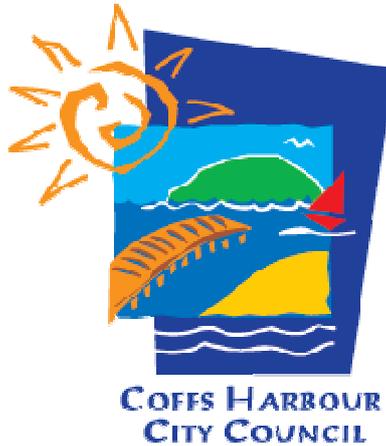


COFFS HARBOUR CITY COUNCIL



**DEVELOPMENT SPECIFICATION
DESIGN**

0250 CHCC Landscape - gardening

Version 1 01 January 2009

0250 LANDSCAPE – GARDENING**1.1 AIMS****Responsibilities**

General: Provide plants that have been grown to a standard that allows them to establish rapidly and grow to maturity.

Maintenance: Encourage and maintain healthy growth for the duration of the contract.

Program: Provide a suitable irrigation, pruning, fertiliser and monitoring program for all plant materials held by the supplier. Take any other precautions required to safeguard the health and well-being of all plant materials prior to and including their delivery to site.

Selections: Conform to the **Selections**.

1.2 CROSS REFERENCES**General**

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following:

[complete/delete]

1.3 STANDARDS**Soils**

Site and imported topsoil: To AS 4419.

Potting mixes: To AS 3743.

Composts, soil conditioners and mulches: To AS 4454.

Tree supply: Follow the guidance given in *NATSPEC Guide: Specifying Trees – a guide to assessment of tree quality* (Clark R. 2003).

1.4 INTERPRETATIONS**Definitions**

General: For the purposes of this worksection the definitions given below apply.

- Imported topsoil: Similar to naturally occurring local topsoil, suitable for the establishment and on-going viability of the selected vegetation, free of weed propagules and of contaminants, and classified by texture to AS 4419 Appendix I, as follows:
 - . Fine: Clay loam, fine sandy loam, sandy clay loam, silty loam, loam.
 - . Medium: Sandy loam, fine sandy loam.
 - . Coarse: Sand, loamy sand.
- Site topsoil: Soil excavated from the site which contains organic matter, supports plant life, conforms generally to the fine to medium texture classification to AS 4419 (loam, silt, clay loam) and is free from:
 - . Stones > 25 mm diameter.
 - . Clay lumps > 75 mm diameter.
 - . Weeds and tree roots.
 - . Sticks and rubbish.
 - . Material toxic to plants.

1.5 INSPECTION**Notice – on site**

Inspection: Give notice so inspection may be made of the following:

- Setting out completed.
- Subgrades cultivated or prepared for placing topsoil.

- Topsoil spread before planting.
- Grassing bed prepared before turfing, seeding, or temporary grassing.
- Grassing or turfing completed.
- Plant holes excavated and prepared for planting.
- Plant material set out before planting.
- Planting, staking and tying completed.
- Completion of planting establishment work.

1.6 SUBMISSIONS

Samples

General: Submit representative samples of each material, packed to prevent contamination and labelled to indicate source and content.

Bulk materials: Submit a 5 kg sample of each type specified. Submit bulk material samples, with required test results, at least 5 working days before bulk deliveries.

Suppliers

Statements: Submit statements from suppliers, giving the following, where applicable:

- Particulars of the supplier's experience in the required type of work.
- Production capacity for material of the required type and quantity.
- Lead times for delivery of the material to the site.

Materials

Supplier's data: Submit supplier's data including the following:

- Material source of supply for topsoil, filling, stone and filter fabrics.

Compost: Submit a certificate of proof of compost pH value.

Plant provenance

Locality: Provide written certification that all plant material has been grown from local provenance stock. If this is not achievable give notice.

Species: Provide written certification that all plant material is true to the required species and type.

Accreditation

Submit evidence of accreditation as follows:

- Accreditation body: [complete/delete]

Log book

Records: Log the following on a weekly basis:

- Description, time and method of application of toxic material.
- Maintenance work details.
- Inclement weather to verify inability to carry out work within the specified time frame.

Availability: Upon request.

Replacement plants

Species: Provide written certification that all plant material is true to the required species and type.

2 PRODUCTS

2.1 TOPSOIL

Source

General: Import topsoil to the **Selections** unless the topsoil type can be provided from material recovered from the site.

Imported topsoil

Recycled content: [complete/delete]

Particle size: Provide soil to the **Particle size table** for the textures nominated in **Selections**.

Topsoil particle size table (% passing by mass)

AS sieve aperture to	Soil textures
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	Fine	Medium	Coarse
2.36	100	100	100
1.18	90 – 100	95 – 100	95 – 100
0.60	75 – 100	75 – 100	70 – 90
0.30	57 – 90	55 – 85	30 – 46
0.15	45 – 70	38 – 55	10 – 22
0.075	35 – 55	25 – 35	5 – 10
0.002		2 – 15	2 – 8

Nutrient levels: Provide soil to the **Topsoil nutrient level table**.

Topsoil nutrient level table

Type	Amount (mg/L)
Phosphorus (P)	0.7 – 4
Potassium (K)	35 – 250
Sulphur (S)	> 40
Calcium (Ca)	50 – 350
Nitrogen (N)	≤ 100
Manganese (Mn)	1 – 15

Site topsoil

General: Provide site topsoil to the **Selections**.

Soil blend: Stripped topsoil with ameliorants noted in **Submissions** to AS 4419 clause 4.6.

2.2 GRASS

Seed

Mixtures: Provide seed mixtures which are thoroughly pre-mixed with a bulking material such as safflower meal. Deliver to the site in bags marked to show weight, seed species and supplier’s name. Provide fresh, clean, dry, mould free, uncoated and viable new seed. Purity (minimum): 98%.

Germination viability (minimum): 86%.

Age (maximum) from date of harvest: 2 years.

Turf

Supplier: Obtain turf from a specialist grower of cultivated turf.

Quality: Provide turf of even thickness, free from weeds and other foreign matter.

Roll width: [complete/delete]

2.3 FERTILISER

Fertiliser

General: Provide proprietary fertilisers, delivered to the site in sealed bags marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses and application rates.

Fertiliser schedule

Fertiliser key	Location	N:P:K ratio	Application rate

2.4 PLANTS

Labelling

General: Clearly label individual plants and batches.

- Label type: To withstand transit without erasure or misplacement.

- Label frequency: [complete/delete]

Health and vigour

Health: Supply plants with foliage size, texture and colour at time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species.

Vigour: Supply plants with extension growth consistent with that exhibited in vigorous specimens of the species nominated.

Damage: Supply plants free from damage and from restricted habit due to growth in nursery rows.

Stress: Supply plants free from stress resulting from inadequate watering, excessive shade or excessive sunlight experienced at any time during their development.

Site environment: Supply plants that have been grown and hardened off to suit the conditions that could reasonably be anticipated to exist on site at the time of delivery.

Root development

Containers: Grow plants in their final containers for the following periods:

- Plants < 25l size: > 6 weeks.
- Plants > 25l size: > 12 weeks.

Freedom from pests and disease

Pests and disease: Supply plants with foliage free from attack by pests or disease.

Native species with a history of attack by native pests: Restrict plant supply to those with evidence of previous attack to < 15% of the foliage and ensure absence of actively feeding insects.

Root system

Requirement: Supply plant material with the root system:

- Well proportioned in relation to the size of the plant material.
- Conducive to successful transplantation.
- Free of any indication of having been restricted or damaged.

Root inspection: If inspection is by the removal of soil test as follows:

- For > 100 samples: Inspect 1%.
- For < 100 samples: Inspect 1 sample.

Sample plants: Replace.

Defective samples: [complete/delete]

Rejection: Root bound stock.

3 EXECUTION

3.1 PREPARATION

Weed eradication

Herbicide: Eradicate weeds using environmentally acceptable methods, such as a non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate.

Manual weeding: Regularly remove, by hand, rubbish and weed growth throughout grassed, planted and mulched areas. Remove weed growth from an area 750 mm diameter around the base of the trees in grassed areas. Continue eradication throughout the course of the works and during the planting establishment period.

Vegetative spoil

Remove vegetative spoil from site. Do not burn.

3.2 ROCK WORK

Existing rock

General: Protect existing rock, rock shelves and rock outcrops from mechanical damage, surface defacement and other works.

Rock surfaces: Report damage or defacement occurring to any rock faces during the course of the Works.

Restoration: [complete/delete]

Replacement: If restoration is not feasible repair the rock face with replaced rocks imported or taken from the site.

New rock work

General: Place rocks while ground formation work is being carried out to the **Placed rock schedule**. Provide site rock, otherwise provide imported rock. Bury rock two thirds by volume, with weathered faces exposed. Protect the weathered faces from damage.

Site rock: Stockpile for future placement and accessibility for lifting. Dispose of other rock off site.

Imported rock: Provide rock which has been selected before delivery.

Placed rock schedule

Source	Rock type and description	Size (mm)

3.3 EARTH MOUNDS

Construction

Placing: Place clean filling in layers approximately 150 mm thick compacted to 85% of the dry density ratio of the surrounding soil as determined by AS 1289.5.4.1. Minimise slumping and further internal packing down.

Edges: Construct changes in grade over a minimum width of 500 mm to smooth, gradual and rounded profiles with no distinct joint.

Existing trees: Maintain the natural ground level under the canopy.

Pipes, culverts and associated structures: Construct mounding to avoid unbalanced loading.

3.4 SUBSOIL

Ripping

General: Rip parallel to the final contours wherever possible. Do not rip when the subsoil is wet or plastic. Do not rip within the dripline of trees and shrubs to be retained.

Ripping depths: Rip the subsoil to the following typical depths:

- Compacted subsoil: 300 mm.
- Heavily compacted clay subsoil: 450 mm.
- **Ripline planting areas: [complete/delete]**

Planting beds

Excavated: Excavate to bring the subsoil to at least 300 mm below finished design levels. Shape the subsoil to fall to subsoil drains where applicable. Break up the subsoil to a further depth of 100 mm.

Unexcavated: Remove weeds, roots, builder’s rubbish and other debris. Bring the planting bed to 75 mm below finished design levels.

Cultivation

Minimum depth: 100 mm.

Cultivation depths (mm):

- **Grassed areas (seeded, turf, strip turf, stolonized): [complete/delete]**
- **Planting areas: [complete/delete]**

Services and roots: Do not disturb services or tree roots; if necessary cultivate these areas by hand.

Cultivation: Thoroughly mix in materials required to be incorporated into the subsoil. Cultivate manually within 300 mm of paths or structures. Remove stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Trim the surface to design levels after cultivation.

Additives

General: Apply additives after ripping or cultivation and incorporate into the upper 100 mm layer of the subsoil.

Gypsum: Incorporate at the rate of 0.25 kg/m².

Subsoil additives schedule

Location	Additive type	Additive rate

Herbicide: Prior to spreading topsoil apply an herbicide treatment as follows:

- Product: [complete/delete]
- Location: [complete/delete]

Placing topsoil

Site topsoil: Do not incorporate site topsoil into the works until soil testing certification has been approved. Remove unauthorised material from the site.

General: Spread the topsoil on the prepared subsoil and grade evenly, making the necessary allowances to permit the following:

- Required finished levels and contours may be achieved after light compaction.
- Grassed areas may be finished flush with adjacent hard surfaces such as kerbs, paths and mowing strips.

Spreading: On steep batters, if using a chain drag, ensure there is no danger of batter disturbance.

Finishing: Feather edges into adjoining undisturbed ground.

Consolidation

General: Compact lightly and uniformly in 150 mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which has the following characteristics:

- Finished to design levels.
- Smooth and free from stones or lumps of soil.
- Graded to drain freely, without pending, to catchment points.
- Graded evenly into adjoining ground surfaces.
- Ready for planting.

Topsoil depths

General: Spread topsoil to the following typical depths:

- Excavated planting areas: If using organic mulch, 225 mm. If using gravel mulch, 250 mm.
- Irrigated grassed areas generally: 150 mm.
- Irrigated grassed areas, heavy use (e.g. playing fields, playgrounds, and public parks): 200 mm.
- Non-irrigated grass areas: 100 mm.
- Earth mounds:
 - . Mass planted surfaces: 300 mm.
 - . Grassed surfaces: 100 mm.
- Top dressing: 10 mm.

Surplus topsoil

General: Spread surplus topsoil on designated areas on site, if any; otherwise, dispose off site.

Designated areas: [complete/delete]

3.5 GRASS SEEDING**Preparation**

General: Prepare the areas to be sown. Spread the fertiliser evenly over the cultivated bed within 48 hours before sowing, and rake lightly into the surface. If a prepared area becomes compacted from any cause before sowing can begin, rework the ground surface before sowing.

Sowing

Conditions: Do not sow if frost is likely before the plant has reached an established state, or in periods of extreme heat, cold or wet, or when wind velocities exceed 8 km/h. Provide even distribution. Lightly rake the surface to cover the seed.

Grass seeding

General: Sow seeded grass areas to the **Grass seeding schedule**.

Rolling

General: Roll the seed bed immediately after sowing.

Roller weight (maximum):

- Clay and packing (heavy) soils: 90 kg/m width.
- Sandy and light soils: 300 kg/m width.

Watering

Before germination: Water the seeded area with a fine spray until the topsoil is moistened to its full depth. Continue watering until germination to keep the surface damp and the topsoil moist but not waterlogged.

After germination: Water to maintain a healthy condition, progressively hardened off to the natural climatic conditions.

Germination

General: Maintain sown areas until the attainment of a dense continuous sward of healthy grass over the whole of the seeded area, evenly green and of a consistent height.

Reseeding: If germination has not been attained within one month, reseed the sown areas.

Reseeding mixture: [complete/delete]

Weeding

Removal: Remove weeds that occur in sown areas.

Spraying: Where necessary spray with a selective herbicide for broad leaved weeds. Do not spray grass seeded areas within 3 months of germination.

Protection

General: Protect the newly sown areas against traffic until well established.

Protection method: [complete/delete]

Fertilising after germination

Six weeks after germination: Spread fertiliser evenly over the sown area and then water in. Do not apply the fertiliser to wet grass.

Ten weeks after grass germination: If the planting establishment period carries through the summer months, spread pelleted sulphate of ammonia at the rate of 250 kg/ha.

Mowing

Height: Mow to maintain the grass height within the required range. Do not remove more than one third of the grass height at any one time. Carry out the last mowing within 7 days before the end of the planting establishment period. Remove grass clippings from the site after each mowing.

3.6 TURFING**Supply**

Elapsed time: Deliver the turf within 24 hours of cutting, and lay it within 36 hours of cutting. Prevent it from drying out between cutting and laying. If it is not laid within 36 hours of cutting, roll it out on a flat surface with the grass up, and water as necessary to maintain a good condition.

Laying

General: Lay the turf in the following manner:

- In stretcher pattern with the joints staggered and close butted.
- Parallel with the long sides of level areas, and with contours on slopes.
- To finish flush, after tamping, with adjacent finished surfaces of ground, paving edging, or grass seeded areas.

Strip turf laying: Close butt the end joints and space the strips 300 mm apart. Apply a layer of top dressing between the strips of turf. Finish with an even surface.

Tamping

General: Lightly tamp to an even surface immediately after laying. Do not use a roller.

Pegging

Stabilising: On steep slopes peg the turf to prevent downslope movement. Remove the pegs when the turf is established.

Fertilising

General: Mix the fertiliser thoroughly into the topsoil before placing the turf. Apply lawn fertiliser at the completion of the first and last mowings, and at other times as required to maintain healthy grass cover.

Watering

General: Water immediately after laying until the topsoil is moistened to its full depth. Continue watering to maintain moisture to this depth.

Mowing

Height: Mow to maintain the grass height within the required range. Do not remove more than one third of the grass height at any one time. Carry out the last mowing within 7 days before the end of the planting establishment period. Remove grass clippings from the site after each mowing.

Turfing

General: Lay turfing to the **Turfing schedule**.

Maintenance

General: Maintain turfed areas until the attainment of a dense continuous sward of healthy grass over the whole turfed area, evenly green and of a consistent height.

Failed turf: Lift failed turf and relay with new turf.

Levels: Where levels have deviated from the design levels after placing and watering, lift turf and regrade topsoil to achieve design levels.

Top dressing

General: When the turf is established mow, remove cuttings and lightly top dress to a depth of 10 mm. Rub the dressing well into the joints and correct any unevenness in the turf surface.

3.7 PLANTING**Individual plantings in grassed areas**

Method: Excavate a hole to twice the diameter of the root ball and at least 100 mm deeper than the root ball. Break up the base of the hole to a further depth of 100 mm, and loosen compacted sides of the hole to prevent confinement of root growth.

Ripline planting

Method: Rip the row and excavate a plant hole for each plant large enough to accept the root ball plus 0.1 m³ of backfilling with topsoil. Clear weeds and other vegetative material within 300 mm radius of the plants. If planting holes are excavated by mechanical means increase the hole size by 100 mm and loosen compacted sides to prevent confinement of root growth.

Locations

General: If it appears necessary to vary plant locations and spacings to avoid service lines, or to cover the area uniformly, or for other reasons, give notice.

Planting conditions

Weather: Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Watering

Timing: Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress.

Placing

Method: Remove the plant from the container with minimum disturbance to the root ball, ensure that the root ball is moist and place it in its final position, in the centre of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil.

Fertilising-Plants

Pellets: In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting.

Application rate (kg/ha): [complete/delete]

Backfilling

General: Backfill with topsoil mixture. Lightly tamp and water to eliminate air pockets. Ensure that topsoil is not placed over the top of the root ball, so that the plant stem remains the same height above ground as it was in the container.

Watering basins for plants in grass

Method: Except in irrigated grassed areas and normally moist areas, construct a watering basin around the base of each individual plant, consisting of a raised ring of soil capable of holding at least 10 L.

3.8 MULCHING**Placing mulch**

General: Place mulch to the required depth, clear of plant stems, and rake to an even surface flush with the surrounding finished levels. Spread and roll mulch so that after settling, or after rolling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in plantation beds, and not closer to the stem than 50 mm in the case of gravel mulches.

In mass planted areas: Place after the preparation of the planting bed but before planting and other work.

In smaller areas (e.g. planter boxes): Place after the preparation of the planting bed, planting and other work.

Extent: To surrounds of plants planted in riplines and grass areas, provide mulch to 750 mm diameter.

Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm.

Mulching schedule

Mulch key	Location	Mulch type	Depth	Stabilisation method

3.9 SPRAYING**Notice**

General: Immediately give notice of evidence of insect attack or disease amongst plant material.

Spraying

Product: Where required, spray with insecticide, fungicide or both.

3.10 STAKES AND TIES**Stakes**

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Stake sizes:

- For plants \geq 2.5 m high: Three 50 x 50 x 2400 mm stakes per plant.
- For plants 1 – 2.5 m high: Two 50 x 50 x 1800 mm stakes per plant.
- For plants < 1 m high: One 38 x 38 x 1200 mm stake per plant.

Ties

General: Provide ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant.

Tie types:

- For plants \geq 2.5 m high: Two strands of 2.5 mm galvanized wire neatly twisted together, passed through reinforced rubber or plastic hose, and installed around stake and stem in a figure of eight pattern.
- For plants < 2.5 m high: 50 mm hessian webbing stapled to the stake.

Trunk protection

Collar guards: 200 mm length of 100 mm diameter agricultural pipe split lengthways.

3.11 COMPLETION

Product certification

Certification: Submit the supplier's written statement certifying that plants are true to the required species and type, and are free from diseases, pests and weeds.

Maintenance manual

General: Submit recommendations for maintenance of plants.

Cleaning

Stakes and ties: Remove those no longer required at the end of the planting establishment period.

Temporary fences: Remove temporary protective fences at the end of the planting establishment period.

Warranty

Parties: Supplier(s) to the principal.

Form: All the plants supplied under these works are true-to-species and type, and free of disease, fungal infection and/or any other impediment to their future growth and that they have been fully acclimatised for the conditions of the site.

Submission of warranty: At the time of each delivery.

4 ESTABLISHMENT

4.1 GENERAL

Responsibilities

Plant establishment: Maintain the contract area during the plant establishment period.

Plant establishment period: The period between the date of practical completion and the date of final completion.

Reporting

Monthly report: Submit regular reports by the last Friday of each month:

- Of the general status of works.
- Include soil test results as required for the fertilising programs.
- Plant replacement requirements.

Incident reports: Report immediately verbally and confirmed in writing any disturbance or incidence affecting or likely to affect the day to day scheduling of works.

Disruption of works by others

Other contractors: Make arrangements to work around the disturbance.

4.2 GRASS

Mowing and trimming

Height: Consistent with the growth habit of the grass variety and maintained at 25 mm to 40 mm throughout the year.

Program: Weekly during the mowing season, November to March, and at bi-weekly intervals during April to October. Do not mow under wet conditions.

Raking: Once every month before mowing, during the mowing season, with a flexible rake. On alternate mowings, adopt a north-south and east-west pattern.

Edges: At the same time as mowing, trim lawn edges to plant beds, pathways, base of trees and other obstacles. Ensure trees and shrubs are not damaged.

Clippings distribution: [complete/delete]

Topdressing

Topdressing material for established lawns: Weed free imported sandy topsoil to a depth of 5 mm.

Program: The spring following establishment.

Topdressing material for remediation of depressions or irregularities: Apply coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

Fertilising

Fertilising: Apply lawn fertiliser at the completion of the first and last mowings of the plant establishment period, and at other times as required to maintain healthy grass cover.

4.3 PLANTING WORKS**Planting**

Planting: Ensure the general appearance and presentation of the landscape and the quality of plant material at date of practical completion is maintained for the full planting establishment period.

Existing plant material: Maintain existing planting and grass within the landscape contract area as specified for the corresponding classifications of new grassland or planting.

Replacements: Replace failed, dead and/or damaged plants at minimum 3 week intervals as necessary throughout the full plant establishment period.

Pruning

General: Prune to the **Pruning schedule**.

Pruning schedule

Plant species	Shape/description	Critical issues	Pruning date

Fertilising

Soil tests: Take samples from both planting beds and lawn areas and conduct tests.

Fertilising: Base the fertilisation program on the soil testing results. Fertilise trees once every two years except where specific problems exist. Generally apply an all purpose fertiliser of N:P:K 10:4:6 at recommended rates. Alternatively apply 12 month slow release fertiliser (such as Nutricote) at the manufacturer's recommended rate. Apply all purpose fertiliser to shrubs annually in two bands and cultivated into the soil 100 mm deep.

Season: Fertilise shrubs and trees in September and March according to their seasonal growth requirement.

Insect and disease control

Responsibility for insect and disease control: [complete/delete]

Period for treatment: Until the problem has been eliminated.

Chemical spray: Apply outside of normal working hours.

Stakes and ties

Generally: If plants are unable to be self supported or if stakes are damaged, stake or restake the plants as follows:

- Drive three hardwood stakes placed obliquely with the first stake on the opposite side to the prevailing winds.
- Do not single stake large plants.

Removal: If plants are robust with well developed systems and are strong enough to no longer require support, remove stakes and ties.

Weeding

Weeds: Unwanted plants and grasses considered invasive to the locality.

Program:

- Lawns: Quarterly and as determined by the relationship of the general lawn condition and weed growth.
- Trees and shrubs: As required for planted, paved and mulched areas to be weed free when observed at bi-weekly intervals.

Method: Clear and keep clear vigorous ground covers 200 mm from the base of any shrub or tree:

- Small areas: By hand.
- Large areas: Proprietary herbicides.

Herbicide application: Avoid windy days or if rain is likely to follow within 12 hours and apply:

- To the manufacturer's instructions and material data and safety sheets.
- When the weather is humid with moderate temperatures and maximum sunlight.
- When the ground has adequate soil moisture.

Rubbish removal

Rubbish: Remove loose rubbish such as bottles, papers, and cigarette butts from the site. Execute this work regularly so that all areas are free from rubbish when observed at bi-weekly intervals.

Leaf litter: Remove from all path and lawn areas.

Leaf litter distribution: [complete/delete]

Mulched surfaces

Inspection: Bi-weekly to determine mulch requirements.

Mulch depth: Maintain 75 mm cover and ensure weed suppression and the quality of finish.

Re mulching: Maintain the original ground levels around the base of plants.

4.4 WATERING

Establishment

Extent: [complete/delete]

Water quality:

- pH between 5.5 and 7.5.
- Total soluble salts less than 1000 mg/litre.
- No substances that would be toxic to plant growth.

Watering program: Minimum three complete waterings soaking to a depth of 150 mm at fortnightly intervals for the first 6 weeks of plant establishment irrespective of natural rainfall.

Water restrictions: Co-ordinate the water supply and confirm the watering regime against Federal and State Government legislation and restrictions at the time.

Irrigation

Irrigation system program: To suit the following:

- The precipitation requirements of the individual zones/stations with regard to types of plants.
- The infiltration rate of the soil/medium and associated physical factors seasons, evaporation, exposure, topography, local authority restrictions.
- An allowance for adjustment or shut down during and after periods prolonged heavy rains.

Equipment maintenance:

- Check all components for proper operation.
- Repair or replace damaged component with equivalent parts.
- Flush any dirt or foreign matter from the system and clear all blockages.

Operation: Ensure by adjustment or replacement of components, that the overall operation of the system is efficient and operational for the entire planting establishment period.

Hand watering

General: Manually water all lawn and planting areas in the absence of an irrigation system or until the proposed irrigation system is fully operational, soaking to a depth of 150 mm for lawn and 300 mm for planting. Avoid frequent dampening of the surface. Allow the surface of the soil to partially dry out between waterings.

4.5 COMPLIANCE

Criteria

Generally: Plant establishment shall be deemed complete, subject to the following:

- Repairs to planting media completed.
- Ground surfaces are covered with the specified treatment to the specified depths.
- Pests, disease, or nutrient deficiencies or toxicities are not evident.
- Organic and rock mulched surfaces have been maintained in a weed free and tidy condition and to the specified depth.
- Vegetation is established and well formed.

- Vegetation cover to cell, seeded and/or hydromulched areas to the **Plant establishment compliance schedule**.
- Plants have healthy root systems that have penetrated into the surrounding, undisturbed ground and not able to be lifted out of its planting hole.
- Vegetation is not restricting essential sight lines and signage.
- Only frangible species are growing within road side clear zones.
- Specified vegetation setbacks from services and road furniture are evident.
- All hard landscape works have been installed and are operating as specified.
- Collection and removal of litter.
- Removal of mulch from drainage and access areas.
- All non-conformance reports and defects notifications have been closed out.

Plant establishment compliance schedule

Plant material	Acceptable failure per area	Acceptable concentration of failure
Tube stock	< 10%	< 15% in any given location
140 mm	< 5%	< 15% in any given location
300 mm or larger	< Nil%	Nil%
Turf	< 5%	Nil%
Cells	< 5%	< 15% in any given location
Direct seeded grass species and cover crop	< 15% (determined by a 1 m ² grid on a testing frequency of 1 grid area per 500 m ²)	< 10%
Cover crop	< 5%	Nil %

5 SELECTIONS

5.1 TOPSOIL

Imported topsoil schedule

Property	Soil code		
	A	B	C
Type			
Texture			
Soil pH			
Organic content by mass			
Plant sensitivity to phosphorus			
Fertiliser N:P:K			
Fertiliser rate			
Product or source			

Site topsoil schedule

Property	Soil code		
	A	B	C
Type			
Texture			
Soil pH			
Organic content by mass			
Fertiliser N:P:K			
Fertiliser rate			

Property	Soil code		
	A	B	C
Plant sensitivity to phosphorus			

5.2 GRASSING

Grass seeding schedule

Property	Mix type code		
	A	B	C
Seed species			
Application rate			
Sowing method			
Mowing height			

Turfing schedule

Property	Turf code		
	A	B	C
Species or variety			
Minimum thickness			
Turf roll size (mm)			
Mowing height (mm)			

5.3 PLANT MATERIAL

Plant material supply schedule

Botanical name	Common name	Size	Quantity (+10%)