WOGOLIN ROAD RECREATION AREA

STAGES 1, 2A & 2B (PLAYGROUND, SKATEPARK & BASKETBALL COURT)

TECHNICAL SPECIFICATION FOR

PLAY SPACE EQUIPMENT & LANDSCAPE WORKS

DATE: 18 August 2020
REVISION: A

PREPARED BY: Nature Play Solutions

INTRODUCTION & TENDER DOCUMENTS

INTRODUCTION

The Shire of Wickepin (the Principal and Superintendent) is undertaking the development of a nature play space, skate park and half basketball court at Wogolin Road Recreation Area-Stages 1, 2A & 2B (the Project) located at Wogolin Road, Wickepin, WA.

Nature Play Solutions have been appointed as the landscape architectural consultant to provide construction and tender documentation of the play space equipment and landscape works for the Project for and on behalf of the Principal.

TENDER DOCUMENTS

The tender documents for Wogolin Road Recreation Area-Stages 1, 2A & 2B comprises of the following:

Technical Specification for Play Space Equipment & Landscape Works;

Drawings as listed:
L00 Cover Page
LS101- Existing Conditions & Demolition
LS102- Master
LS103- Hardworks & Surfaces
LS104- Grading
LS105- Equipment
LS106- Planting

L501 Details
L502 Details
L503 Details
L504 Details

Notify the Superintendent within 24 hours of receiving the Tender if the abovementioned documents are not received. The appropriate documents will be forwarded to the Tenderer within 24 hours of this notification. The Tender period will not be extended due to the provision of these additional documents.

• INSPECTION OF THE SITE AND CONDITIONS

Inspect the site of the works and be satisfied as to the nature and location of the works to be carried out and all other matters, which may affect the works. Be informed of all relevant physical conditions upon or below the surface of the site and be satisfied as to the character of the material in and upon which the works will be carried out.

Prior to commencing work, carry out full inspections and prepare comprehensive dilapidation report and prepare full photographic record of all buildings and structures and fences and paved areas and kerbs and posts and signs etc. which are within 5 metres horizontally from the extent of works and hand report to Superintendent

Assess ground water level and make allowance for that level during the construction of the works.

• GENERAL

• LOCATION OF WORKS AND ACCESS

Limit all direct access from major roads where possible and minimise impact on existing turf areas to be retained.

Advise the name and contact phone number (mobile) of the nominated site supervisor working on site for the duration of the works.

All site delivery areas shall be as approved by the Superintendent prior to use and construction. Conform to all relevant Traffic Management standards and practices as specified and/or relevant Australian Standards.

Deliveries, access and transport shall be confined to standard working hours.

• STANDARDS

All equipment, materials and workmanship supplied for incorporation into the Works shall comply with the respective Australian Standard applicable and which is current as at the date of close of Tenders.

• DESCRIPTION OF WORKS

Supply all materials and all labour required to carry out the complete installation as described in this specification and/or shown on drawings, unless it is specifically mentioned that any part of such work or the supply of any material shall be done by others.

- SAMPLES

The following items shall be submitted as samples for confirmation by the Superintendent prior to order or construction:

Item
• Stabilised Compacted Gravel
• Washed river sand
• Certified IAS Mulch
• Hardwood Garden Mulch
• Rubber IAS
• Cast Insitu Concrete
•

Products which are alternatives to those specified must be approved and samples to be provided if requested by the Superintendent.

- STRUCTURAL DESIGN

The Drawings supplied at Tender are for design guidance only. Submit details to the Superintendent first in draft and then followed in the form of structurally certified documentation and shop drawings. Approval from the Superintendent is to be granted prior to submission to Council for building permit approval and construction.

- BUILDING PERMIT APPLICATION

Submit to the Local Authority all Building Permit Applications as required, inclusive of all fees, charges, and structural advice for approval where required.

Provide to the Superintendent a copy of all building permits, applications and approvals as they are lodged, processed and approved.

Ensure Council Approvals and Building Permits have been received for all works prior to construction unless otherwise authorised in writing.

• SITEWORKS, SETOUT AND EARTHWORKS

- TEMPORARY PROTECTIVE FENCE

Within five (5) working days of the Date of Possession of the site, erect temporary protective fencing to the perimeter of the play space construction area on alignments to the approval of the Superintendent.

Temporary fencing to be a minimum height of 1,800mm and include appropriate footings to resist wind loading.

- DUST AND NOISE CONTROLS

Minimise noise produced by the Works. Limit noise-producing activities to between the hours of 7am to 6pm, Monday to Friday or as approved by the Superintendent.

Minimise dust produced by the Works. Use suitable equipment and procedures, screens (such as site fencing with shade cloth attached) and water spraying to reduce dust nuisance. Spray with water any dust-producing materials before loading in trucks or open containers. Use trucks with suitable covers for transporting dust-producing materials or materials that could be dislodged by wind.

- WORK NEAR EXISTING TREES

Protect trees specified or shown to be retained from damage by site works. Take necessary precautions as described below.

A free standing open mesh fence shall be used to form the tree protection zone. The support shoes must not present a trip hazard to pedestrians and must be rotated parallel with the fence or be positioned behind the fence or be fully contained within the tree protection zone. The structure must be appropriately braced and regularly checked to ensure it has not moved out of the correct alignment.

No trees are to be pruned, or damaged, and vehicles should not park within the dripline of any trees.

The applicant is required to establish a Tree Protection Zone (TPZ) in accordance with AS 4970-2009 Protection of Trees on Development Sites, around all trees within or adjacent to the worksite. The TPZ should not be less than 2m.

No excavation work is to be undertaken within the drip line of the tree canopy unless approved by the Shire of Wickepin.

Do not store or otherwise place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks, even for short periods. Prevent wind-blown materials such as cement from harming trees and plants.

Prevent damage to tree bark. Do not attach stays, guys and the like to trees.

Do not cut tree roots unless approved by the Shire of Wickepin.

- RETENTION OF EXISTING VEGETATION

Note that great importance is placed on retention of any natural or significant vegetation in its current state. Avoid the movement of plant and equipment and stockpiling of materials within the drip line of existing trees.

When there is no option but to work in the immediate vicinity of existing trees that are to be retained, organise and pay for a qualified Arborist to be on site to oversee these works.

The penalties for significant damage as determined by the Shire of Wickepin will be calculated using the Burnley Method.

For the purposes of this Specification a tree is all trees with a 200mm diameter trunk and greater, and one metre or greater in total height.

- WEED ERADICATION

All weed growth shall be eliminated throughout the landscape areas prior to commencement of any soil preparation or planting or grassing works. Weed eradication shall be undertaken by use of an approved non-residual herbicide such as "Roundup" or equivalent. Apply such herbicide only on windless days strictly in accordance with the manufacturer's written directions and any relevant health regulations.

Following the application of the herbicide, the treated areas shall be left undisturbed for a minimum of seven (7) days 'ingestion' period prior to undertaking any further work in such areas.

- EARTHWORKS

Undertake all works necessary to transform the existing levels as shown on the Drawings to those shown as proposed levels on the Drawings.

- STRIPPING AND DISPOSAL OF TOPSOIL

Strip topsoil to a depth of 150mm or to the bottom of the grass root zone. Avoid use of mechanical plant within 4 metres from the base of any existing trees. Unless otherwise permitted or directed, all debris resulting from stripping operations shall be removed from the site and disposed of in a tip in compliance with statutory requirements and pay all fees and charges.

- NOTICE

If the following are encountered, give notice immediately and obtain instructions before carrying out any further work in the affected area:

- Bad ground - Ground unsuitable for the purposes of the works, including fill liable to subsidence, ground containing cavities, faults or fissures, contaminated ground and ground which is or becomes soft, wet or unstable.
- Rock - refer to the clause below entitled 'Rock Excavation'
- Suspected Aboriginal or other artefacts
- Underground springs or watercourses,
- Unknown underground tanks/structures.

- ROCK EXCAVATION

Rock excavation is classed as any excavation material that cannot be undertaken by a hydraulic excavator (Caterpillar 330B or equivalent in good condition) fitted with a rock bucket at a rate of three cubic metres per hour. The excavator shall be capable of exerting a minimum breakout force of 180kN at the bottom of the excavation with a 600mm wide bucket fitted with rock teeth. Excavation in all other classes of material shall be termed common excavation.

Rock excavation shall be undertaken as an approved variation to the Contract at the rate specified in the Schedule of Prices.

- SETTING OUT OF WORKS AND INSPECTION

Set out the works from the points given on the Drawings and for constructing the works to the required line and level.

Provide:

- White painted timber stakes to define the position of trees, paths, paving, garden beds and other construction elements as specified and or on the Drawings
- Bench marks for reduction of levels (if required)

Setting out shall be approved by the Superintendent prior to the commencement of construction.

Due to the nature of play space construction works, minor changes in the layout of the works may be instigated by the Superintendent on site. Allow in the lump sum price for changes in the set-out of the works. A variation to the contract shall only be issued where any changes results in a change in the Bill of Quantities.

- SUB-GRADE PREPARATION

Excavate (box out) sub-grade and shape to the required dimensions and levels as indicated on the Drawings.

Prepare sub-grade to provide a consolidated, sound base, free of depressions, soft spots or any deleterious materials such as tree roots, organic matter and the like.

Uniformly compact the sub-grade to 95% of the modified maximum dry density when tested in accordance with AS 1289 - 1977 Part E2.1 for the upper 250mm. Where the material is to be used as the infill to the tree surrounds do not over compact the area immediately around the tree

- MATCHING UP

Ensure all levels neatly tie in and match up with existing work in adjoining areas to the satisfaction of the Superintendent.

• HARDWORKS

- TIMBER WORK

All timber selections must be approved by the Superintendent prior to installation.

All timber is to be seasoned Australian hardwoods that is sound and suitable for inground use and with superficial cracks only. Timber is to be sustainably harvested and sourced from local suppliers under the governance of the Forest Products Commission. Wherever possible the timber should be sourced from dead trees or salvaged from already felled trees. Timber is to be de-barked, unless otherwise approved by the Superintendent, and sanded where required to achieve a splinter free surface.

Treat all below ground-level timber as follows:

- Coat with HomeGuard Protectacote or similar and approved by the Superintendent
- Encase in concrete footing with fall on concrete away from the timber

Treat exposed timber surfaces with three coats of Dulux Intragrain UltraDeck Natural oil and to manufacturer's recommendations

All bolts, nails, screws and other timber fixings shall be stainless steel, zinc or hot dipped galvanised. All metal fixings to be countersunk into timber and protruding bolts to be trimmed to ensure smooth finish.

- METALWORK

All fasteners and fixings such as bolts, screws, wire, nails, and straps must:

- Be hot dipped galvanised, excluding where specifies otherwise e.g. stainless steel.
- Be of suitable strength for the application.
- Be compatible with adjoining material.
- All bolted masonry anchor type connections to be a minimum of M12 size.

All structural steel to be hot dipped galvanised or to have Duragal finish, unless otherwise specified.

All stainless steel elements to be 316 marine grade, with a Mill or Brushed finish.

All steel to be galvanised shall be prepared and cleaned by immersion in an approved acid bath, thoroughly mixed in cold water, and dried in an oven or chamber. Following this, the steel shall be immersed in a bath of pure molten zinc fluxed with a covering of chloride of ammonia of a capacity sufficient to permit the work to be completely immersed.

When the steel is coated thoroughly and evenly all over and all seams and joints are completely filled with the zinc it shall be removed from the bath, washed in clean fresh water, dried, cleaned and stacked.

Any distortion that may have occurred during galvanising be removed by machine pressure and not by hammering. The coverage rate of galvanising shall be not less than 610gm/m2 except for the case of tubes for which it shall be not less than 458gms/m2.

All hot dipped galvanising shall be clean, smooth, continuous and free from acid spots, cracks, laminations, runs and drips. The coating shall have a minimum thickness of 85 microns.

All welding shall be carried out in accordance with AS 1554.1 2014 - Welding of Steel Structures.

After fabrication, all weld splatter and slag shall be removed by suitable mechanical means and all sharp edges and rough welds rounded off.

Finish visible joints made by welding, brazing or soldering by grinding, buffing and the like methods appropriate to the class of work before painting, galvanising or the like further treatment.

- FENCING

A fence sample must be approved by the Superintendent prior to manufacture and installation.

Install 1200h flat top pool fence
Colour: Black

- LIMESTONE EDGING

Blocks shall be sound, free from stakes, crakes, vents, pockets, veins, fissures and other like defects. Stone shall be stored on site clear of the ground on pallets.

Mortar mix shall be

- One (1) part 'Brickies Lite' cement
- Three (3) parts clean sand or fine aggregate

- Potable Water
- Oxide colour as required and to suit

Measure parts in mixes by volume in calibrated devices and mortar is to be used within 30 minutes of initial adding of water.

Thoroughly mix any colouring pigments with the cement before adding other ingredients, and mechanically mix mortar to an even colour and consistency.

Mortar in face blockwork shall match the colour of the specified blocks to the approval of the Superintendent.

Provide ducts and conduits as necessary through walls to accommodate the requirements of the irrigation system and any other services.

Provide reinforcement to piers and footings as indicated on the Drawings and as specified.

Upon completion, clean down all new work and adjoining surfaces where necessary, by appropriate methods, which shall be subject to the Superintendent's approval.

- RETAINING WALL ENGINEERED BLOCKS

Blocks shall be sound, free from stakes, crakes, vents, pockets, veins, fissures and other like defects. Stone shall be stored on site clear of the ground on pallets.

Mortar mix shall be

- One (1) part 'Brickies Lite' cement
- Three (3) parts clean sand or fine aggregate
- Potable Water
- Oxide colour as required and to suit

Measure parts in mixes by volume in calibrated devices and mortar is to be used within 30 minutes of initial adding of water.

Thoroughly mix any colouring pigments with the cement before adding other ingredients, and mechanically mix mortar to an even colour and consistency.

Mortar in face blockwork shall match the colour of the specified blocks to the approval of the Superintendent.

Provide ducts and conduits as necessary through walls to accommodate the requirements of the irrigation system and any other services.

Provide reinforcement to piers and footings as indicated on the Drawings and as specified by Structural Engineer.

Selection: Blokstone Limestone block 1000 x 350 x 350.

- INSITU CONCRETE

Concrete shall be 'batch-mixed' and no material shall be added to concrete after batching. Concrete shall have a minimum compressive strength at twenty-eight (28) days of not less than twenty-five (25) Mpa.

Steel reinforcing to be free from loose rust or matter likely to impair the bond with concrete.

During and immediately after placing, the concrete shall be thoroughly compacted by mechanical vibration or if necessary by hand to ensure a good surface free from honeycombing.

All work shall be of uniform and neat appearance.

All excess concrete shall be removed from site and disposed of to an approved tip and pay all costs.

Ensure adequate moisture is retained for proper curing.

The colour of the cast insitu concrete footpaths is to be cream, unless otherwise indicated on the drawings.

The colour of the cast insitu concrete Dry Creek is to be cream with light exposed aggregate.

- CONCRETE KERB

Concrete shall be minimum strength 32 MPA.

Kerbing shall be constructed using machine formed extruded insitu concrete to have dimensions as indicated on the drawings.

Kerbing is to be free from imperfections and irregularities in width and thickness and must be constructed in good straight line and/or smooth even radius curves.

Top surface of all kerbing must finish flush with surrounding surfaces and/or ground level.

Construct control joints at 3.0 metre maximum centres and at least one quarter of the depth of the kerb section.

Protect kerbing to prevent cracking or damage.

The colour of the concrete kerbing is to be cream, unless otherwise indicated on the drawings.

• BOULDERS & ROCKWORK

Boulders are to be quarried sandstone with approximate diameters between 500 – 1,000mm.

Boulders are to be used to retain slopes in areas indicated on Drawings.

Place boulders on compacted subgrade with largest boulders at the base of slopes and smaller towards the top. A minimum of 50% of the boulder to be buried and ensure no movement once placed.

Place boulders flat face uppermost to form steps with maximum of 550mm level difference between adjacent boulders.

Mortar between boulders and ensure no entrapment points.

• IRRIGATION SYSTEM

Contractor to supply and install the irrigation system. Drawings to be submitted to The Shire of Wickepin for approval prior to installation. Sprinklers are to be Hunter gear drives and Hunter pop ups and drippers (for any trees).

• SURFACES

• PLAY SAND

Play sand is to be washed river sand that is clean and free of rocks, sticks, rubbish, etc.

• STABILISED COMPACTED SUMMERSTONE

Summerstone is to be 5mm stones with fines, which is to be stabilised and compacted as a hard-wearing pathway and is to be stabilised with cement at 5%.

Install to 100mm in depth. Placed upon the subgrade and compact to achieve a dense solid surface that is resistant to scuffing and scouring. Maintain the moisture

content at the optimum level for placing and compaction throughout the entire construction period. Ensure fully compacted depth of material is achieved, and the surface is even, fully compacted and free draining.

- RUBBER IMPACT ATTENUATING SURFACING

Rubber surfacing to be compliant with AS/NZS 4422:1996.

Rubber surfacing to consist of a 15 millimetres thick EPDM high density top layer over a 35 millimetres thick impact attenuation layer. Confirm required impact attenuation layer depth with play equipment supplier. Rubber to be laid on 100mm thick compacted blue metal dust sub-base.

Rubber fibre used in the impact attenuation layer to consist of 100% recycled, processes tyre rubber with all impurities, including nylon and metal particles, removed.

Rubber used in the high density wearing layer shall be all new material, granulated (not shredded) in texture.

Bonding material shall be a 100% solids, MDI based polyurethane prepolymer specifically developed for bonding recycled rubber in Australian climate conditions.

Rubber surfacing to be laid to a consistent plane and free draining with no depression or mounds in the surface to cause ponding.

Rubber surfacing to ramp down with 'beach edge' into any adjacent fall zone mulch areas.

The nominated supplier for the rubber surfacing to guarantee that their product will perform satisfactorily in the fashion that it was intended for a minimum of five (5) years from the date of installation.

Presentation layer colour: even mix of Red/ Earth Yellow/ Ivory.
Provide a sample to the Superintendent for approval.

- CERTIFIED IAS MULCH

Loose fill playground mulch to be compliant with AS/NZS 4422:1996 41.2

Mulch shall be free of weeds, seeds and other deleterious material and contain no large or sharp woody particles that could cause injury.

A uniformly graded seasoned hardwood material similar to that marketed as "Playground Certified Mulch" having a diameter not greater than 22 millimetres and not less than six (6) millimetres in any one dimension. A sample is to be provided to Superintendent for review and to be approved by the Superintendent prior to delivery to site.

Mulch to be consolidated and finished to produce smooth and even grades, at a thickness of 300 millimetres as indicated.

• PLAY EQUIPMENT AND STREET FURNITURE

Play space equipment and associated soft fall areas are to comply with the relevant Australian Standards and the requirements of the Local Government Authority.

A play space equipment audit is required to be conducted after installation and provided to the Superintendent prior to the award of Practical completion and the use of the equipment by the public. The safety audit shall cover all aspects of the play equipment and the surrounding play area inclusive of an analysis of fall height and the adequacy of impact attenuation areas.

EQUIPMENT

- E01 – Basketball Half Court

Court- cast insitu concrete court with 5 x 9m half court standard line marking.

Basketball board & ring-
Supplier: Play Hard
Code: S100
Specification: Basketball Tower, Fixed with 1.7m Outreach on a 125mm SQ Pole, Hot Dip Galvanised R12B Double Ring Rim and Net.
Finish: All Weather Polyboard Backboard and Frame.

Play Hard Sports Equipment
24 Earn Harley Drive, Burleigh Heads QLD 4220
T: 07 5593 4494
E: email@playhardsports.com.au
W: www.playhardsports.com.au

- E02 – Skate Park

Refer to Skate Sculptures documentation.

- E03 – Log Bench

Lypa product code: L002200 or similar approved

- E04 – Stilts

Lypa product code: L004307 or similar approved

- E05 – Concrete Steppers

Lypa product code: L010500 or similar approved

- E06 – Slide Platform with Balustrade

Lypa product code: L031300 or similar approved

- E07 – Concrete Slide 1200

Lypa product code: L0000201 or similar approved

- E08 – Single Flying Fox with Timber Platform

Lypa product code: L005504 or similar approved

- E09 – Balance Sleeper with Posts

Lypa product code: L005203 or similar approved

- E10 – The Water Tower

Lypa product code: L031400 or similar approved

- E11 – Cubby Creator

Lypa product code: L011201 or similar approved

- E12 – Water Play Table

Lypa product code: L001600 or similar approved

- E13 – Water Channel

Lypa product code: L003102 or similar approved

- E14 – Bridge- Humpback

Lypa product code: L001706 or similar approved

- E15 – A Frame Triple Swing with Basket

Lypa product code: L003406 or similar approved

- E16 – Sand Play Table

Lypa product code: L001302 or similar approved

STREET FURNITURE

- SF01 – Light Poles

Supplier: Orca Solar Lighting

Product Code: Avero Solar Lighting System

Inclusions: Avero Type 2 solar pole top luminare include 60W monocrystalline PV array with bird spikes, 30aH LifeP04 battery and programmable PIR sensor and cast aluminum housing with dual powder coat finish to suit 60mm OD vertical spigot.
Round tapered 5.8m high, dual powder coat HDG pole with black finish, 60mm OD x 108mm vertical spigot and 1.0m Deep 233 PCD Foundation Cage. Set onsite to operate at 5.6 watts all night. Remote control included for future adjustment.

Refer to drawing 'Wogolin Road Recreation Area- ISO Plot' **produced by Orca Solar** Lighting and dated 16/07/20.

- SF02 – Bins

Street Furniture Australia product code: WBE-F240-BAT Dual or similar approved
Roof: Angle
Body: Battens
Frames and Panels: Stainless Steel 316
Signage: Recycled Only
Mounting: Surface

- SF03 – Chunky Bench

Lypa product code: L018504 or similar approved

- SF04 – Picnic Table

Lypa product code: L018600 or similar approved

- SF05 – Shade Structure (3)

Lypa product code: L015600 or similar approved

- SF06 – Bench Seat With Back Rest

Lypa product code: L013800 or similar approved

- SF07 – Transitional Bench

Lypa product code: L009800 or similar approved

- SF08 – Shade Structure (2)

Lypa product code: L015600 or similar approved

• SOFT LANDSCAPE WORKS

• SOIL CONDITIONER

A high-quality soil conditioner shall be applied to all planted and grassed areas. Soil conditioner shall be free from pathogens and heavy metals and produced in accordance with AS 4454-2003.

Garden beds

Import and spread 50mm depth soil conditioner and thoroughly incorporate into top 150mm of topsoil. Lightly compact topsoil, water well and allow time for soil levels to settle before planting.

Turfed areas

Import and spread gypsum at a rate of 1kg per square metre and thoroughly incorporate into top 200mm of existing soil.

For turf planting incorporate pelletised chicken manure (Dynamic Lifter or equivalent).

• GARDEN MULCH

Apply 80mm thick seasoned hardwood mulch to all new garden beds.

Mulch shall be comprised totally of organic material and free from silt material.

Care shall be taken when spreading mulch to avoid plant damage.

Mulch shall be kept clear of plant stems, any above ground sprinklers and final level shall be kept below kerbs and edging.

• PLANT & TREE STOCK

Trees, shrubs and plants to be supplied by approved accredited suppliers and be in accordance with the Plant Schedule and Drawings and to the requirements of AS2303.

Plants to be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease and insect pests, with large healthy root systems and no evidence of having been restricted or damaged. Root growth to loosely fill the pot, but not overgrown (root bound).

Trees shall have a single leading shoot, be self-supporting and straight, display a balanced canopy and have consistent and even root development.

The turf shall be certified free of the Sting nematode (Morulaimus spp). It is to have a uniform, deep green colour and shall not be discoloured.

All stock to be weed free.

- PLANTING

When setting out plants near underground services, manholes, cable pits, fire hydrants, lamp standards, retaining walls, kerbing, roads, paving and other obstructions occur, plant trees, shrubs and plants clear of such service and obstructions and protect services and obstructions from damage by machines and equipment.

Carry out final trimming and grading to the sub-soil as required for the Works. The finished levels of garden bed areas shall be 20mm below adjacent paths (for garden beds, include 100mm mulch depth).

Label at least one plant of each species or variety in a batch with a durable, readable tag.

Order sufficient quantities to allow for plant failures, replace with plants of the same specified type, quality, maturity and size, and plants which fail or are damaged during the work.

Wherever possible, plants shall be planted immediately after delivery to the site. If this is not possible, keep them in good condition by appropriate storage methods. Prevent plants and trees from drying out or damage from any cause including frost, wind, sun, rain, animals and the like. Provide an on-site nursery for holding plant stock on site for more than 48 hours, of sufficient size, with provision for watering.

Place pots in the garden beds prior to planting to ensure set out looks balanced and well-spaced and follow planting groups detailed in the Drawings. Follow density and spacing requirements indicated on the Drawings and on the Plant schedules on the Drawings.

Excavate holes to double the size of tree/plant container as per the Drawings, unless otherwise shown on the Drawings. Break up the base of the hole to a further depth of 100mm, and loosen compacted sides of the hole, as necessary to prevent confinement of root growth to the hole.

When the hole of bed appears to be of correct size and not before, remove the plant from the container with minimum disturbance to the root-ball, and place it in its final position, in the centre of the hole and plumb. Where necessary, tease out root-balls before planting (except for plants from the PROTEACEA and RUTACEAE family).

Prior to backfilling all plants and trees are to receive approved fertiliser tablets in accordance with manufacturer's instructions.

Trees shall be planted with fertiliser tablets such as Agriform or similar approved.

For natives:
- 200 and 100 litres pot size plants to have three 10g tablets
- 35 and 45 litres pot size plants to have two 10g tablets
- 15 litres and 200mm pot size plants to have one 10g tablets
- 130-150mm pot size plants to have one 10g tablet

For exotics:
- 200 and 100 litres pot size plants to have six 10g tablets
- 35 and 45 litres pot size plants to have four 10g tablets
- 15 litres and 200mm pot size plants to have two 10g tablets
- 130-150mm pot size plants to have one 10g tablet

Backfill plant holes level with top of root-ball, lightly compact the soil surrounding the plant to remove air pockets, finish compacting/closing air pockets by hand watering. A shallow "dish" shall be created around the plant to assist with water collection as indicated on the Drawings. If backfilling is required to correct the depth, use top-soil as specified.

Backfill trees to lower bottom of the hole and water thoroughly until a pool of water is formed. Continue backfilling hole and poking soil at the same time. Use a stake or shovel handle to poke soil at the bottom of the hole, use circular movements and water in well at the same time. As water travels downwards into bottom of holes, it should be dragging soil downwards and close air pockets. Repeat poking all sides of tree hole until there are no air pockets.

Construct a watering basin around the base of each individually planted tree or shrub of 200mm pot size and above, consisting of a raised ring of soil of minimum diameter of 1,000mm capable of holding a minimum of 10 litres of water.

Support each tree as nominated on the plans (and large shrubs where directed) with hardwood stakes of the number and dimensions nominated on the Drawings. Subject to peculiar or fluctuating site conditions additional stakes may be required.

Locate stakes parallel to prevailing wind direction on site or adjoining roads as nominated. Do not pierce root ball.

All ties to be approved flat plastic, rubber or hessian tree ties of minimum width of 10mm. Ties to be located as directed by the Superintendent in accordance with tree size. All ties to be placed in a figure of eight around stake and stem allowing adequate support without constricting plant growth.

All broken ties to be replaced quickly and adequately to prevent tree damage.

At time of planting provide by hand watering a minimum of 5 litres of water to each tree, shrub and plant. Repeat watering to each tree, shrub and plant with 5 litres of water on each alternate day up to Practical Completion. Watering of plants by a reticulation system will not be accepted unless approved by the Superintendent.

The following rates are provided as a general guide only. Adequate water should be applied to keep plants vigorous, well established, hardened off, of good form consistent with species or variety.

On completion ensure that trees, shrubs and plants are in first class, presentable condition by removing dead, damaged and unhealthy branches and trimming where necessary to result in balanced growth typical of their normal form.

Give the Superintendent at least three (3) working days' notice before completing each project so that he may inspect the work upon completion.

Remove any excess soil from garden beds to avoid changing final grading levels.

- TURF – INSTANT ROLL-ON

The existing soil shall be free of weeds, rubbles and roots and be graded to allow specified soil and turf additions to conform to specified finished levels.

Grade areas to true and even grades and falls and finish flush with adjoining kerbs to roads, parking and paved areas, and with footpaths, manholes, pit and the like. Where plumbing disconnector traps and rainwater relief overflows occur, finish ground level 75mm below overflow level.

Obtain specified turf species from a specialist grower of cultivated turf. Obtain a warranty from the grower that the turf is true to species and free from weeds, fungus, inspect pests and other deleterious matter. Turf must be certified as sting nematode free from a NATA accredited laboratory and must have a declaration that the turf has not been treated with a nematicide in the 12 months prior to testing.

Turf shall be planted within 24 hours of being dug and shall be kept continuously moist. Turf shall be delivered to site in approved covered containers and fully protected from drying out, damage or contact with injurious substances.

Turf deemed unacceptable in quality shall be rejected from site prior to laying. All lifting, removal disposal and replacement of the rejected turf shall occur as quickly as possible to minimise impact on the presentation of the works.

Before commencing planting, ensure adequate watering services and equipment are available and properly functioning. Areas to be planted shall first be watered to a depth of 100mm and the planting shall be carried out immediately after watering.

Lay the turf along the land contours with staggered, close butted joints, and so that the finished turf surface is flush with adjacent finished surfaces of paving and the like. No gaps, overlays, or vertical gaps between rolls. As soon as practicable after laying, roll the turf with a roller weighing not more than 90kg/m of width or run a plate compactor in a minimum of two directions, to produce a firm, even and level surface. On slopes too steep for rolling, lightly tamp turf into place. There are to be no obvious holes, undulations, or localised depressions.

Throughout the contract up to Practical Completion, watering shall be properly undertaken, either by irrigation system or hand as necessary (including during the failure of any nominated reticulation system), to keep the turf areas moist to a depth of 100mm.

• PRACTICAL COMPLETION

Provide five (5) days' notice to Superintendent to advise when practical completion will be achieved.

Temporary fencing to be maintained until practical completion has been granted by the Superintendent.