 12 800.00	1 039 kg	1 882 kg	1 292 kg	
SP079	S 23°41.859'	E 27°33.970'	0.9	10	R 14 400.00	1 052 kg	1 906 kg	1 308 kg	
SP080	S 23°41.860'	E 27°33.966'	1.2	10	R 19 200.00	1 869 kg	3 388 kg	2 325 kg	
SP081	S 23°41.871'	E 27°33.946'	1.2	9	R 17 280.00	1 682 kg	3 049 kg	2 093 kg	
SP082	S 23°41.879'	E 27°33.962'	2	10	R 32 000.00	5 193 kg	9 412 kg	6 458 kg	
SP083	S 23°41.887'	E 27°33.973'	1.8	10	R 28 800.00	4 206 kg	7 624 kg	5 231 kg	3 trees
SP084	S 23°41.870'	E 27°33.987'	2.4	11	R 42 240.00	8 225 kg	14 908 kg	10 230 kg	
SP085	S 23°41.871'	E 27°33.991'	1.9	8	R 24 320.00	3 749 kg	6 795 kg	4 663 kg	2 trees
SP086	S 23°41.863'	E 27°33.983'	1.8	7	R 20 160.00	2 944 kg	5 337 kg	3 662 kg	
SP087	S 23°41.862'	E 27°33.978'	0.4	6	R 3 840.00	125 kg	226 kg	155 kg	
SP088	S 23°41.905'	E 27°33.988'	4.5	10	R 72 000.00	26 288 kg	47 647 kg	32 696 kg	
SP089	S 23°41.910'	E 27°33.993'	3.2	9	R 46 080.00	11 964 kg	21 685 kg	14 880 kg	
SP090	S 23°41.812'	E 27°34.044'	1.7	10	R 27 200.00	3 752 kg	6 800 kg	4 666 kg	
SP091	S 23°41.811'	E 27°34.054'	1.2	9	R 17 280.00	1 682 kg	3 049 kg	2 093 kg	2 trees
SP092	S 23°41.868'	E 27°34.043'	2.5	11	R 44 000.00	8 925 kg	16 177 kg	11 100 kg	
SP093	S 23°42.179'	E 27°34.172'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP094	S 23°42.145'	E 27°34.172'	1.4	7	R 15 680.00	1 781 kg	3 228 kg	2 215 kg	
SP095	S 23°42.142'	E 27°34.169'	0.4	7	R 4 480.00	145 kg	264 kg	181 kg	
SP096	S 23°42.142'	E 27°34.126'	0.9	8	R 11 520.00	841 kg	1 525 kg	1 046 kg	
SP097	S 23°42.115'	E 27°34.113'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP098	S 23°42.080'	E 27°34.145'	3.7	9	R 53 280.00	15 995 kg	28 991 kg	19 894 kg	
SP099	S 23°42.069'	E 27°34.137'	0.3	5	R 2 400.00	58 kg	106 kg	73 kg	
SP100	S 23°41.889'	E 27°34.060'	2.2	11	R 38 720.00	6 912 kg	12 527 kg	8 596 kg	

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight	
SP101	S 23°42.062'	E 27°34.133'	1.9	10	R 30 400.00	4 686 kg	8 494 kg	5 829 kg	
SP102	S 23°42.030'	E 27°34.117'	2	9	R 28 800.00	4 673 kg	8 471 kg	5 813 kg	
SP103	S 23°42.020'	E 27°34.117'	1.4	8	R 17 920.00	2 036 kg	3 689 kg	2 532 kg	
SP104	S 23°42.011'	E 27°34.117'	2	6	R 19 200.00	3 116 kg	5 647 kg	3 875 kg	3 trees
SP105	S 23°42.029'	E 27°34.097'	1.6	8	R 20 480.00	2 659 kg	4 819 kg	3 307 kg	2 trees
SP106	S 23°42.019'	E 27°34.103'	2.5	9	R 36 000.00	7 302 kg	13 235 kg	9 082 kg	
SP107	S 23°42.020'	E 27°34.088'	1.6	7	R 17 920.00	2 326 kg	4 216 kg	2 893 kg	
SP108	S 23°42.031'	E 27°34.071'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP109	S 23°42.031'	E 27°34.065'	2.3	8	R 29 440.00	5 494 kg	9 958 kg	6 833 kg	
SP110	S 23°42.028'	E 27°34.059'	1.3	6	R 12 480.00	1 316 kg	2 386 kg	1 637 kg	
SP111	S 23°42.027'	E 27°34.063'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	
SP112	S 23°42.026'	E 27°34.061'	1.5	6	R 14 400.00	1 753 kg	3 176 kg	2 180 kg	
SP113	S 23°42.009'	E 27°34.063'	1.4	7	R 15 680.00	1 781 kg	3 228 kg	2 215 kg	
SP114	S 23°42.008'	E 27°34.071'	1.3	6	R 12 480.00	1 316 kg	2 386 kg	1 637 kg	
SP115	S 23°41.997'	E 27°34.086'	3.5	9	R 50 400.00	14 312 kg	25 941 kg	17 801 kg	
SP116	S 23°41.975'	E 27°34.095'	1.4	7	R 15 680.00	1 781 kg	3 228 kg	2 215 kg	2 trees
SP117	S 23°41.979'	E 27°34.102'	1.5	9	R 21 600.00	2 629 kg	4 765 kg	3 270 kg	
SP118	S 23°41.978'	E 27°34.097'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP119	S 23°41.982'	E 27°34.083'	1.5	7	R 16 800.00	2 045 kg	3 706 kg	2 543 kg	3 trees
SP120	S 23°41.984'	E 27°34.082'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	
SP121	S 23°41.986'	E 27°34.081'	0.5	7	R 5 600.00	227 kg	412 kg	283 kg	
SP122	S 23°41.975'	E 27°34.070'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP123	S 23°41.995'	E 27°34.043'	2.2	8	R 28 160.00	5 027 kg	9 111 kg	6 252 kg	
SP124	S 23°41.999'	E 27°34.032'	1.4	7	R 15 680.00	1 781 kg	3 228 kg	2 215 kg	
SP125	S 23°41.985'	E 27°34.021'	1.6	8	R 20 480.00	2 659 kg	4 819 kg	3 307 kg	
SP126	S 23°41.983'	E 27°34.022'	1.3	8	R 16 640.00	1 755 kg	3 181 kg	2 183 kg	2 trees
SP127	S 23°41.980'	E 27°34.023'	1.2	8	R 15 360.00	1 496 kg	2 711 kg	1 860 kg	
SP128	S 23°41.976'	E 27°34.024'	0.7	6	R 6 720.00	382 kg	692 kg	475 kg	
SP129	S 23°41.969'	E 27°33.995'	0.9	6	R 8 640.00	631 kg	1 144 kg	785 kg	
SP130	S 23°41.979'	E 27°33.990'	0.6	6	R 5 760.00	280 kg	508 kg	349 kg	
SP131	S 23°41.977'	E 27°34.038'	4	8	R 51 200.00	16 617 kg	30 118 kg	20 667 kg	
SP132	S 23°41.957'	E 27°34.073'	4.5	9	R 64 800.00	23 659 kg	42 883 kg	29 426 kg	
SP133	S 23°41.961'	E 27°34.071'	1.6	7	R 17 920.00	2 326 kg	4 216 kg	2 893 kg	
SP134	S 23°41.965'	E 27°34.067'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	2 trees
SP135	S 23°41.969'	E 27°34.065'	0.8	6	R 7 680.00	499 kg	904 kg	620 kg	
SP136	S 23°41.965'	E 27°34.061'	1.5	8	R 19 200.00	2 337 kg	4 235 kg	2 906 kg	2 trees
SP137	S 23°41.966'	E 27°34.058'	1.2	8	R 15 360.00	1 496 kg	2 711 kg	1 860 kg	3 trees
SP138	S 23°41.960'	E 27°34.052'	1.2	7	R 13 440.00	1 309 kg	2 372 kg	1 628 kg	
SP139	S 23°41.953'	E 27°34.047'	1.6	6	R 15 360.00	1 994 kg	3 614 kg	2 480 kg	
SP140	S 23°41.963'	E 27°34.040'	1.7	7	R 19 040.00	2 626 kg	4 760 kg	3 266 kg	2 trees
SP141	S 23°41.951'	E 27°34.027'	1.8	8	R 23 040.00	3 365 kg	6 099 kg	4 185 kg	
SP142	S 23°41.937'	E 27°34.025'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	3 trees
SP143	S 23°41.945'	E 27°34.023'	1.5	6	R 14 400.00	1 753 kg	3 176 kg	2 180 kg	
SP144	S 23°41.937'	E 27°34.034'	0.5	6	R 4 800.00	195 kg	353 kg	242 kg	
SP145	S 23°41.938'	E 27°34.034'	0.8	5	R 6 400.00	415 kg	753 kg	517 kg	
SP146	S 23°41.935'	E 27°34.032'	0.7	6	R 6 720.00	382 kg	692 kg	475 kg	
SP147	S 23°41.936'	E 27°34.027'	1.8	6	R 17 280.00	2 524 kg	4 574 kg	3 139 kg	
SP148	S 23°41.931'	E 27°34.027'	1.7	7	R 19 040.00	2 626 kg	4 760 kg	3 266 kg	2 trees
SP149	S 23°41.926'	E 27°34.030'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	
SP150	S 23°41.922'	E 27°34.018'	2	7	R 22 400.00	3 635 kg	6 588 kg	4 521 kg	
SP151	S 23°41.928'	E 27°34.017'	2.5	7	R 28 000.00	5 680 kg	10 294 kg	7 064 kg	2 trees
SP152	S 23°41.929'	E 27°34.055'	1.5	8	R 19 200.00	2 337 kg	4 235 kg	2 906 kg	2 trees
SP153	S 23°41.929'	E 27°34.058'	1.2	8	R 15 360.00	1 496 kg	2 711 kg	1 860 kg	2 trees
SP154	S 23°41.927'	E 27°34.056'	2	8	R 25 600.00	4 154 kg	7 529 kg	5 167 kg	2 trees
SP155	S 23°41.922'	E 27°34.074'	3	8	R 38 400.00	9 347 kg	16 941 kg	11 625 kg	4 trees
SP156	S 23°41.898'	E 27°34.062'	1	6	R 9 600.00	779 kg	1 412 kg	969 kg	
SP157	S 23°41.895'	E 27°34.042'	0.9	5	R 7 200.00	526 kg	953 kg	654 kg	
SP158	S 23°41.896'	E 27°34.041'	1.3	7	R 14 560.00	1 536 kg	2 784 kg	1 910 kg	
SP159	S 23°41.900'	E 27°34.038'	1.3	7	R 14 560.00	1 536 kg	2 784 kg	1 910 kg	2 trees
SP160	S 23°41.896'	E 27°34.030'	2.1	8	R 26 880.00	4 580 kg	8 301 kg	5 696 kg	
SP161	S 23°41.885'	E 27°34.035'	4	9	R 57 600.00	18 694 kg	33 883 kg	23 250 kg	2 trees
SP162	S 23°41.882'	E 27°34.034'	1.7	8	R 21 760.00	3 001 kg	5 440 kg	3 733 kg	5 trees
SP163	S 23°41.876'	E 27°34.037'	2.4	10	R 38 400.00	7 478 kg	13 553 kg	9 300 kg	8 trees
SP164	S 23°41.879'	E 27°34.031'	2.2	8	R 28 160.00	5 027 kg	9 111 kg	6 252 kg	
SP165	S 23°41.878'	E 27°34.029'	1.2	6	R 11 520.00	1 122 kg	2 033 kg	1 395 kg	
SP166	S 23°41.883'	E 27°34.025'	1	7	R 11 200.00	909 kg	1 647 kg	1 130 kg	4 trees
SP167	S 23°41.876'	E 27°34.020'	0.6	5	R 4 800.00	234 kg	424 kg	291 kg	
SP168	S 23°41.867'	E 27°34.018'	0.9	7	R 10 080.00	736 kg	1 334 kg	915 kg	
SP169	S 23°41.861'	E 27°34.006'	1.9	9	R 27 360.00	4 218 kg	7 645 kg	5 246 kg	2 trees
SP170	S 23°41.861'	E 27°34.001'	0.9	9	R 12 960.00	946 kg	1 715 kg	1 177 kg	4 trees
SP171	S 23°41.877'	E 27°33.995'	2.9	9	R 41 760.00	9 826 kg	17 810 kg	12 221 kg	
SP172	S 23°41.886'	E 27°34.002'	2	8	R 25 600.00	4 154 kg	7 529 kg	5 167 kg	2 trees
SP173	S 23°41.893'	E 27°34.004'	1.9	7	R 21 280.00	3 281 kg	5 946 kg	4 080 kg	
SP174	S 23°41.859'	E 27°32.946'	3	12	R 57 600.00	14 020 kg	25 412 kg	17 438 kg	
SP175	S 23°41.755'	E 27°33.269'	2.4	12	R 46 080.00	8 973 kg	16 264 kg	11 160 kg	
SP176	S 23°41.751'	E 27°33.327'	1.6	12	R 30 720.00	3 988 kg	7 228 kg	4 960 kg	
SP177	S 23°41.734'	E 27°33.361'	1	10	R 16 000.00	1 298 kg	2 353 kg	1 615 kg	
SP178	S 23°41.730'	E 27°33.366'	2.4	11	R 42 240.00	8 225 kg	14 908 kg	10 230 kg	

Waypoint	X Co-ord	Y Co-ord	Circumference	Height (approx.)	Value	Weight (dry)	Weight (wet)	expected weight	
SP179	S 23°41.672'	E 27°33.573'	2.4	10	R 38 400.00	7 478 kg	13 553 kg	9 300 kg	
SP180	S 23°41.669'	E 27°33.574'	1.6	10	R 25 600.00	3 323 kg	6 024 kg	4 133 kg	
SP181	S 23°41.664'	E 27°33.599'	2	10	R 32 000.00	5 193 kg	9 412 kg	6 458 kg	
SP182	S 23°41.631'	E 27°34.848'	2.5	8	R 32 000.00	6 491 kg	11 765 kg	8 073 kg	
SP183	S 23°41.811'	E 27°33.252'	0.9	9	R 12 960.00	946 kg	1 715 kg	1 177 kg	
SP184	S 23°41.815'	E 27°33.244'	1.6	8	R 20 480.00	2 659 kg	4 819 kg	3 307 kg	3 trees
SP185	S 23°41.692'	E 27°33.635'	1.8	9	R 25 920.00	3 785 kg	6 861 kg	4 708 kg	2 trees
SP186	S 23°41.683'	E 27°33.615'	1.8	10	R 28 800.00	4 206 kg	7 624 kg	5 231 kg	
SP187	S 23°41.729'	E 27°33.551'	2.4	8	R 30 720.00	5 982 kg	10 842 kg	7 440 kg	
SP188	S 23°41.617'	E 27°34.223'	3.2	7	R 35 840.00	9 305 kg	16 866 kg	11 574 kg	
SP189					R -	0 kg	0 kg	0 kg	
SP190					R -	0 kg	0 kg	0 kg	
SP191					R -	0 kg	0 kg	0 kg	

3. ANNEXURE B: GENERAL SPECIFICATION FOR REPLANTING TREES

Whenever trees and shrubs are purchased and planted, they are being transplanted. These plants are often field-grown and harvested bare-root (without any soil), balled and burlapped (ball of soil and roots wrapped in burlap), or containerized (after being harvested bare-root).

Trees and shrubs harvested in nurseries are often grown using special cultural practices, such as root pruning, to prepare them for eventual harvesting and transporting to the sales area. Field-grown nursery plants may have 75% of their root system intact after they are dug, whereas trees and shrubs dug from the wild or established landscape plantings may only have 25% or less of their root system intact.

Woody plants that are transplanted in the landscape often do not undergo any of the special procedures used in nurseries before the day they are transplanted. The increased stress on these unprepared plants can make the difference between an attractive, healthy plant and an unsightly, declining tree or shrub. Nursery stock grown in containers is often much more tolerant to transplanting than field-grown or established trees and shrubs.

Consider Transplant Success

The arboreal specialist will advise on the transplanting of the trees.

Before transplanting a woody plant, evaluate whether or not the tree or shrub is likely to be a successful transplant. Transplanting stresses trees and shrubs. Such stress may cause plants to die or to become unattractive. Plants which are already in advanced stages of decline are especially likely to succumb to transplantation stress. Often a young nursery-grown plant will resume growth sooner than an older transplanted tree or shrub and will provide more long-term benefits in the new planting location. Shrubs have better transplant tolerance than trees, deciduous plants better than evergreens, shallow rooted species better than deep rooted species, and younger plants better than older plants. Some species tend to withstand transplanting better than others. When deciding whether or not to transplant a tree or shrub, or to start over with a young plant, consider the species transplant tolerance, condition of the plant, season to transplant, new planting site conditions, the equipment needed, and follow-up care.

Season to Transplant

Some species may survive transplanting any time during the year when the ground is not frozen, but woody plants are preferably moved in the spring after the ground thaws and before the buds on the tree or shrub begin to swell. They may also be moved in the fall after leaf drop but before the ground freezes. Fall planting should take place soon after leaf drop, providing time for new water absorbing roots to develop before the soil becomes to dry. Properly applied antitranspirants may help reduce the effects of winter desiccation in some species. Fall transplant success may be increased by transplanting hardy plants into sites with good soil moisture and wind protection. Woody plants that are transplanted in late spring and early summer, when shoot growth is at its peak, tend to show the greatest transplant injury.

Site Selection

There are great differences in the environmental requirements for each tree and shrub species. Only transplant a tree or shrub where light, moisture, soil pH, and wind exposure are appropriate for the

particular species. All plants require space for root and crown development; therefore, consider mature plant size when planting trees and shrubs.

Soil characteristics are often limiting factors for woody plant survival in a given area. Sometimes the soil is inappropriate for tree growth and will require improved drainage or amendments before trees and/or shrubs are planted at the given location. A soil test should be completed in areas where soil quality is questionable.

Digging

Never allow plant roots to become dry during the transplanting process. Water all woody plants two to three days before digging if the soil is dry. Prior to digging, shrubs and trees with low branches should have these branches tied up to prevent injury during the digging, transporting and planting operations (Figure 1). Marking one side of the trunk will allow a tree to be placed in the same orientation at which it grew in its original location. Consistent orientation may help to prevent sunscald injury to stems.

Figure 1

A sharp spade should be used when digging trees to assure root wounds are clean cut. Although leaving a soil ball attached to the root system will cause less root injury, soil is heavy and sometimes it is more convenient or even necessary to transplant a tree without a soil ball.

Deciduous trees with a stem diameter of less than 1 inch and small deciduous shrubs may be dug either bare root or with a soil ball. Larger plants should only be dug with soil attached. Bare root transplanting should only be done in the spring and care must be taken to prevent damage to roots when removing the soil. Most shrub species require a root ball diameter of about two-thirds of the branch spread. The soil ball for trees should be a minimum of 300 mm for each 25 mm of trunk diameter.

Large shrubs and trees should have a trench dug deep enough to get below all of the major roots (usually 500 mm to 700 mm). The trench should be dug completely around the tree or shrub to be transplanted. This will provide the angle necessary for the spade to undercut roots directly under

the soil ball (Figure 2). Shrubs under 1.5 m tall do not typically require trenching because the soil balls are small enough for the spade to make the undercut without a trench. All roots around the plant must be severed before any lifting takes place. If the plant is removed from clay soils, any glazing of the soil ball should be roughened before burlapping or potting.

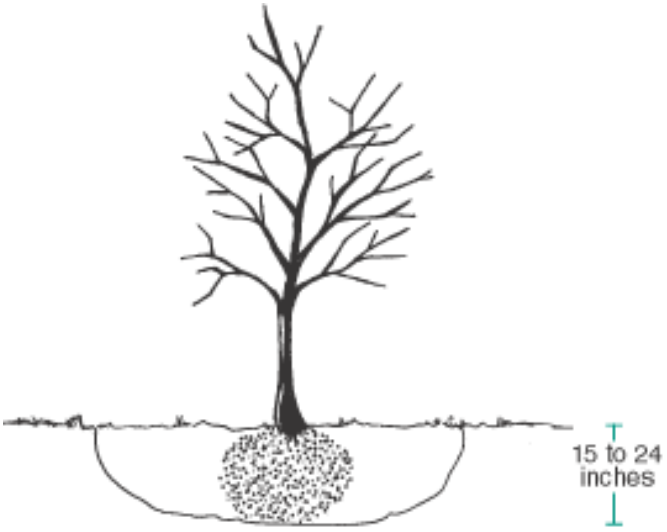


Figure 2

Storing and Transporting

Trees and shrubs that have been dug for transplanting should be planted as soon as possible. Cover a root ball with damp material which will retain moisture (burlap, peat moss, canvas, plastic, etc.) until planting. Plastic should only be used in shaded areas for less than a day or heat injury and/or root suffocation may occur. When a tree or shrub is stored, it should be protected from direct sunlight, winds, and temperature extremes. If any woody plants cannot be planted for more than a week, their roots should be covered with a mulch or moist soil and the plants should be placed in a shaded area. In all cases root systems should not be allowed to dry out. Dry roots can severely decrease the potential for transplant success.

Trees and shrubs must be protected when transporting to a planting site. Covered trucks and vans are best, but if a pickup truck is used, a tarp must be in place to protect the plant canopies and roots from drying winds in transit.

Planting

Proper planting holes are important in tree survival. Holes should be two to three times wider than the root ball (Figure 3). If the soil is clay and the sides of the hole become glazed during digging, the sides of the hole should be roughened with a spade. Prewater holes before planting in dry soils. This prevents initial postplant water from migrating away from the root ball. Plant at the same depth that the tree or shrub was growing in its previous location.

Damaged roots should be clean-cut with a sharp blade prior to planting. If any circling or kinked roots are discovered during the transplanting procedure, sever them to prevent future girdling of the plant. Orient the tree or shrub in the same direction, relative to the sun, as it was facing in the previous location.

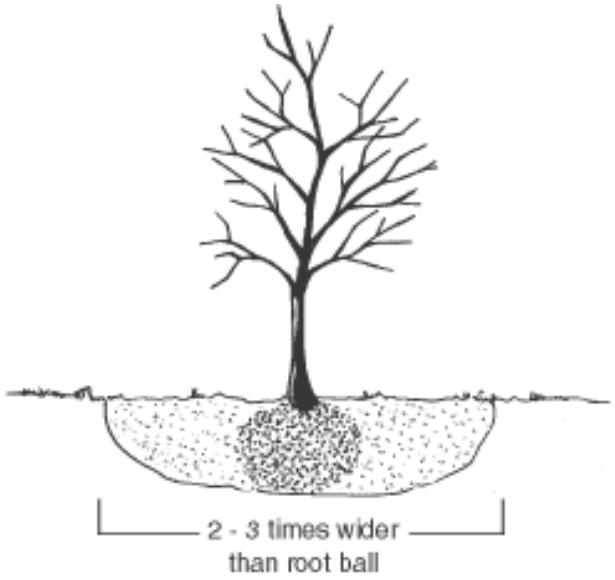


Figure 3

Postplanting Care

Watering. Too much or too little water after transplanting is a major cause of tree or shrub loss. The site should be thoroughly watered immediately after planting. Thereafter, the soil must be regularly monitored to prevent drying out. If rainfall is inadequate, the soil around the plant's roots should be deeply watered approximately every 10-14 days. If you are not sure if the soil is drying, dig down 75mm to 100 mm next to the plant. Wet soil at that depth verifies watering is not needed at that time.

Mulch. Mulches help conserve moisture, moderate soil temperature and control weeds around trees and shrubs. They are placed on the soil surface over the tree or shrub root system. Either organic or inorganic mulches may be used. Organic mulches may be composed of bark or wood chips, straw, partially decomposed leaves or other materials. They should be applied 75 mm to 100 mm deep. Maintain a 100 mm to 150 mm mulch-free area adjacent to the woody stems. Inorganic mulches include plastic, crushed rock, woven fabric, and other materials. Solid plastic mulches may impede or prevent root development because they do not allow air or moisture to move into or out of the soil from above. Occasionally, when soil is poorly drained, mulch should not be used.

Fertilizer. For the first few years, woody plants rarely need nutrients beyond those naturally occurring in the soil. No fertilizers or manure should be mixed with the fill soil, as this could cause root damage. If transplants appear to need fertilizer during the first few years, a totally soluble complete fertilizer should be applied..

Pruning. Pruning may be required when transplanting trees or shrubs. The amount of pruning depends on the size of the root ball and plant canopy, health of the plant, and the species transplanted. Insect infested stems or those infected with disease should be removed during transplanting. Any broken stems should be removed as well. Additional pruning of shrubs may be required to balance the leaf area with the reduced size of the root system, but further pruning of deciduous trees should be postponed for at least one year after transplanting. Pruning of conifers should be limited to diseased, insect infested, and broken limbs. If additional pruning of conifers is necessary, it should be limited to one-year-old wood whenever possible. Late season plantings may

require additional pruning since the plants have less time to become established before winter than those planted earlier in the season. **Mechanical Support**. Mechanical support for trees may be necessary when the tree is tall, slow to recover, heavily foliaged, or planted in a sandy site. Most small trees and shrubs do not require staking or other support and will develop strong trunks faster if allowed to move freely with the wind. For trees that do require mechanical support, staking may be used. Two stakes can be placed opposite of each other and the tree anchored to the stakes with a nonabrasive material, such as a soft, broad, fabric strap (Figure 4). Any support provided to a tree should be removed as soon as the tree can stand alone, usually after the first growing season. The sooner the support is removed, the faster the tree will become stronger.

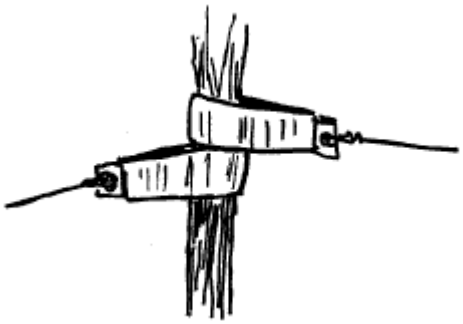


Figure 4

Techniques for Transplanting Large Trees

Special considerations are necessary when moving large trees. If trees are over 75 mm in diameter, special equipment is often required to transport the tree. Depending on the size of the tree and the technique used, the equipment may include hand carts, winches, tree spades, or cranes. If trees will be transported on a truck, precautions must be taken to ensure that they will clear power lines, bridges, and other obstacles. Permits may be required to transport large trees on some public roads. For trees not grown with the benefits of nursery production, root pruning the trees for two or more years prior to transplanting may prove beneficial in reestablishment (Figure 5).

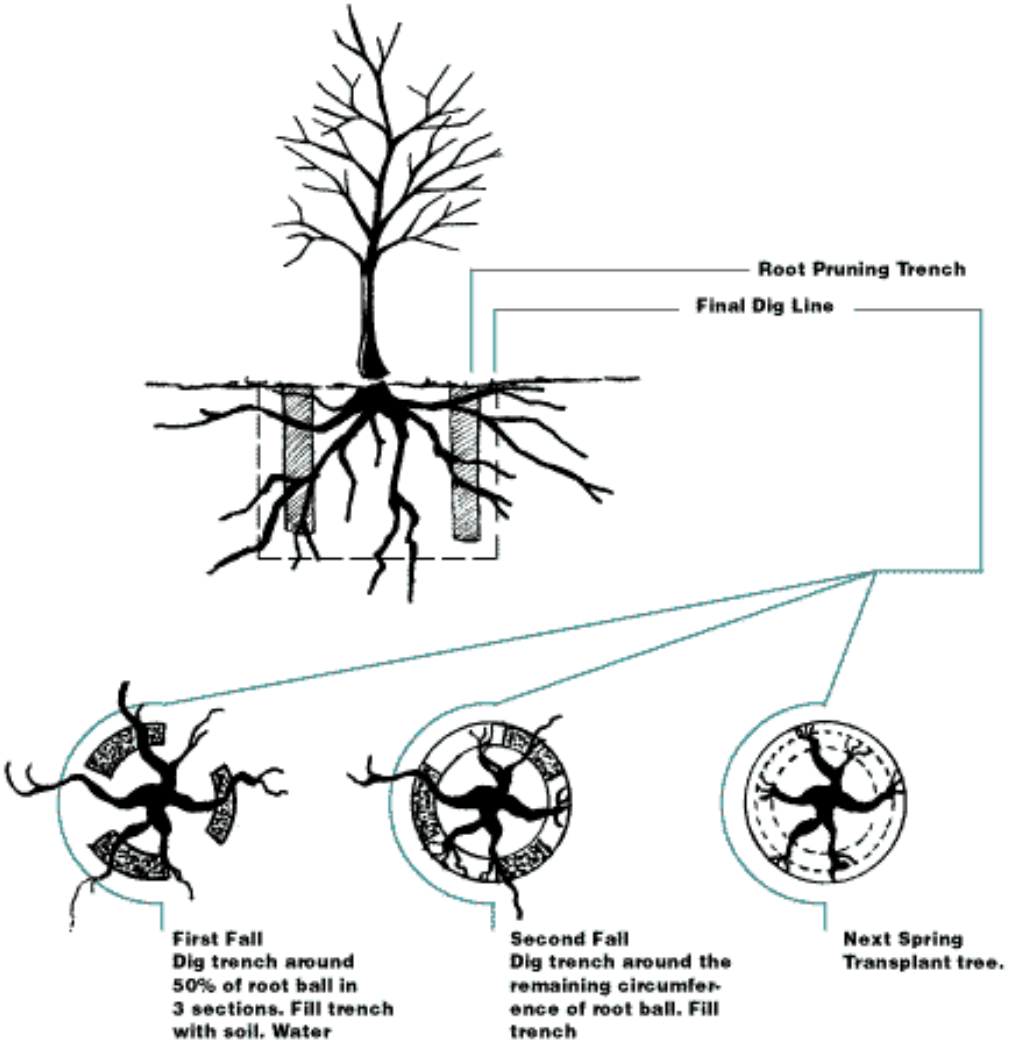


Figure 5

When hand digging, the techniques are the same as for smaller trees. Hand dug large trees may be balled and burlapped (B&B) or boxed. Larger B&B trees should have additional support provided by rope or wire. Chicken wire is a convenient material that can be wrapped outside of the burlap to support root balls. If a crane is used to pull the B&B or boxed tree from the hole, lift from the bottom of the root ball. Ensure that the trunk is heavily padded if a cable must be secured around it to balance the tree during removal. Since there is potential for severe bark injury, cables should be secured around the trunk only when they are absolutely necessary to stabilize the tree for lifting and transporting.

Boxing trees is sometimes preferable to B&B. Boxes will hold the root ball more securely than burlap. This is helpful in sandy soil or when trees are held for extended periods of time. Trees are dug in the same way as B&B, only the root ball is formed to fit snugly into a box. After the lateral roots are severed, the sides of the box are secured in place. Then the descending roots are severed and the bottom of the box is secured before lifting from the hole. Large boxes require heavy metal bands or other support to hold them together. Boxes may also be used to transplant trees which are larger than mechanical spades can successfully transplant. These trees should be side-boxed with the root ball diligently monitored to prevent drying out for at least three months prior to severing the descending roots and securing the bottom of the box.

Tree spades have become increasingly popular and are commonly used by professionals to move trees quickly and inexpensively. Only individuals properly trained in the maintenance and operation of tree spades should use them. Sharp blades reduce damage to roots during transplanting. Crushed or shredded roots caused by dull blades will develop more dieback than clean cut roots. Large trees should not be transplanted with root balls smaller than 300 mm in diameter for each 25 mm in trunk caliper. If multiple trees are being transplanted, all of the trees may be dug and stored B&B or boxed before transporting them to the new site. Increased transplant success may be achieved by tilling a 500 mm to 700 mm wide band adjacent to the outer edge of the root ball. This allows easier penetration of roots from the transplant ball into the adjacent soil area. If planting into clay soils, the sides of the hole should be roughened with a rake or shovel. When tree stability is questionable, guy at three locations, using non-abrasive materials, only until the tree has adequately reestablished anchorage through new root development (Figure 6).

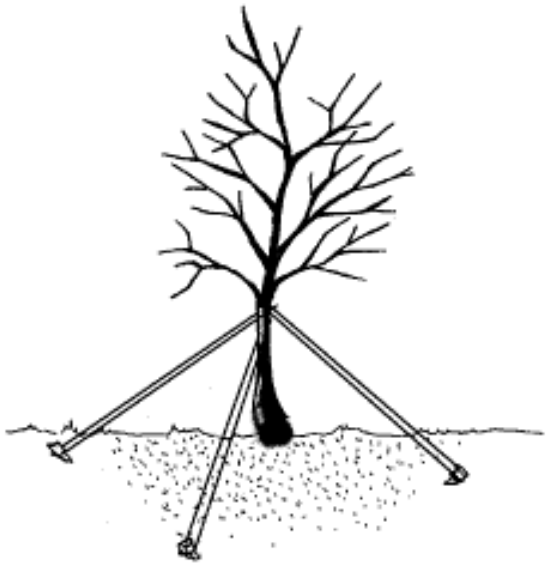


Figure 6

Before moving a large tree, keep in mind that smaller trees of a particular species typically transplant better and catch up in growth to larger trees of the same species. A general rule is for each 25 mm in caliper, a year is required for transplant recovery; therefore, a 100 mm caliper tree may require four years to recover from the transplant procedure before normal, active growth resumes.

4. ANNEXURE C: GENERAL SPECIFICATION FOR THE CARE OF REPLANTED TREES

The Site

The conditions of the planting site are as important as the plant. Soil type and drainage, available water and sunlight, exposure to drying winds, and other factors must be considered. Attempting to match the requirements of the plant to the site increases the survivability, performance, and longevity of the plant selected.

Soil Texture and Drainage

The first step in assessing the condition of the planting site is to examine the soil. Is it sandy and well drained? Is it moist with some organic material? Is it heavy clay and, therefore, wet and perhaps compacted? Construction practices such as cutting and filling, installation of underground utilities, and backfilling against foundations can create great diversity in soil structure. This variability can change drastically with depth and between planting locations on the same property—investigate each planting site.

Soil texture and drainage are closely related. Sandy soils usually are very well drained, have large pore spaces, and poor water-holding capabilities. They are usually associated with dry conditions. Conversely, clayey soils have much smaller pore spaces, are poorly drained, and can suffocate plant roots. The pore spaces in soil are very important to plant growth because the oxygen that occupies them is essential to healthy roots. A tree planted in poorly drained soil will be slow to establish, lack vigor, and often will slowly die.

Because plant roots require both moisture and oxygen for growth, soil drainage should be checked before planting. A poorly drained soil, high in moisture but low in oxygen, prevents both proper root development and growth of beneficial soil micro-organisms that are responsible for decomposing organic matter and releasing plant nutrients.

To test for soil drainage, dig a hole 500 mm deep, fill it with water, and let it stand overnight. If the water has not drained by morning, there is a drainage problem. (Do not test the drainage in this manner after heavy rainfall or before the ground has thawed in the spring.)

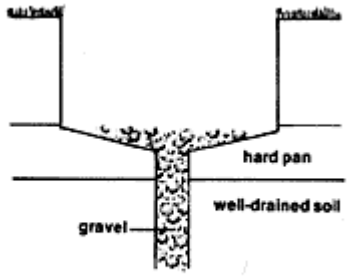


Figure 1. Development of drainage through hard pan layer.

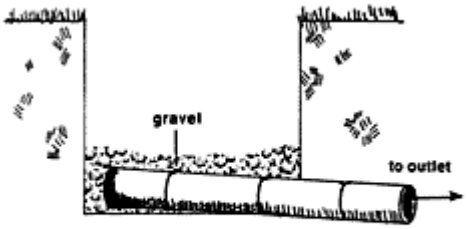


Figure 2. Installation of a drain tile system.

If soil drainage is inadequate, species that are tolerant of poorly drained soils may be planted, or soil drainage may be improved. This can be done in two ways. If a hard pan is present (a compacted, impermeable layer of soil) with an underlying layer of well-drained soil, a hole can be dug down to the permeable layer to provide drainage for the planting hole (**Figure 1**). If the soil is poorly drained and there is no well-drained layer below, a tile system can be laid (**Figure 2**). This, however, is expensive and requires the assistance of a professional for proper design. Simply adding gravel to the bottom of the planting hole will further decrease oxygen availability to the root system.

Compaction of the soil by vehicles or people can reduce pore space and restrict water infiltration, as well as cause physical damage to roots of existing trees. In compacted soil, oxygen is depleted, carbon dioxide accumulates, and root penetration is reduced. This is detrimental to root growth. Aerating the soil will help correct the problem.

Soil pH is a measure of the acidity or alkalinity of a soil. A pH below 7 (7 is neutral) would indicate an acid soil, and a pH above 7 indicates an alkaline soil. Many plants have an optimal range of pH. Most trees thrive on a pH between 5.5 and 6.5. Soil pH is raised by calcium carbonate or lime. Plant species that will tolerate a high pH should be considered for areas with buried concrete, near foundations, or sidewalks, etc. Before a plant is planted on a particular site, a soil test of that site should be conducted to determine possible pH problems or nutrient deficiencies.

Water

The correct amount of water for plants is essential. Select plants that are tolerant of excess water for low areas where water may be standing or very close to the surface, or where a heavy clay soil exists. Standing water or a high water table means low oxygen content in the soil. Therefore, trees and shrubs that can tolerate excessive moisture are often better suited to these poor sites.

Sunlight

Although some plants can tolerate low light conditions, most require full sun to maintain their vigor and attain their full potential.

Location

The location of the planting site in relation to other trees and objects such as buildings, fences, etc. will have a considerable influence on temperature and moisture conditions. Prevailing westerly

winds will have a drying effect on non-protected sites. The south side of a building will be much warmer and drier than the north side. The warming effect of the sun on a cold winter day can cause injury to the bark and may cause the tree trunk to split. For evergreens, this warming can cause water loss and growth activity resulting in needle damage when the temperature is again lowered. Plant hardiness can be greatly affected by the amount of protection provided by individual microclimates.

Planting

Plants

Take special care when transporting plants from the site. The proper vehicle, a truck or trailer, can reduce the possibility of injury from loading and unloading. Often the cost of delivery is well worth the reduced damage to the tree. Protect leaves and needles from the sun and wind by wrapping or covering while in transit. Cushion stems and branches from injury. Always tie the plants down securely and avoid high speed travel.

Methods of Marketing Trees and Shrubs

1. *Bare Root*. Bare root plants are dug from nursery fields in the fall or spring. Soil is removed from the roots, and plants are held in humidity and temperature controlled storage over winter. They must be planted in early spring before growth begins. Because many roots are cut during field digging, bare root plants suffer severely from transplanting shock. Bare root stock is normally the least expensive, but if handled improperly, can have the highest mortality. When handling or transporting bare root stock, keep the roots moist and protected from sun and wind at all times.

2. *Packaged*. Packaged trees and shrubs are bare root plants with their roots packed in moist material such as peat moss or shingle tow. Plant them in early spring before growth starts. Keep packing materials moist, and the package cool and shaded until planted. These plants should be treated as bare root plants.

3. *Field-Potted*. Field-potted nursery stock are field-grown plants dug with a ball of field soil intact which is then placed as is, in a container. These plants should be sold and planted during the spring, as field soil will not provide good plant growth in a container. It is important that the root ball be disturbed as little as possible during the digging and planting process.

4. *Containerized*. Containerized trees and shrubs are dug from the nursery in the spring or fall as bare root stock, placed in a container with a special growing medium, and sold in the container. If containerized in early spring, most plants will be sufficiently established in the container and can be transplanted in late spring, summer, or fall. Roots must be established in the container and hold the media together before transplanting. Do not completely break up the root ball at planting time, but do cut any circling roots prior to planting. The tighter the root ball, the more the root system should be disturbed.

5. *Container Grown*. Container grown stock has been growing in a container throughout most of its production. Because the roots of these plants are not disturbed at the time of planting, container grown plants suffer little transplant shock and may be planted at any time during the growing season. Plants that have outgrown their containers may have deformed root systems, which can result in girdling roots. Large plants may be root bound in the container. The root ball of these plants must be torn or cut open to eliminate subsequent circling or girdling roots (**Figure 3**).

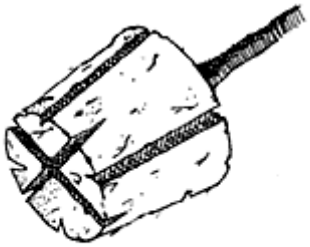


Figure 3. Cutting pattern for rootbound container stock.

6. *Balled and Burlapped (B & B)*. Balled and burlapped trees and shrubs are dug with a firm ball of soil around the roots, and held securely in place with burlap, twine, and sometimes a wire basket. A broken, damaged, or dry soil ball can result in serious damage to the roots. The stem should not wobble in the soil ball. Because of the weight of the soil ball, B & B trees can be difficult to transport and plant without special equipment. B & B stock is often the most expensive, but if handled and planted properly, is as reliable as container grown stock. Always lift B & B plants from beneath the ball, never by the stem. B & B stock can be planted in spring, summer, and fall.

7. *Tree Spade*. Larger plants are often moved with a tree spade—a machine that digs a mass of soil including the plant and some of its roots. The plant and root ball may stay in the machine until it is planted into a pre-dug matching hole, or it may be placed in a wire basket lined with burlap. The size of the root ball is critical and species dependent. An experienced machine operator can make the difference between success and failure. Matching soils from the digging site to the planting site is also important, as is compaction within the planting hole. Roughing up the sides of the hole can offset some of this compaction. Plants can be moved in most seasons with a spade, although plants dug in summer and early fall should have an oversized ball and receive special attention relative to species, condition, handling, and irrigation. Prior to planting with a tree spade, locate all utilities to prevent cutting through wires, cables, etc.

Preparing the Planting Hole

Successful planting starts with proper site preparation. Digging the hole for a new plant is the first step. The hole should be at least 300 to 600 mm wider than the size of the root system (except for direct tree spade planted trees). A larger hole will allow better root growth, especially in poor soil. Roughen the sides of the hole with a shovel and make the hole as wide or wider at the bottom than at the top.

Planting depth is critical. For compacted clay soils or poorly drained soils, plants should be planted at, or slightly higher than, the depth that they drew in the nursery. A good rule of thumb for B & B plants is to plant the tree or shrub so that almost 1/3 or the height of the soil ball is above ground level after planting. This will improve oxygen availability to the roots. Allow for settling, especially if the hole has been dug deep and backfilled. Air pockets should be eliminated by watering during and after backfilling. Poor soils can be amended with organic material or loamy top soil depending on the improvement needed. Peat is not recommended for poorly drained, clayey soils, as it can act

as a sump and draw too much water into the planting hole. Never completely backfill with a soil amendment; only create a transition zone to the existing soil where the roots must eventually grow. Too much soil amendment can create moisture gradients and cause roots to be confined to the planting hole. Remove rocks and debris from the hole and never put rocks or gravel in the bottom of the hole to improve drainage unless it is connected to a drain tile.

Planting the Plant

Bare Root and Packaged Stock

Examine the stock and prune away any diseased or damaged roots or branches. Dig the planting hole and backfill with enough soil to hold the plant slightly higher than the depth it was growing in the nursery. Tamp the soil and center trees with the largest branches facing southwest. Straighten the roots and spread them evenly. Cover the roots with soil, avoiding any clods, rock, etc. Gently raise and lower the plant while adding soil to eliminate air pockets. When the hole is three-quarters full, tamp the soil and fill the hole with water. This should take care of any remaining air pockets. Finish filling the hole with soil, and then water thoroughly.

Balled and Burlapped (B & B)

Carefully set the plant in the hole at or slightly higher than it was at the nursery. The root flare and the top of the ball will indicate original planting depth. Take extra care not to loosen or break the soil ball. Fill the hole one-third full, tamping to remove air pockets. Cut and remove the twine from around the trunk. Next, with wire cutters and scissors, remove as much of the wire basket and burlap containing the soil ball as possible *without allowing the soil ball to fall apart*. Water slowly to saturate the soil ball and to remove air pockets in the backfill. Finish filling the hole with soil. No burlap should remain above the soil surface as it may act as a wick and dry the root ball. Evergreens should not be planted later than October so the roots will have a chance to become established.

Container Grown and Containerized Stock

Carefully remove the container at the planting site. Cutting the container may be necessary. Remove all containers, including biodegradable papier-mache pots. Newly containerized stock may be only slightly rooted; the container must be removed with great care so as not to disturb the root ball. In contrast, container grown stock may be rootbound. If roots are growing in a spiral around the soil ball, the plant is rootbound. These roots need to be separated or they will eventually girdle the plant. Make vertical cuts on the sides of the ball just deep enough to cut the net of roots (**Figure 3**). Also, make a criss-cross cut across the bottom of the ball. Plant the plant the same as a B & B plant.

Tree Spade

The use of mechanical tree spades has become a common method of tree planting. Trees should be watered thoroughly before moving to hydrate the plant and to avoid soil sifting out during transport. The sides of the planting holes should be roughed up with a shovel, rake, etc., to break up compaction caused by the spade. Trees should be placed at or slightly higher than the original grade to allow for settling. After planting, work loose soil into the area between the hole and the tree plug, and water thoroughly.

After-Planting Care

Watering

Newly planted plants require routine watering. Typically, 20 litres to 25 litres, applied to the root ball once a week, is an appropriate quantity of water to add to a newly planted tree or shrub; however, differing soil and weather conditions will affect the frequency with which water must be added. Examine the soil moisture 100 mm to 200 mm deep to determine the need for water. If the soil feels dry or just slightly damp, watering is needed. Soil type and drainage must also be considered. Well-drained, sandy soil will need more water, and more often than a clay soil that may hold too much water. A slow trickle of the garden hose at the base of the plant for several hours or until the soil is thoroughly soaked is the best method. Short, frequent watering should be avoided as this does not promote deep root growth but rather, the development of a shallow root system that is vulnerable to several environmental stresses.

Mulching

Adding a mulch around the base of the plant is a very important part of plant care that is often overlooked. By mulching plants, a more favorable environment is provided for the tree roots. A mulch allows better infiltration of water, holds soil moisture, limits weed growth, and discourages injury from lawnmowers and weed whips.

A 75 mm to 150 mm layer of mulch, spread to form a 1 m to 2 m diameter circle around the plant, should be applied. Keep the mulch material from direct contact with the tree trunk. Wood and bark chips are good mulching materials. A porous landscape fabric that allows gas and water exchange can be used as a broadleaved weed barrier underneath the chips. Plastic under mulch can cause roots to suffocate and is not recommended. Soil tests should be conducted before planting to determine possible nutrient deficiencies that the plant may face.

Fertilization

Fertilization of newly planted plants may be done every 2-3 years in the fall after leaves have fallen or in early spring before growth begins. It can be applied to the surface or placed in holes around the plants. Beware of burning turf if surface-applied. Surface applications should be watered in. Do not apply nitrogen in late summer unless the plant is nutrient deficient, as this can promote new growth that may not harden off properly and can be damaged by winter weather. Phosphorous and potassium can be applied in the fall as they will enhance winter acclimation.

Pruning

Trees and shrubs generally do not need to be pruned immediately before or after planting as most nurseries prune out co-dominant leaders, limbs that rub against each other, and poorly angled branches, prior to sale. If these problems haven't been pruned in the nursery, remove them after planting. Some limbs may be damaged in transit from the nursery to the planting site. Plants should be inspected and these limbs removed immediately after planting.

Staking

Most newly planted trees will do better without staking. Young trees standing alone with their tops free to move will develop stronger, more resilient trunks than those staked for several years. Trunk movement is required to develop strong, tapered trunks.

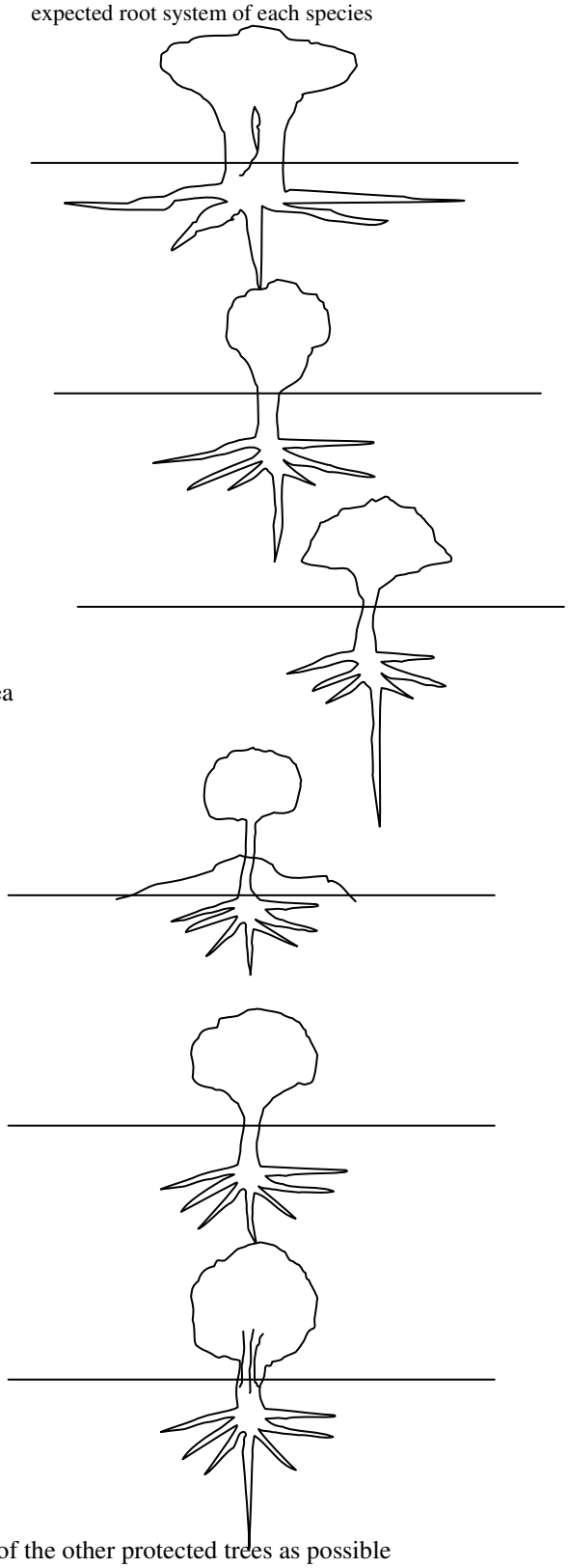
If however, a tree is unstable in a strong wind or is pushed over, then staking is required. A common problem with staking trees is the girdling effect that the ties can have on the tree. Soft nylon webbing or carpet strips attached by grommets to a stake can reduce this damage. Often, wire is too tight around the trunk and will effectively girdle and kill the tree. Whatever material is used, be sure to allow for some movement, and remove the stakes and ties once the tree is established—usually after one year.

Winter Care

Proper winter care begins in the summer. Proper watering and fertilization in spring and summer is required. Watering can be decreased in early fall and increased in late fall to provide water needed to withstand the drying winds of winter. Plants need to go dormant; don't encourage late growth by heavy watering and nitrogen fertilization in early fall.

5. ANNEXURE D: SPECIFIC REQUIRMENTS FOR TREES AT ALPHA SITE

Schematic showing
expected root system of each species



Baobab (Adansonia digitata)

Will transplant easily
Size and weight is a major drawback (soft wood)
Flat root system
Root/shoot ratio about 60%
Roots extend about 3 times further than the crown area

Leadwood (Combretum imberbe)

Probably won't transplant successfully
Very hard and heavy wood
Tap root system
Root/shoot ratio about 30%
Roots extend about 2 times further than the crown area

Camel Thorn (Acacia erioloba)

Cannot transplant successfully
Very hard wood
Deep tap root system
Root/shoot ratio about 40%
Roots extend about 1.2 times further than the crown area

Shepherd's Tree (Boscia albitrunca)

Probably will transplant successfully
Association with termite mounds may lead to problems
Medium hard wood
Heart root system
Root/shoot ratio about 30%
Roots extend about 2 times further than the crown area

Marula (Sclerocarya birrea)

Should transplant easily
Medium soft wood
Heart root system
Root/shoot ratio about 40%
Roots extend about 3 times further than the crown area

Tamboti (Spirostachys africana)

Probably difficult to transplant successfully
Very hard wood
Tap root system
Root/shoot ratio about 40%
Roots extend about 3 times further than the crown area

Requirements from the EIA Ecology Report

1. Remove and relocate the Baobab tree.
2. Remove and relocate, or protect and utilize as many of the other protected trees as possible
3. Contain construction activities within the boundaries of the specified areas
4. Utilize large trees for screening
5. Collect and re-establish bulbs and geophytes

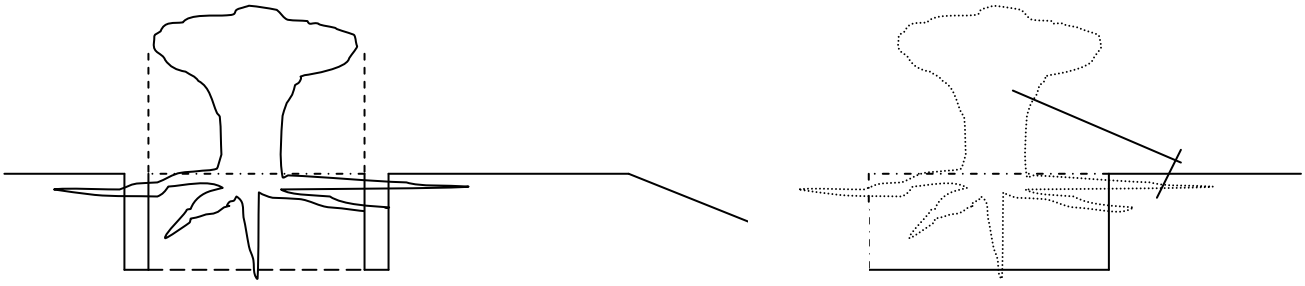
6. Relocate large mammals
7. Contain human movement within construction camp to prevent peripheral impacts on surrounding habitat

Requirements from the Record of Decision

8. Rehabilitate all disturbed areas
9. Protect heritage sites
10. Harvest medicinal plants
11. Protect indigenous vegetation
12. Plant search and rescue of protected species
13. Implement fire control management plan

Specific actions to be taken

1. **BAOBAB:** The final planting position of the baobab must first be determined, then a hole must be dug about 18m in diameter and 2.5m deep, with a compacted access road and ramp on the west side of the hole. The hole needs to be filled with water the day before removing the tree from its current position. A trench is to be dug around the baobab just outside the drip line of the tree (±18m Ø) to a depth of about 2.5m (636m³ of soil). The trench should be filled with water and left to soak for 24 hours. The surrounding area must then be leveled in order to provide access to the tree. The basal roots must be severed and the tree moved onto a sled or lowbed of sorts from the west side of the tree. The expected weight of the tree with rootball and soil is roughly 750 tons. The soil around the root ball should be disturbed as little as possible during loading. Once loaded, the roots should be treated with a sealer and fungicide. After transporting, the equipment should be reversed into the hole prepared for the tree and offloaded, ensuring that the tree retains its original aspect or heading. The soil around the roots should be filled and compacted slightly to stabilize the tree. Three cable stays should be placed on the primary branches or top of the trunk of the tree and anchored into the ground with iron droppers about 20m from the tree trunk to prevent the tree from leaning or falling over in wind. Where the cable stays come into contact with the tree bark, rubber protection such as conveyor belting should be provided in order to prevent bark damage due to chafing.



Excavation Site Planting Site

2. **OTHER PROTECTED TREES:** Camel Thorn – Cannot be transplanted. All these trees should be protected where ever possible, but where it is unavoidable that they be disturbed or removed, they should be cut down and the wood be collected for firewood and any seed pods be collected for fodder.

   Shepherd's Tree – All tree's that cannot be protected must be transplanted using the same procedure as the baobab. The heaviest tree will weigh about 15 tons including its soil mass. These trees are to be transplanted to a temporary site at the nursery until construction is completed.

Leadwood – Not likely to be transplanted successfully. All these trees should be protected where ever possible, but where it is unavoidable that they be disturbed or removed, they should be cut down and the wood be collected for firewood, building material or furniture. Eight of these trees should be transplanted to the nursery area as a test. The heaviest tree will weigh about 2 tons including its soil mass.

Marula – These trees transplant easily. All these trees should be protected where ever possible, but where it is unavoidable that they be disturbed or removed, they should be cut down and the wood be collected. Fifty of these trees should be tansplanted to the nursery area for use in the final landscape for screening. The heaviest tree will weigh about 20 tons including its soil mass.

Tamboti – Probably difficult to transplant successfully. All these trees should be protected where ever possible, but where it is unavoidable that they be disturbed or removed, they should be cut down and the wood be collected for furniture wood. Thirty of these trees should be transplanted to the nursery area as a test. The heaviest tree will weigh about 5 tons including its soil mass.

*(Note that the employer will supply a list of all trees specimens to be transplanted)

3. **CONSTRUCTION ACTIVITIES**: All activities related to construction must be limited to the demarcated areas as far as possible, especially in the area between the proposed road servitude and the power island, in order to preserve the integrity of the natural vegetation and to maximize the screening effect of the bush.

4. **SCREENING:** All trees which are successfully transplanted should be utilized as far as possible in the landscape to aid screening. Landscape architect to incorporate into final landscape plan.

5. **BULBS & GEOPHYTES:** All bulbs and geophytes growing in areas to be disturbed during construction should be dug up and re-established in the nursery before construction begins.

6. **LARGE MAMMALS:** Most large mammals have already been captured and relocated. Any remaining mammals must be protected from hunting or poaching and should be allowed to freely move to adjacent land areas during construction where ever possible.

7. **CONTAIN HUMAN MOVEMENT:** Construction personnel and labourers must be prevented from causing any degredation of undisturbed areas through collection of wood, plants or animals (including small mammals).

8. **REHABILITATION:** All areas disturbed during construction other than the physical footprint must be rehabilitated after construction. This includes planting of grasses, geophytes and trees in these areas. Protected trees may not be disturbed in these areas under any circumstances and fines will be imposed for any damage or destruction of these specimens.

9. **HERITAGE SITES:** Any heritage sites identified before or during construction must be protected. Construction must be stopped immediately if any remains are stumbled upon.

10. **HARVEST MEDICINAL PLANTS:** Provision should be made for the collection of medicinal plants by the local community's traditional healers in all areas which will be disturbed during construction, before commencement of construction activities.

11. **PROTECT INDIGENOUS VEGETATION:** Restrict damage to vegetation only to areas under construction and minimize peripheral damage.

12. **SEARCH AND RESCUE OF PROTECTED PLANTS:** All protected trees within the primary construction servitudes have been identified, marked, mapped and placed on a register. Any other areas to be disturbed also need search and rescue before the time.

13. **FIRE MANAGEMENT PLAN:** The contractor will need to supply a fire protection management plan for approval by Eskom before construction begins. Any fire breaks to be graded need to have a protected species search before grading commences.

6. IDENTIFICATION OF PROTECTED TREES

Baobab (Adansonia digitata) NATIONALLY PROTECTED TREE

Camel Thorn (Acacia erioloba) NATIONALLY PROTECTED TREE

Shepherd's Tree (Boscia albitrunca) NATIONALLY PROTECTED TREE

Leadwood (Combretum imberbe) NATIONALLY PROTECTED TREE

Marula (Sclerocarya birrea) PROVINCIALLY PROTECTED TREE

Tamboti (Spirostachys africana) PROVINCIALLY PROTECTED TREE