

## 4. Specification

## 1. **GENERAL INFORMATION**

### **CO-ORDINATION WITH SUPPLIERS OF PLAY EQUIPMENT**

Where a manufacturer's products have to be attached to a structure or are to be used in the works, the Contractor must ensure that allowance is made for the correct installation and that openings are the correct dimensions to fit the product.

### **SITE LOCATION**

Waterloo Crescent Park, St Kilda is located at 4 Waterloo Crescent - Melway reference map 2P D6.

### **SCOPE OF WORKS**

The works include construction of all work necessary for the proper completion and testing of works shown or implied in the Drawings and or Specification.

The works comprise the provision of all materials, plant, and labour of whatever kind necessary for the complete and proper undertaking of the works described.

The Contractor shall be fully familiar with the type of work necessary and have visited the site to ensure a full understanding of site requirements and therefore the extent of work.

Where works are continuous with adjacent existing works, the Contractor is responsible for making the proper junction between the two sections and for making good any damages caused to adjoining works.

The works include but are not limited to:

- a) steel edging;
- b) lighting works;
- c) site furniture works (picnic table and benches, timber seats, electric barbecue, fencing and signage);
- d) playground works/ synthetic surfaces and equipment installation;
- e) granitic sand path;
- f) concrete base removal;
- g) tree removal;
- h) recycled brick surface and path edge;
- i) tree planting;
- j) shrub planting; and
- k) garden bed (mass) planting.

### **PROJECT WORKS PROGRAMME**

The Contractor shall submit a project works programme within seven days of a written request to do so.

The project works programme shall include sufficient detail for tender analysis and be in a form as necessary to show:

- a) the duration of each activity in working days;
- b) the sequence of interdependent activities;
- c) milestones which identify significant events including completion of separable parts; and
- d) company rostered days off, public holidays and non-working days.

All construction works are to commence no later than 1 February 2012. The Contractor is permitted access to the site from 24 January, 2012. The Contractor to confirm with the Superintendent scheduled dates of commencement.

## **GENERAL LANDSCAPE CLAUSES**

### **DESCRIPTION OF WORKS**

This Contract comprises the execution generally of the landscape works including supply of all labour and materials as detailed within the landscape plans, associated documents and this Specification.

The whole of the work shall be executed in strict accordance with this Specification, the General Conditions of Contract, the accompanying Drawings and with any working drawings furnished by the Superintendent as the work proceeds and to the satisfaction of the Superintendent.

The Specification and Drawings represent as fully as possible the requirements and intentions of the Contract. Any other operations which may be reasonably inferred from these documents to form part of the true intent and meaning of this Contract, although not specifically stated as such, will be deemed to have been included and due allowance for their execution must be made.

### **OCCUPATIONAL HEALTH & SAFETY**

The Contractor shall be responsible for ensuring that the requirements of the *Occupational Health and Safety Act 2004* and all relevant Regulations and Workcover requirements.

It is important that work be carried out in a safe manner to ensure the safety of the Contractor's work force and the Principal's staff or agents who have access to the site as well as the general public.

Works shall be carried out in accordance with the occupational health and safety ("OH&S") requirements of the Specification. Prior to commencing work the Contractor shall supply to the Superintendent with a job specific occupational health and safety plan ("the OH&S Plan") which, on approval shall be implemented throughout the duration of the works.

The OH&S Plan shall include OH&S procedures relating to plant safety, workers' safety and public safety and shall be instituted as a minimum requirement under this Contract.

The Contractor must be registered as an employee pursuant to the *Accident Compensation Act* 1985 from the date of commencement of the works to the expiration of the maintenance period.

### **SITE EXCLUSION TO PUBLIC**

The construction site shall be temporarily fenced off from any possible access to public. All fences and gates shall be left locked at all times and tools shall not be left accessible to the public.

The Contractor must ensure that all visitors and sub-contractors are made aware of these conditions. The Contractor is responsible for the actions of all sub-contractors.

### **HOURS OF WORK & INSPECTIONS BY RELEVANT AUTHORITIES**

The Contractor shall comply with all relevant Acts and Regulations and the requirements of the Environment Protection Authority which may prevail in respect of working hours. The Contractor shall not, unless otherwise specified, be restricted by this Contract in this respect other than for complying with the inspection requirements of the relevant authorities specified or not. Such inspection shall only be available within the normal business hours and with the appropriate notice satisfactory to the relevant authority.

This can only be varied if required or approved by the relevant authorities.

Any extraordinary inspections desired by the Contractor shall be arranged directly with and to the satisfaction of the relevant authority and payment of any fees associated with extraordinary inspections shall be borne directly by the Contractor.

### **VARIATIONS**

No variations in price or Contract time will be approved for any works in general for situations that were evident or should have been anticipated at the time of tendering.

All variations will be in accordance with AS/ NZ 4000.

### **SITE ACCESS**

Site access shall be restricted unless otherwise authorised in writing by the Superintendent.

### **SITE CLEARING**

Requirement: clear only the site areas to be occupied or affected by the works. Refer to the Drawings for specific extent of demolition.

Old Works: remove old fence, foundations & footings, play equipment, seating, manholes and the like found on the surface.

Existing Grass: remove existing grass to a depth just sufficient to include the root zone.

Contractor's Site Areas: Do not clear areas for Contractor's site access. Limit access to one location. Access is not to be located near trees.

## **SITE COMPOUND / ACCESS & SECURITY**

The Contractor shall allow for a site compound to adequately and safely store all materials necessary for the construction works.

At the completion of each working period the site shall be secured as to prevent illegal access, vandalism and accident. Under no circumstances shall the Principal or Superintendent be held liable for accident, theft or vandalism.

## **STATUTORY AUTHORITIES' FEES**

The Contractor shall pay all permit fees and fees to local or statutory authorities to complete the work.

## **PROTECTION OF PROPERTY AND SERVICES**

### **General**

The Contractor will execute and maintain the whole of the Works in such a manner that injury and damage will not be occasioned to any person, or private or public property including all roads used for transport of materials or plant, buildings, fencing, public utility service or other structures. In the event of any injury to such structure, service or property, the party controlling it must be immediately informed of the injury.

The Contractor will at his own expense arrange the repair and restore any structure, service or property injured in any way, to the like order and condition in which it was before such injury.

The repairs may be made by the party controlling the structure, service or property, and the cost of such repairs is to be at the expense of the Contractor. The Contractor will also be liable for any loss or damage which may result from such an injury or interference to any structure, service or property, and for any claim arising from delay in repairing and restoring it.

### **Location of Existing Services**

It is the sole responsibility of the Contractor to be fully informed of the location of services and to make the necessary provisions.

The Contractor is responsible for the cost of making good any damage to existing services and mains, whether or not they are shown on the Drawings.

### **Damage by Others**

The Contractor is responsible for the watching and safe keeping of his own Works.

Damage caused by others is to be repaired by the Contractor and any necessary action to secure recovery of costs from the offending party will be the Contractor's responsibility as outlined in Defects Liability and Maintenance.

## **Protection of Roads**

The Contractor is responsible for any vehicle engaged on the works depositing material or rubbish on road pavements, road reserves, or other improvements. The Contractor, at his own expense, will ensure that all material or rubbish deposited is promptly and effectively removed and the area cleaned up before the completion of work each day.

## **Protection of Assets**

The Contractor is responsible for any new damage to existing assets. It is the Contractor's responsibility to identify any defective works prior to the commencement of Works. It is recommended that all existing damage is fully documented and distributed to the Superintendent prior to works commencing.

It is the Contractor's responsibility to notify the Superintendent of any damage that has resulted throughout the currency of the Contract. Approved vehicle crossings shall only be used to access the site.

The Contractor, at his own expense, will ensure that all material or rubbish deposited on roads or damage caused to existing assets is promptly and effectively removed or repaired as soon as possible.

## **SITE CONDITIONS**

It will be expected that the Contractor has made a thorough assessment of the site conditions during the tender period, and the impact of these on the works program, method and tendered price.

The Contractor shall undertake site photo documentation of the existing site conditions with the Superintendent prior to commencement of works.

No variations in price or Contract time will be approved for any rock encountered in excavations, wet site conditions, need for construction of temporary access haul roads or like situations that were evident or should have been anticipated at the time of tendering.

## **UNAUTHORISED DISPOSAL**

The Contractor must ensure that the site is properly signed and barricaded to prevent unauthorised disposal of waste material on the Site by others. Any rubbish or waste deposited is to be cleared from the site immediately.

The Contractor is also responsible for all excess spoil to be removed and disposed off site except where detailed in the documents or directed by the Superintendent.

## **SITE MANAGEMENT PLAN**

The Contractor shall submit a site management plan prior to works commencing.

The plan shall as a minimum detail:

## **Safety Devices**

Where required by the relevant authority, the Contractor shall prepare and submit a temporary traffic management plan which accords to the requirement of VicRoads or relevant authority for approval prior to undertaking the works. Works shall not commence until authority approval has been granted.

The Contractor is responsible for any damage arising from the neglect or insufficiency of such precaution.

## **Dust Control**

If dusty conditions exist resulting in reduced visibility for road users and a nuisance factor to abutting property owners the Contractor shall take immediate action to minimise the dust hazard.

All costs associated with this work shall be borne by the Contractor and is deemed as part of the Contractor's lump sum price.

## **Noise Control**

The Contractor shall take all practicable precautions to minimise noise arising out of or resulting from any activity associated with the work under the Contract. All construction equipment shall be fitted with noise suppressors unless specially designed for quiet operation.

## **Site Facilities**

The Contractor shall provide site facilities in accordance with the *Occupational Health and Safety Act 2004*.

## **Environmental Control Measures**

The Contractor must prepare and submit an Environmental Management Plan (EMP).

The EMP will be required to include the following items, as well as contractor-specific items:

- a) machinery access;
- b) site compound;
- c) storage of loose materials;
- d) work in drainage lines; and
- e) remediation techniques.

## **Tree Protection**

The utmost care must be taken by the Contractor to preserve trees which stand on or adjacent to the site. A tree protection zone of 3.0 metres is to be established prior to

commencing works. No equipment, materials or vehicles are to be placed within this zone. All equipment is to be located within the work site.

The Contractor shall ensure that all workers and sub-contractors on the site are informed that the trees are not to be lopped, disturbed or damaged.

No trees may be removed during construction. The utmost care must be taken by the Contractor to preserve existing trees. Damage cost will be based on the amenity value of individual trees as assessed by the Council's arborist and a percentage of damage charged against amenity value.

Severe financial penalties will be imposed for each and every incident of disturbance or damage to any tree.

Disturbance or damage to trees shall be construed to mean any action which endangers the survival of a tree and may include any or all of the following:

- a) breaking of substantial limbs (being limbs of size greater than 20% of the trunk diameter);
- b) removal of any portion of the bark of the tree trunk;
- c) cutting of major root systems of the tree (being roots of size greater than 20% of the trunk diameter);
- d) filling around a tree trunk without the precautions prescribed by the Superintendent being observed;
- e) compacting soil above the root zone (area within the spread of the tree canopy) by repeated passage or parking of equipment; and
- f) spillage of toxic substances within the spread of the tree canopy (i.e. fuel, oil, etc).

Where any tree is so located that it may conflict with the works, the Superintendent's advice as to its treatment shall be obtained prior to those works being commenced.

If considered necessary, the Superintendent may request protection for the trunk of a tree. Such protection shall take the form of timber slats tied to the trunk in a manner which permits later removal without damaging the bark.

Where disturbance or damage does occur the Contractor shall arrange for a qualified tree surgeon to inspect the damaged tree and with the prior approval of the Superintendent, have the necessary repairs effected.

### **Other Site Safety Control Measures**

The Contractor shall implement any other site safety control measures in accordance with authority requirements.

The Contractor shall maintain the control measures until the end of the Defects Liability Period.

## **WATER & POWER SUPPLY**

The Contractor shall make arrangements for any temporary water or electrical supply required. This shall include tapping / connection fees, permits and usage costs. Where it is necessary for the Contractor to extend the water or electrical services, this will be deemed to be included in the contract sum.

## **SITE MEETINGS**

The Contractor, Superintendent and representative of the Principal shall meet on site at fortnightly intervals to review progress of the works.

The Superintendent or a nominated Superintendent's Representative shall be Chairman of the meeting and shall arrange for the recording of minutes.

After each meeting the Superintendent shall promptly issue to the Contractor and the Principal a copy of the minutes. The Contractor shall notify the Superintendent if the Contractor does not agree that the minutes are a true record of the meeting. The minutes shall be confirmed at the next site meeting held.

## **AS CONSTRUCTED INFORMATION**

Prior to the issuing of the Certificate of Practical Completion the Contractor shall furnish to the Superintendent "as constructed" details of elements that are not consistent with construction plans. These shall include all construction details, design elements and any other information requested by the Superintendent to assist in the preparation of 'as constructed' drawings.

## **EXCAVATION IN ROCK**

The Contractor shall allow for excavation in whatever type of material is encountered including all types of rock and groundwater. No variation for rock removal shall be considered.

## **FINISHED LEVELS**

The Contractor shall allow for any trimming and grading to the subsoil as required for the works and in conformity with the requirements shown on all Landscape Drawings and Schedule of Quantities and Prices.

The Contractor shall visit the site to determine the extent of grading and trimming required before submitting the tender. The Contractor shall allow for erosion control measures as required, with particular care to prevent soil washing into any swale or stormwater system.

The Contractor should allow for the removal of excess fill, rock and debris in order to conform to finished grades or level with existing elements. Any unsuitable excavated debris is to be removed from site.

The Contractor must ensure that the area nominated for the playground area is excavated to a depth of 300mm from finished level where softfall mulch is indicated to be installed and 160 mm from the finished level where rubber softfall is to be laid.

Refer to Layout and Setout Plan for locations of softfall mulch and softfall rubber.

## **BACKFILLING**

Filling shall be with excavated material if appropriate and approved by the Superintendent. Filling shall be clean soil free from clay, rock, vegetable material or other deleterious matter. It shall have good regular homogeneous structure suitable for consolidation.

Consolidation shall be achieved on site by placing and compacting 150mm layers. Each layer must achieve 95% of standard maximum dry density.

## **CLEANING UP OF WORKS**

The Contractor shall clean up and leave tidy the work as it proceeds and upon completion of the Contract shall remove all temporary structures, which may have been constructed for the Contractor's convenience while carrying out the work, and remove all equipment and surplus materials from the site.

The Contractor is responsible for any vehicle engaged on the works depositing material or rubbish on road pavements and shall, at the Contractor's own expense, ensure that all materials or rubbish so deposited is promptly and effectively cleaned off such pavements.

## **WATER RESTRICTIONS**

The Contractor shall comply with all existing and proposed water restrictions no matter the level of restriction. The Contractor will be held responsible for any fines incurred as a result of any violation to the water restriction laws.

All prices submitted by the Contractor are to make allowance for additional costs associated with any current or future water restriction. The Contractor shall allow for any permits and costs associated with water restriction and applying for exemptions. No variation to the accepted tender price will be considered for costs incurred as a result of current or future water restrictions.

It is the responsibility of the Contractor to be aware of the requirements of the water restrictions, which may change during the construction and maintenance periods. Any fines incurred for violation of the water restrictions in force (regardless of level) are borne by the Contractor.

## **FIRES**

No fires shall be lit for any purpose in connection with this Contract unless authorised in writing by the Superintendent and not forbidden by any current state or local legislative requirements.

The Contractor shall give occupiers of adjoining properties and other contractors forty-eight (48) hours notice of the intention to burn.

Authority shall only be given in special circumstances after other reasonable methods of disposal have been denied to the Contractor.

The Contractor shall be held responsible for any damage to fences, trees, grass cultivation, buildings or other property occasioned by fires lit for any purpose in connection with this Contract.

## **INSPECTION OF WORKS & SUPERVISION**

The work shall be carried out under the directions and to the satisfaction of the Superintendent. All orders and instructions to the Contractor shall be given by the Superintendent or a nominated Superintendent's Representative on behalf of the Principal.

When requested to do so, the Contractor shall give to the Superintendent or a nominated Superintendent's Representative, access to the work and shall provide every reasonable facility necessary for the inspection, examination and testing of any works or materials for the Contract and any places where the said work or materials are being carried out or prepared.

Before commencing the spreading of any materials in the works, concreting, drainage works, bituminous works, or other works as directed by the Superintendent, the Contractor shall give the Superintendent at least 24 hours notice, exclusive of non-working days, of intention to do so, in order that arrangements may be made for the Superintendent or a nominated Superintendent's Representative to be present to observe the materials used and the manner of execution of the works.

The Contractor should note that the failure of the Superintendent to condemn any material being used or any work being done, shall not relieve the Contractor of the responsibility to see that all materials used and all work done complies with this specification and Contract, nor the obligation to make good any faults or defects which might develop or be detected during the progress of the work or during the defects liability and maintenance period.

If the Contractor fails to comply with the requirements of this Clause, the Superintendent may correct the faults referred to and deduct the cost of so doing from any payments due to the Contractor by the Principal.

## **CRITICAL INSPECTIONS**

The Contractor is to set out all works for on site confirmations by the Superintendent prior to commencement of construction.

Inspections by the Superintendent are required to confirm the following stages of work:

- **Set out of all hard landscape works on site** prior to the commencement of any works. The Contractor is to set out all works using pegs or markers for confirmation on site by the Superintendent.
- **Inspection of soil preparation** prior to procurement of planting.
- **Set out of all planting works on site** prior to the commencement of any works. The Contractor is to set out all works using pegs or markers for confirmation on site by the Superintendent.
- **Practical Completion Inspection**
- **Final Completion Inspection**

## **SAMPLES AND APPROVALS**

The Contractor is to allow for sufficient time to provide samples as listed to the Superintendent for approval prior to commencement of works.

The following samples are required to be supplied to the Superintendent for approval prior to ordering and commencement of works:

- a) Envirocrete Class 3, 20mm – Base material;
- b) impact absorbing mulch to meet AS/NZ 4422;
- c) Synthetic surfacing;
- d) name and details of synthetic wetpour supplier;
- e) sample mix of colours as specified;
- f) imported topsoil;
- g) steel edge materials;
- h) rocks for use on site (photos); and
- i) garden mulch.

### **Approvals**

The Contractor is to allow for sufficient time to seek approvals prior to continuing with work. The Contractor is to notify the Superintendent with a minimum of three working days prior to any site inspections.

The set out will need to be approved by the Council's Landscape Architect at least one day prior to installation. At least three days notice of the approval time will be required.

The Contractor must seek approval from the Superintendent at the following stages, before continuing with work.

- a) OH&S plan;
- b) tree protection measures;
- c) items to be demolished;
- d) cultivated subgrade;
- e) for use of imported fill;
- f) approval of onsite topsoil prior to use;
- g) if imported topsoil is required then a provide a sample and certification that the topsoil meets Australian Standards;
- h) finished sections of rocks to be used for edging and seating;
- i) finished section of recycled tyres used for garden bed retaining edge;
- j) use of admixtures within the concrete;
- k) tree surgery works if required;
- l) for all cut and fill or cutting of roots in tree protection zone;
- m) setout of all works including:
  - edges, excavation, base course for all pavements;
  - setout of synthetic area and base course;
  - all advanced trees and shrubs prior to planting;
  - location of lighting including all underground power conduit; and
  - location and orientation of steel edge.

## **Certificates & Warranties**

Contractor to provide certification:

- a) for Synthetic Impact Absorbing Surface to meet AS/NZ 4422;
- b) for Impact Absorbing Mulch to meet AS/NZ 4422 (certified);
- c) for play equipment to meet all Australian Standards including AS4685 – all parts; and
- d) that any imported topsoil meets Australian Standards.

**Contractor to provide proof that the timber is all ACQ treated pine or an alternative approved timber. (Not CCA treated)**

Contractor to provide warranties for:

- a) play equipment;
- b) furniture;
- c) synthetic surfacing;
- d) any other products, fixtures and fittings;
- e) steel edge; and
- f) lighting pole and associated works.

## **INFERRED WORK**

Detail, labour and/or materials not shown or specified, but reasonably or obviously inferred as necessary for the proper execution and complete finishing of works, shall be carried out at no extra cost to the Principal. Work described in either the working drawings or specification but not necessarily in both shall be deemed to be part of the Contract Works.

## **CONSTRUCTION**

Figured dimensions shall take precedence over scale measurements and drawings. Unless otherwise specified the Drawings and specification shall include everything reasonably for the proper and entire completion of works.

The Contractor shall verify any discrepancies between the Contract documents during the tender period. Under no circumstance shall variations be considered for the Contractor's failure to confirm any detail.

## **COMPLIANCE WITH STANDARDS AND CODES**

All materials and workmanship shall comply with the requirements of such Standards, Codes and other related documents issued by Standards Australia and current at the date of invitation to tender. In the event of there being no relevant Australian Standard, Code or other related document at the date of invitation to tender, Standards and Codes of the British Standards Institution or the American Society for Testing and Materials shall apply and in that order of precedence. The works must also comply with the TAMS Design Standards for Urban Infrastructure.

Playground Standards

All works within the play area is to comply with the following Australian Standards:

- AS/NZS 4422 1996 Playground Surfacing Specification, requirements/test methods
- AS 4685.1 Part 1 2004 General safety requirements and test methods
- AS 4685.2 Part 2 2004 Particular safety requirements and test methods for swings
- AS 4685.3 Part 3 2004 Particular safety requirements and test methods for slides
- AS 4685.5 Part 5 2004 Particular safety requirements test methods for carousels
- AS 4685.6 Part 6 2004 Particular safety requirements/test methods rocking equipment

## **MATERIALS**

All materials (unless otherwise specified) shall be new and the best of their respective kinds, and shall conform to the relevant standards, specifications and codes.

## **WORKMANSHIP**

Workmanship shall be of a high standard, and shall be the best of its respective kind and conform to the best practices of the trade.

Where installations include manufactured products, the Contractor shall comply with manufacturer's applicable instructions and recommendations for installation.

All joints shall be neat, tight and snug fitting, and finished to a high standard of workmanship. All structures shall be plumb and true and as shown on the Drawings.

All construction work shall be left free of splinters, sharp edges and protrusions. Nuts and bolt ends, spikes, screws and other fixing devices shall not protrude. Ends of pipe shall be permanently plugged or capped. The exposed edges of all posts and timbers with which the user can come into contact shall be eased or chamfered (rounded) to remove sharp edges. The Contractor should note that this clause applies to every surface within the playground accessible to the user.

Trip hazards shall be eliminated and ground surfaces, paving and similar shall be finished smoothly without any protruding or sharp edges. Where different ground surfaces meet at the same level they shall be laid so that adjacent surfaces meet exactly flush with no trip hazard, unless instructed otherwise.

## **DEFECTS**

Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or of any other cause, shall be removed

and replaced at the Contractor's expense by work or materials of the required standard.

## **MALICIOUS UNLAWFUL DAMAGE**

In the case of all items supplied and/or installed within the contract that are damaged or destroyed unlawfully by others, the following clauses shall apply to replacement, rectification, and responsibility for all associated costs.

### **Prior to Practical Completion**

Prior to the issuing of a Practical Completion Certificate, all damage is to be rectified by the Contractor and will include replacement of stolen or severely damaged material. The Contractor shall make allowance for these circumstances within their contract lump sum.

### **Following Practical Completion**

Upon issue of a Practical Completion Certificate, the Contractor is not liable for loss by malicious damage or vandalism. Assessment of the extent of damage and associated cost of reinstatement will be confirmed by the Superintendent and costs shall be borne by the Principal.

The above does not limit the Contractor's responsibility and liability for replacement of loss for any other cause whatsoever, including but not limited to where stock or materials have failed due to poor quality, inherent defect, incorrect installation or installation in unsuitable site conditions.

In all instances the Contractor will report such malicious damage to the Superintendent as soon as practical, note, and record all occurrences in their Log Book along with all costs and approved replacements.

The Contractor shall request a further inspection and written approval of the replacement immediately after its installation.

### **Defects Liability Period**

Liability for all items as identified within this contract shall be limited to Defect Liability Period following the award of Practical Completion or that specified in the establishment and maintenance period, whichever is greater.

## **PRACTICAL COMPLETION/OPERATIONAL ACCEPTANCE**

The Superintendent shall be notified immediately when all Landscapes Works are completed. The Contractor shall ensure that all works within the Contract are completed prior to the issuing of a Practical Completion Certificate.

The works will not be placed onto Practical Completion until all play equipment, synthetic surfacing or any other product manuals and warranties have been issued by the Contractor to the Superintendent and received by the Principal.

Manuals, warranties and compliance certificates are to be site-specific, noting the site, material and installation date.

### **FINAL COMPLETION**

For the purposes of issuance of the Final Certificate, all works shall be completed and defects rectified. Retention monies and/or bonds shall be held until issue of Final Completion.

## **SITE PREPARATION, DEMOLITION & EARTHWORKS**

### **GENERAL**

#### **SCOPE**

The Contractor is responsible for the following works including, but not be limited to:

- On site building overheads and preliminaries as required inc. security fencing, portable toilet, container for secure storage etc.
- Set out for approval.
- Removal and stockpiling of top soil to required levels in areas other than proposed garden/lawn areas.
- Dismantle existing play equipment structures.
- Allowance removal of existing equipment and subsoil and cartage from site.
- Removal and disposal of existing lights, poles and fittings. Refer to Demolition Plan 11-037-02.
- Removal and disposal of existing furniture (BBQ to be removed by the Principal prior to works).
- Removal and disposal of existing irrigation services including the decommissioning of taps.
- Cutting and filling for the construction of all levels in the design Construction of mounds using on site fill.
- Excavation for footings, paths, structures, posts, mulch and other areas where required and finished levels for garden bed areas following bulk earthworks. Establishing finished levels and for neatly matching to existing levels.
- Achieving positive and effective drainage across the site. Allowance for stormwater drainage works including:
  - design and Installation of an agricultural drainage system across the site linking into existing storm water ensure that all areas achieve a positive drainage (ensuring no localized pooling); and
  - supply and lay slotted agricultural drainage pipes to mulched area contractor to establish best route and system of connection to achieve a free drained site. Supply, lay and connect PVC drain pipe to agi pipes and to dispersal points.
- Environmental protection.
- Tree protection including protective fencing of all trees and display of tree protection warning sign.

#### **Inspection**

Give sufficient notice so that inspection may be made of the following:

- a) enclosures or marking of existing trees for protection;
- b) do not commence other works until tree protection has been installed and inspected by Superintendent; and
- c) prior to any demolition works commencing the Contractor is to confirm with the Superintendent all items and areas to be demolished.

## **TREE PROTECTION**

### **Cross References**

Refer also to the General Conditions and the Earthworks sections of this Specification.

### **Protection**

Do not remove or damage any tree.

Protect from damage the trees to be retained, including those beyond the site area, both above and below ground.

Tree protection zones are defined by the tree driplines and also shown on Dwg 1300-02-WD. Only the minimum access and work required to achieve the project should be conducted within the tree protection zones.

The following protective measures should be taken:

- a) keep the area within the dripline free of construction material and debris;
- b) do not place bulk materials or harmful materials under or near trees;
- c) do not place spoil from excavations against tree trunks;
- d) prevent any damage to tree bark; and
- e) do not attach stays, guys and the like to trees.

## **WORK NEAR TREES**

### **General**

Within the tree dripline or 3.0m from the tree trunk (whichever is the greater distance) the Contractor shall seek approval from the landscape architect for:

- a) cut and fill operations; and
- b) cutting or excavating roots.

Prior to machine excavation, use hand excavation to locate roots in the vicinity of trees to be retained. Following approval by the landscape architect, any roots which need to be cut shall be clean cut with a saw. Do not use for this purpose an axe or other machinery not designed for the clean removal of branches.

Do not compact the ground under trees. If compaction occurs, give notice and obtain instructions.

## **Protection**

Protect from damage trees which are beyond the site area, both above and below ground. Do not remove any tree to be retained. The Contractor shall keep the area within the drip line of the tree free of construction material and debris. In particular, do not place bulk materials or harmful materials under or near trees. Do not place spoil from excavations against tree trunks. Prevent any damage to tree bark. Do not attach stays, guys and the like to trees.

### **Excavation near trees**

Excavation requires approval from the Superintendent if near trees. The Superintendent will only allow boring or trenching where a route is outside the averaged extent of tree dripline, or 3.0m from the tree trunk, whichever is the greater number/distance, and the trench is shorter than 1m.

### **Protection of tree roots**

Hand methods: Use hand methods to locate, expose and cleanly remove the roots on the line of excavation. If it is necessary to excavate close to the drip line edge, use hand methods such that root systems are preserved intact and undamaged.

Do not cut tree roots exceeding 40 mm diameter. Where it is necessary to cut tree roots, use means such that the cutting does not unduly disturb the remaining root system. Ensure a clean cut edge. Immediately after cutting, apply a bituminous fungicidal sealant to the cut surface to prevent the incursion of rot or disease.

### **Backfilling around trees**

Backfill to excavations around tree roots with a mixture consisting of three parts by volume of topsoil and one part of well rotted compost with a neutral pH value, free from weed growth and harmful materials. Place the backfill layers, each of 300 mm maximum depth, compacted to a dry density similar to that of the original or surrounding soil. Do not backfill around tree trunks to a height greater than 300 mm above the original ground surface. Immediately after backfilling, thoroughly water the root zone surrounding the tree.

### **Warning sign**

Display a sign in a prominent position at each entrance to the site, warning that trees are to be protected during the contract. Remove on completion.

## **EXISTING SERVICES**

### **Marking**

Before commencing earthworks, locate and mark existing underground services in the areas which will be affected by the groundwork operations including clearing, excavating and trenching.

## **Excavation**

Do not excavate by machine within 1 m of existing underground services.

## **DEMOLITION**

### **General**

The Contractor must perform all other demolition required in order to carry out and complete the Works, whether or not such demolitions are shown on the Drawings or specifically mentioned in this section or other sections of the specification.

The Contractor is responsible for the removal of ALL elements (except BBQ) required to successfully complete the proposed landscape works, including edging, footings, surfaces and furniture.

Removal of the existing electric BBQ is not included in scope of works and will be undertaken by the Principal. The Contractor must liaise with the Superintendent to confirm the removal of the existing BBQ and associated electrical works prior to commencement of Works.

The demolition works shall include all removal of existing play equipment, surfaces, elements and footings, cutting away, matching to levels, services and any other incidental works necessary to complete the contracted works.

The Contractor must provide all labour, equipment, safety equipment and precautions, plant and materials necessary for the appropriate protection and execution of the works.

### **Demolished materials**

Any leftover materials shall become the responsibility of the Contractor to remove.

Unless otherwise specified or notified by the Superintendent, all demolished or leftover materials shall become the property of the Contractor and shall be removed from site.

Where hazardous materials are involved the Contractor shall take the necessary precautions and adhere to the relevant Australian Standards and other rules and codes of practice for demolition and removal of a hazardous material and safe disposal of waste.

### **Work by others**

Work by others includes the removal of the electric BBQ and associated electrical works prior to commencement of works.

## **TREE AND STUMP REMOVAL**

### **General**

All tree and stump removal will be by others.

Prior to commencement of Works, the Contractor must liaise with the Superintendent regarding removal of trees and stump from site

There are four trees and one stump to be removed on site. Refer to Demolition Plan for location of trees and stump to be removed.

### **Work by others**

Work by others includes:

- Removal of three trees and stump prior to commencement of works. Tree and stump removal works undertaken by the Principal as indicated on the Landscape Demolition Plan.

### **Co-ordination**

Prior to commencement of Works, the Contractor shall liaise with Superintendent and the Council's arborist to co-ordinate with the Council's contracted tree removal team (Citywide) for the removal of trees and stumps as indicated on Landscape Demolition Plan

## **ENVIRONMENTAL PROTECTION**

### **Erosion control**

Plan and carry out the work so as to avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems.

Prevent wind-blown materials such as cement from harming trees and plants.

### **Temporary erosion control measures**

Staging

Stage operations (e.g. clearing and stripping).

Restoration

Progressively restore disturbed areas.

Drains

Provide temporary drains and catch drains.

## Dispersal

Divert and disperse concentrated flows to points where the water can pass through the site without damage. Use spreader banks or other structures to disperse concentrated run-off.

## Silt traps

Construct and maintain silt traps to prevent discharge of scoured material to downstream areas.

## Maintenance

After each rain inspect, clean, and repair if required, temporary erosion and sediment control works.

## Removal

Remove temporary erosion control measures when they are no longer required.

## **EARTHWORKS**

### **General**

It is the responsibility of the Contractor to perform any other earthworks, site preparation and drainage required in order to carry out and complete the Works, whether or not such works are shown on the Drawings or specifically mentioned in this section or other sections of the Specification.

During excavation, every care shall be taken to avoid damage to existing underground installations. Safety precautions regarding trenches, boring and excavation, etc., shall be in accordance with Work Cover requirements.

Existing material shall be excavated to the extent necessary to conform to the finished grades and cross sections indicated, and shall allow for the placement of imported topsoil where applicable.

The excavation shall be finished off with an even surface and thoroughly consolidated until a firm and uniform subgrade has been obtained throughout the entire area. Depressions which develop during rolling shall be filled with sound material and consolidated. Refer to filling below.

### **Grading and Trimming**

The existing soil shall be graded and trimmed to the extent necessary to conform with the finished levels, grades and cross sections indicated, and shall allow for the placing of topsoil, paving and new structures.

## **Over-Excavation**

Any over-excavation performed by the Contractor for any purpose or reason, except as may be directed by the Superintendent and whether or not due to the fault of the Contractor, shall be at the expense of the Contractor. All such over excavation shall be refilled as directed by the Superintendent and the cost of furnishing and placing this fill shall be at the expense of the Contractor.

## **Stabilization**

The Contractor shall effectively and properly stabilize all excavations to prevent any fall or run off the ground resulting from the excavation and to prevent settlement or damage to structures adjacent to the excavation.

## **Batters**

All excavated slopes shall be evenly graded to smooth consistent batters at slopes and shapes indicated on the Drawings. If grades of batters are not indicated on the Drawings, batters shall be formed to the natural angle of repose of the material.

## **Spoil**

Spoil from the excavation shall where possible be utilized on site where filling is required, if the material is suitable for this purpose. Any excess spoil from the site shall be disposed of off- site at the Contractor's expense.

All excess soil/ spoil is to be retained on site and distributed throughout the soft works area under supervision from the Superintendent. If spoil from site is deemed of a poor quality to use across the site as fill the Contractor will be removed and disposed of off site at the contractor's expense. No variation for removal shall be considered.

## **Filling**

Where filling is necessary, it shall be of approved sound material. Material excavated during earth works shall be used as filling if appropriate and any shortfall made up by importing fill at no extra cost. Material used as fill in mounding shall be approved as clean and free of debris and other contaminants.

It shall be installed in 150 mm layers, with each layer being firmly compacted.

Any fill brought onto the site shall be sound material, free of perishable material and uncontaminated as set out below and shall be subject to approval by the Superintendent.

## **Supply of uncontaminated fill**

The Contractor shall supply the Superintendent with accurate information as to the source of any fill brought to this site as part of this contract. Fill shall be proven to be obtained from an uncontaminated site and shall be suitable for use in a children's play area.

Should any question arise regarding the possibility of contamination of the material, the Contractor shall be required at his own expense to supply the results of analysis demonstrating suitability for use in a children's play area according to the criteria established by the Environment Protection Agency.

### **Placement of fill**

Before placing fill, remove all debris and compact the excavated ground to the required density. Place and compact backfilling in layers not exceeding 150mm. If required loosen the ground to a depth of 200mm and adjust the moisture content before compaction.

If fill is to be placed against a ground surface, which slopes more than 1:4, bench the ground surface to form a key for the filling. As each layer of fill is placed, cut the existing ground surface progressively to form a series of horizontal steps at least 1m in width. Re-compact the material thus excavated as part of the filling.

Place and compact the fill to the dimensions, levels, grades and cross sections as shown on Drawings, so that the top of the subgrade and the finished surface is always self draining.

### **Compaction**

Protection

Protect the works from damage due to compaction operations.

### **Compaction Testing**

Unless otherwise specified, the compacted density of the material when tested in accordance with the relevant requirements of AS 1289 (Methods of testing soils for engineering purposes), shall be not less than:

- a) for areas covered by pavements 95% Standard Maximum density; and
- b) for all other areas 90% Standard maximum dry density.

The formation shall be tested in accordance with the applicable requirements of AS 1289, with the location of tests as nominated by the Superintendent. The Contractor shall provide all necessary equipment and labour, perform all necessary tests and pay all costs associated with testing.

Areas of formation which do not achieve the required density under test shall be cut out, refilled, re-compacted and re-tested as above until the required density is achieved.

### **Rock or bad ground**

Notify the Superintendent immediately in the case of:

- a) rock in excess of 0.5 m<sup>3</sup>. This shall mean monolithic material which cannot be removed until broken up by mechanical equipment; and

- b) bad ground. This shall mean ground unsuitable for any reason including likelihood of subsidence, cavities, contamination, or ground which is very wet, soft or unstable.

### **Mound Construction**

Material used as fill in mounding shall be approved as clean and free of debris and other contaminants.

The Contractor must construct mound with layers of fill and DGB (recycled densely graded base) road base.

Any fill brought onto the site shall be sound material, free of perishable material and uncontaminated as set out below and shall be subject to approval by the Superintendent.

Contractor to install each layer of material in 150 mm layers, with each layer being firmly compacted.

The Contractor is to install a top layer of slurry of concrete and road base to ensure that the form of the mound is maintained with the exception of locations where a garden bed has been nominated.

The Contractor must liaise with the rubber supplier during final construction stages of the mound to ensure adequate space is retained for garden bed and planting.

Garden beds are to be constructed in accordance with Layout Plan 11-037-03.

### **DRAINAGE**

#### **Inspections**

Arrange inspections as follows:

- concealed work before covering;
- trenches and bedding layer, before installing pipework; and
- pipework and connections to other drains, prior to covering.

#### **Standards**

Works shall comply with AS 3500 National Plumbing and Drainage Code.

- Stormwater drain pipes shall be in the materials specified and conform to the following:
- rigid plastic pipes conforming to AS 1254 - Class HD; and
- unplasticised PVC pipes conforming to AS 1260- class SH including slotted agricultural drain pipes

## **Execution**

Supply and lay 90 mm P.V.C agricultural drain pipe as required. Lay the pipes at the base of a 200 mm wide earth trench with a minimum cover from the top of the pipe to the proposed soil level of 200 mm minimum. Unless otherwise noted, minimum fall of 1 in 100 mm.

Backfill the trench with 200 mm layer (above the top of the pipe) with 12 mm aggregated screenings. Back fill the remainder of the trench with approved topsoil, free of stones, rocks, clods or other deleterious material.

Rigid plastic stormwater pipes and fittings shall be solvent welded, and jointed with a distinctive colour solvent strictly in accordance with the manufacturer's recommendations.

Minimum earth cover to drains shall be 300mm in non-trafficable areas and 450mm in trafficable areas.

Drains shall be kept clear of paths and at least 600mm clear of walls wherever possible.

Stormwater drains shall be laid to even falls of not less than 1 in 100.

Bedding - unless otherwise directed on site all stormwater pipes shall be fully bedded - barrels and collars - on 75mm of fine crushed rock or approved fine granular material.

Inspection openings complete with covers to be provided and laid at all bends and junctions and at 9000mm intervals along drains.

Plastic pipes shall be backfilled to 100mm above pipe with materials as for pipe bedding.

All other backfill materials shall be free of hard material, rock or debris, evenly consolidated and mounded as specified.

Make good affected surfaces, paths, channels, services, ground surfaces, lawn, building works generally within and beyond the site boundaries where damaged or disturbed by the Works.

## **SITE RESTORATION**

The Contractor must ensure that all new levels are flush, uniform and safe.

Contractor to ensure that no edges of levels cause future hazards for park users. Where existing ground surfaces are not required to be varied as part of the works, restore them to the condition existing at the commencement of the contract.

## **CONCRETE**

## **General**

Refer to the Drawings for all structural aspects including reinforcement and spacing of sawcut and construction joints.

## **Warranty**

On completion of the work, provide a warranty to the Principal stating the work is secure against any defects, including delamination from substrate, 'blowing' 'grinning' and 'crazing' for the period of fifteen years from the date of practical completion.

## **Scope**

The works include but are not limited to the supply and complete installation of concrete for:

- a) footings for all structures including but not limited to (furniture, recycled tyres, play equipment, rocks and posts);
- b) concrete pad for under BBQ and picnic table seating; and
- c) miscellaneous - all other incidental or consequential work which is or may become necessary to complete the work.

## **Colour**

Wherever concrete colour is not specifically noted on the Drawings, it should be coloured with Riverblend Beige 8.3% in grey cement with broomed finish.

## **Quality Assurance**

The supply and installation shall be in compliance with the Drawings and this Specification and be done to best industry practice by experienced tradesmen.

## **Standards**

Comply with the requirements of the following SAA Standards and Codes; except where specifically varied.

AS 1379 – 1973 Ready Mixed Concrete

AS 3600 - 1988 Concrete Structures

AS 1509 - 1974 SAA Formwork Code

AS 1510 - 1974 Control of Concrete Surfaces - Part 1 1974 Formwork

AS 1082 - 1971 Glossary of Formwork Terms

AS 1302 - 1982 Steel Reinforcing Bars for Concrete

AS 1303 - 1984 Hard Drawn Steel Reinforcing Wire for Concrete

AS 1304 - 1984 Welded Wire Reinforcing Fabric for Concrete

AS 1315 - 1982 Portland Cement

AS 1527 – 1974 Two-Part Polysulphide-Based Sealing Compounds for the Building Industry

AS 1554SAA Structural Steel Welding Code Part 1 - 1985 Welding of Steel Structures

AS 2758 Aggregates and Rock for Engineering Purposes Part 1 1985 Concrete Aggregates

AS 1479 – 1973 Code of Practice for the Use of Chemical Admixtures in Concrete

AS 1478 - 1973 Chemical Admixtures for Use in Concrete

AS 1012 Methods of Testing Concrete Parts 1-19

AS 1141 Methods for Sampling and Testing Aggregates (Complete Set)

AS 3000SAA Wiring Rules (Concrete Embedments)

ASTM C309 Curing and Protection of Concrete

AS 3600 – 1988 Fabrication and Workmanship

### **Delivery, Storage and Handling**

Store all materials to avoid deterioration, damage, theft and vandalism. Deliver wet concrete so that it is placed soon after arrival.

### **Project Conditions**

Verify site dimensions on site. Protect materials on site from weather and theft.

## **CONCRETE**

### **Finish**

Unless otherwise noted insitu concrete paving should have a broomed finish.

### **Cement**

Cement shall comply with AS 1315. Cement shall be one brand and shall be not more than three months old.

Cement delivered to the site shall be in branded and sealed bags stacked under protective covers to prevent deterioration, so stacked that each batch delivered may be identified.

Defective cement shall be removed from the site.

### **Aggregate**

Dense aggregate shall comply with the requirements of AS 1465 and AS 1141.

Lightweight aggregate shall comply with the requirements of AS 1467.

Maximum size of coarse aggregate shall comply with AS 3600.

### **Water**

Water shall comply with Clause 19.1.1.6 of AS 3600 and shall be clear of oil, acid, alkali and organic matter.

### **Admixtures**

Admixtures shall not be used without the prior approval of the Superintendent in writing. Where used, they shall comply with Clause 19.1.1.7 of AS 3600.

### **Ready mixed**

Concrete shall be grey ready-mixed except areas otherwise specified.

Supplied by an approved manufacturer and shall be mixed and delivered in accordance with the requirements of AS 1379.

### **Site mixed concrete**

Will not be permitted unless the prior approval of the Superintendent has been received.

### **Strength**

All concrete shall have the required compressive strength at 28 days.

Strength: at 28 days as noted or scheduled on structural drawings for various locations.

Concrete not scheduled for compressive strength shall be 25 MPa concrete.

## **TOPS OF FOOTINGS UNDER PLAY EQUIPMENT**

Tops of concrete footings shall be no less than 450mm below the top of the mulch or no less than 200mm below the level of the mulch base (i.e. the ground level under the mulch) whichever is the greater.

Any footings of slides, which are not covered by the slide bedway, shall be 300mm below the playground sub-surface level (an additional 100mm deeper than other footings – this is to cater for the additional compacting and pounding of the surface at the base of the slides). This shall also be the treatment applied to the base of slide poles.

Depths of footings for play equipment will be according to the requirements of the manufacturer/supplier of the equipment, who shall take responsibility for the structural integrity of the equipment.

## **Reinforcement**

### General

All reinforcement shall be supplied, fabricated and fixed in accordance with the Drawings and this Specification and the codes specified. All reinforcement will be located as specified on the Drawings.

### Surface Condition

All reinforcing shall be free from loose mill scale, rust, mud, oil, grease or other non-metallic coatings which would reduce the bond between the concrete and steel and shall be free from kinks or other defects, all at the time of placing concrete.

### Fabrication of Reinforcement

All reinforcement shall be fabricated, bent and welded strictly in accordance with the Contract documents and to the satisfaction of the Superintendent.

### Fixing of Reinforcement

Support reinforcement on chairs as required. Weld, tie or clip together securely. Splice bars as per AS1554 Part III.

## **EXECUTION**

### Preparation for Placing of Concrete

Do not place any concrete in any section of the work until the formwork or foundation material for that section has been inspected and approved by the Superintendent and:

- (a) the excavation is free from water;
- (b) all loose materials are removed; and
- (c) excavation sides are tight.

### Transporting of Concrete

Convey concrete from the mixer to the place of final position without delay and by means that will prevent segregation and loss of materials.

No water is to be added to ready mixed concrete.

### Placing of Concrete

Place concrete in compliance with AS 3600. Concrete pavements should finish flush with adjacent surfaces.

### Testing of Concrete

Generally in accordance with AS No. 1012 at the Contractor's cost. Provide receipt from concrete company regarding strength of mix.

### Compaction of Concrete

Compact all concrete to maximum practical density free of all air or strong pockets.

Do not add water. Do not over compact to point of separation.

## Curing and protecting Concrete

Refer AS 3600, Rule 19.1.5. Freshly cast concrete shall be protected from premature drying and excessively hot or cold temperatures. The concrete shall be maintained at a reasonably constant temperature with minimum moisture loss for the curing period. Period of Curing - Final curing shall continue for 7 days prior to construction.

## **OTHER SURFACES**

### **SCOPE**

Provide paving and surfaces including:

- 75 mm cement stabilised compacted recycled crushed brick paving on a compacted FCR (note: 20mm Envirocrete Class 3 may be substituted for FCR)
- 300 mm deep impact absorbing softfall (playground)mulch
- 75mm impact absorbing synthetic surface to top of mound and to sides of slide run. One side of slide to be formed into 'steps'
- Coordinate installation of wet pour impact absorbing synthetic surface with relevant supplier. Supplier of wet pour to be confirmed with Superintendent prior to commencement of works.
- Recycled brick paving. Contractor to retain and stockpile bricks existing on site, to be reused in new landscape works

### **GENERAL**

#### **Edges**

Edges will be required to retain surfaces. Refer to layout and setout drawings for location and types of edges.

For recycled brick edging, refer to the section - recycled brick paving and edging

For steel edging: Refer to the section - steel edging

#### **Setout**

Obtain approval for setout prior to excavation for all surfaces. Adjust setout as instructed by Superintendent.

## **Finish**

Levels must match exactly flush, without trip hazard, between different materials/surfaces. Surfaces must be designed to drain. Finish to be smooth and even with no areas that water can pool. Drainage must always be away from buildings and entrances.

Provide a slight crown to the centre of paths to facilitate a 1:50 maximum grade towards the outside edge.

## **Completion**

Any damaged adjacent surfaces shall be re-instated.

## **CEMENT STABILISED COMPACTED RECYCLED CRUSHED BRICK**

### **Materials schedule**

Applied loads	Pedestrian
Material	7 minus, Crushed Brick (Boral- Delta Enviroblend)
Cement	Brighton-Lite (off white), mix at 5%
Finish	Compacted brushed smooth
Overall Paving thickness	150mm min
Base Course:	Class 2 Fine Crushed Rock or 20mm Envirocrete Class 3, 3% cement added at the mill or on site
Bedding thickness	75mm

### **Materials**

The Contractor shall supply a sample of the proposed material to the Superintendent for approval prior to purchase and delivery to the site.

Suggested Supplier: Boral -Delta

Contact: 473 Somerville Road, Sunshine, P:(03) 93152555

Web: [www.boral.com.au](http://www.boral.com.au)

## Installation

Lay the mix just damp but not wet, to finish 75 mm thick after compaction, with an even surface, flush with edgings and within the surface tolerance.

Base course to be 75mm class 2A fine crushed rock (FCR) compacted to 98% SMD on clean and compacted subgrade.

Compact using mechanical means to achieve a dry density ratio of 95% when tested to AS 1289.5.4.1 (standard compaction). Where spaces are tight near trees or over structural soil, compact by hand only.

## IMPACT ABSORBING MULCH

### General

Pine mulch surface to climbing and play equipment areas shall be installed as per Drawings.

Mulch must be installed at 320mm depth, to finish at 300mm depth **after compaction**.

Mulch shall be fine pine mulch (shredded pine wood) specifically produced for application to playgrounds and obtained from a reputable supplier and tested to comply with requirements for impact absorbing ground surfacing material, AS/NZS 4422 : 1996

A true and representative sample shall be provided to the Superintendent for approval prior to installation.

**A copy of the test report shall also be supplied prior to ordering.**

Shredded recycled tree prunings or shredded timber laminates are **not** acceptable and will be rejected.

### Materials

The Contractor shall supply a sample of the proposed material to the Superintendent for approval prior to purchase and delivery to the site.

Softfall mulch to be:

- (a) certified (to AS/NZS 4422:1996); and
- (b) particle range from 1mm to 10mm, (average 8mm) with a minimum of fines to assist in longevity when installed in playgrounds.

Suggested Supplier: Bark King

Contact: 54 Fussell Road, Montrose, P:(03) 9728 5200  
Web: [www.barkking.com.au](http://www.barkking.com.au)

## **Execution**

Mulch shall be compacted during installation to a minimum depth of 250mm as outlined in AS/NZS 4422 1996.

The Contractor should acquaint themselves with the volume of mulch they will be required to purchase, in order to achieve the final compacted depth.

Base under mulch areas shall be graded positively to drainage points.

## **Borders and Edges**

Mulch to garden bed is to be a formed banked earth edge.

## **SYNTHETIC IMPACT ABSORBING SURFACE**

### **General**

Synthetic impact absorbing surfacing materials are generally made from recycled tyre fibres such as SB Rubber, or other types of rubber or synthetic granules, bound together with a polyurethane binder to form a base shockpad of varying thicknesses. They are coated with a wear surface which is typically coloured, and approx. 15mm thick. The coloured layer has been specified to be RPCR recycled rubber or similar approved.

### **Standards**

The product must comply with the Australian/New Zealand Standard AS/NZS 4422:1996 and be laid to sufficient depth for the fall heights of the play equipment surrounding them.

The supplier will be required to produce a test report indicating that the product has been tested in accordance with this Standard for the fall heights specified on the Drawings.

Warranties will be required for a minimum of five years.

### **Scope**

Wet pour impact absorbing synthetic playground surfacing is specified on the Drawings. Area:

Synthetic sofffall supplied and installed by others at these locations:

- (a) to top of mound and to sides of slide bed; and
- (b) pathways through each playspace. Under swings, spinner and play unit as indicated on Layout Plan and Setout Plan Drawing.

Confirm supplier with Superintendent.

## Materials

Applied loads:	Pedestrian
Synthetic surface:	Smooth trowel finish
Wear course:	RPCR recycled granules in accordance to manufacturer's recommendations
Colour mix:	Colour samples to be forwarded to the Superintendent for selection

Depth of impact absorbing course: as directed by supplier for adjacent fall heights.

In all areas where no impact absorbing layer is required (eg. beside embankment slide) a minimum 50mm layer should be installed. (The Contractor should ensure that the depths of the synthetic layers are factored in and the required levels are achieved and no entrapment is created between the slide and synthetic.)

## Approvals and responsibility

### Sample and supplier to be approved by the Superintendent prior to ordering

The set out will need to be approved by the Superintendent at least one day prior to installation. At least three days notice of the approval time will be required.

## Execution

The installation of the impact absorbing synthetic surfacing shall be in accordance with the manufacturer's instructions.

It is the Contractor's responsibility to ensure that any posts or other permanent structures which are located within area covered by the rubber material are installed **prior** to pouring of the rubber. No cutting, excavation or patching afterwards will be accepted.

Rubber Slide pads are to be installed at the excavated ground level and covered over with softfall mulch at the specified depth.

### **Below Slide**

Take particular care to ensure that there are no entrapments between the slide and the synthetic embankment.

### **Quality**

The surface shall be laid so that it is free-draining, without contamination, or surface irregularities, pools or bumps unless specified. It shall not crumble, crack or fade, delaminate or separate from the base for the entire warranty period.

Where the synthetic surface interfaces with mulch or a sloping surface, the edge of the rubber/synthetic should be gently bevelled/beached to minimise the risk of tripping and of falling. This is illustrated in the details.

No timber or other hard material or edging shall be allowed in a fall zone (refer to playground standards).

In all situations the synthetic surface shall meet flush with adjacent surrounding surfaces with no trip hazard.

Where the synthetic softfall is to be laid on a slope, the base must be concrete. Ensure that the levels drain to an approved storm water collection point. Ensure that no concrete is exposed or can become exposed through wear and tear or erosion of adjoining surfaces.

Ensure that the base preparation and retention prevents the possibility of the crushed rock eroding and the rubber surface becoming undermined, especially in high impact areas such as at the base of slides and slide poles.

### **Warranties & Certification**

The supplier will be required to produce a test report indicating that the product has been tested in accordance with this Standard for the fall heights specified on the Drawings.

The supplier is to provide warranty for synthetic surface. Warranties will be required for a minimum of five years.

Supplier

Supplier to be confirmed with Superintendent prior to commencement of works

## **RECYCLED BRICK PAVING AND EDGING**

### **Scope**

The Contractor must reuse bricks on site for installation of new paving and brick edging and carefully remove bricks from existing site, stockpiling bricks for re-installation in new landscape works. Recycled brick paving and edging is specified on Layout Plan and setout Plan drawings.

Install:

- supply and install recycled brick edging to granitic gravel pathway as indicated on Layout and Setout Drawings; and
- supply & install recycled brick paving in 'herringbone' arrangement as indicated on Layout Plan and Setout Plan Drawings.

### **General**

The Contractor is to carefully remove bricks from existing site and stockpile bricks for reuse in the new landscape works. Contractor to take care to ensure bricks are not broken, clean and free of old mortar.

Recycled bricks will be used to form edging to new granitic gravel paths way and forming a retaining edge between the granitic gravel path and adjacent garden bed. Recycled bricks will also be used to create a hard paved surface at the entry to the park. Bricks will be arranged in a 'herringbone' style paved surface.

### **Appearance**

Recycled bricks are to be lifted carefully from site and safely stockpiled on site. Contractor to take care to ensure bricks are not broken, clean and free of old mortar.

Brick paving shall be a nominal depth of 76 mm (or height of brick) and sit flush with adjacent surface. Nominal size of brick: 76mm x 230mm x 110 mm.

Edging: Bricks will be laid in a linear fashion. Refer to layout and Setout drawings for orientation and location

Entry paving: Bricks will be laid in a 'herringbone' appearance. Refer to layout and Setout drawings for orientation and location

### **Execution**

Where recycled brick is used as path edge or paving, the bricks are to be laid according to arrangement illustrated in Landscape Details Sheet. Bricks shall be laid on a 50mm mortar base with a 75mm base layer of fine crushed rock.

The finished surface of the brick paving shall be without variation in surface levels, providing a smooth, continuous level surface without trip hazards. Bricks will be laid to meet flush with adjacent surfaces. The brick are to be laid so that they are not angled to slip or trip on and do not wobble or move and provide a stable surface on which to step.

## **ROCKS AND STONWORK**

### **SCOPE**

Supply and install:

- mudstone slabs or approved equivalent to form steps to top of mound.
- mudstone boulders or approved equivalent as seats as indicated in the Drawings.

### **ROCK BOULDERS**

#### **Materials**

Material: Mudstone & Volcanic basalt

Suggested Supplier: Rocks Plus

Contact: 561 Dorset Road, Bayswater North 3153, T: 03- 87616930 M: 04 1450 35 21, Email: info@rocksplus.com.au

Material: Mudstone & Volcanic basalt

Suggested Supplier: Daisy's Garden Supply

Contact: 12-16 Mt Dandenong Rd Ringwood East, P:(03) 9870 4322, Email: sales@daisysgarden.com.au

Contractor to supply photographs of the boulders for approval, prior to delivery to Melbourne.

#### **Timing**

Contractor is to allow for rock to be sourced to meet the dimensions specific to this project.

It is possible to obtain rock to accurate dimensions to construct the steps and informal seating edge however the Contractor needs to allow time for this to be sourced.

The Contractor is to allow for delivery of all rock from Mansfield.

## **Sizing**

Rock boulders where to provide informal seating areas along garden bed edge. Where used as seating areas allow for a height above ground of 300-400 mm with  $\frac{1}{2}$  to  $\frac{1}{3}$  set into the ground. Rock boulders shall generally be of a minimum size 600mm in at least one dimension.

Rock boulders where to provide informal steps up to top of mound. Where used as steps should allow for height above ground of 200- 300mm with  $\frac{1}{2}$  to  $\frac{1}{3}$  set into the ground. Rock boulder steps shall generally be of a minimum size 400 mm in at least one dimension.

Minimum diameter: 200mm

Maximum diameter size: 500mm

Minimum height: 400 mm (stepping stones)

Maximum height: 600mm (sitting boulders)

Contractor to allow for  $\frac{1}{2}$  to a  $\frac{1}{3}$  of rock to be set into the ground.

## **Appearance**

Rocks to be natural forms (i.e. not saw cut) vesicular basalt, granite or mudstone boulders with a smoothly rounded upper profile and free of sharp projections, crevices and sharp corners. Any sharp corners or edges are to be rounded by the contractor. Placement and quality of rocks to be confirmed with Superintendent on site before rocks are concreted in place.

## **Execution**

Install boulders into cement pad sand. Refer to landscape details for specific installation requirements. Ensure that any gaps or crevices are filled with mortar to ensure that no entrapment of fingers is possible. Mortar or grout joint is to be smooth, neat and clean and is to match closely with colour of rocks. Colour of mortar to be confirmed with Superintendent prior to fixing of rocks.

Boulders are to be arranged so that they:

- (a) effectively retain soil to finished levels;
- (b) are at least one third buried in the ground as per detail;
- (c) achieve a natural appearance in their placement - i.e. the 'natural' surfaces are exposed ( i.e. do not expose surfaces which were previously buried);
- (d) are completely stable and unable to be rocked or moved; and
- (e) achieve the levels, step heights and layout nominated on the Drawings.

## General

- The mortar should recede from view and be recessed between rocks. To achieve this, the mortar should be shaped in a concave manner, rather than a convex hump between each boulder.
- Mortar should extend below the base of the rock but should follow the line of the rock.

Note: the levels of all rocks have been carefully documented to meet the Australian Standards for Playspaces. AS4685. Therefore the rock work needs to be installed to meet these dimensions.

## 2. TIMBER WORK / CARPENTRY

### SCOPE

This section includes but is not restricted to construction of the following:

- Supply and Install new 150 mm dim. timber post 1.2 m high for syringe box. Refer to Layout Plan and Setout Plan drawings for location.

### APPROVALS

#### Samples & Approvals

- 100x 100 mm timber post

### REFERENCED STANDARDS

#### General

The Contractor shall comply with the relevant sections of the following standard specifications as minimum requirements for work covered by this Specification.

AS 01	Glossary of terms used in timber standards
AS 02	Nomenclature of Australian timbers
AS 1148	Nomenclature of Commercial Timbers imported into Australia
AS 1684	SAA Timber Framing Code
AS 1720	SAA Timber Engineering Code
AS 1728	Types of timber surfaces
AS 2754	Adhesives for timber and timber products

## **Structural Timber**

- AS 1490 Visually stress graded radiata pine for structural purposes (metric units)
- AS 2082 Visually stress-graded hardwood for structural purposes
- AS 2272 Marine Plywood

## **Preservative Treated Timber**

- AS 1495 Preservative Treated Radiata Pine Cladding
- AS 1604 Preservative Treatment for Sawn Timber, Veneer & Plywood
- AS 1606 & AS 1607 Water-repellent treatment of timber & joinery

## **WORKMANSHIP**

### **General**

All work shall be accurately constructed to details, lines and levels. All joints shall fit neatly and closely. All work shall be securely and correctly fixed in position.

Exposed surfaces shall be scraped and sanded to remove machine and hammer marks and other blemishes.

All exposed edges of posts, decking, bearers and joists etc. must be bevelled or rounded off and splinters and sharp edges removed.

All posts shall be placed in the ground rigid, plumb and true and according to the Drawings. Concrete footings shall finish below ground level as described in the section - concrete footings under play equipment in this Specification.

### **Fixing and fasteners for timber work**

#### **Important Note**

All decking, railing, infill members, cladding and similar to be pre-drilled and screwed rather than nailed.

#### **No nails to be used unless approved by the Superintendent.**

Ensure screws do not protrude through to other side of timber.

All larger members shall be bolted or coach screwed together. Galvanised screws, and bolts with hex-drive recessed barrel nuts, or dome or countersunk heads, shall be used.

After installation, any projecting threads shall be cut off below the surface of the timber and the ends of bolts rounded so that no sharp edges remain. Cut bolt ends to be treated with a protective coating.

## **MATERIALS & INSTALLATION**

### **Selected materials**

All other timber, unless otherwise specified, shall be Redried ACQ Treated Pine, suitable hardwood or Tanalised Ecowood. It is anticipated a six-week lead time will apply to supply of ACQ treated timber.

Treated timber

**Please note CCA treated timber will not be accepted within the project.**

### **Quality**

Timber shall be of the best quality of the species and grades specified.

Timber shall be straight, sound, well seasoned, free from defects including white ant, borer, sap, shakes, loose knots, warp, twist, decay, pith, holes, splits, fractures, bruises. Condemned timber shall be replaced.

Structural and seasoned timbers shall have a moisture content of not less than 10% and not more than 15%.

### **Sizings**

For lengths up to 5m long and 200mm wide-plus or minus 3mm and in accordance with AS 1684 and the Victorian Timber Framing Manual.

'Ex' means the base size of timber prior to dressing.

### **Durability**

Posts, retaining timbers, and other timber used underground or within contact with the ground shall be of durability class one. Treated timber for use underground or in contact with the ground shall be specifically treated for in ground use.

### **Finishing**

All posts, rails and beams to be fine sawn, with edges eased (rounded) to remove sharp corners and ensure a splinter-free surface.

The exposed edges of steps and upper surfaces of wall capping, seat slats and other areas where there is a chance of users falling against edges, as well as the under-side of bearers under decks where children have access, shall be rounded off.

The Contractor should allow to arris edges and generally rough-sand all timber within reach of users on the playground.

### **3. HARDSCAPE ELEMENTS**

#### **General**

It is the responsibility of the Contractor to perform any other hardworks required in order to carry out and complete the Works, whether or not such works are shown on the Drawings or specifically mentioned in this section or other sections of the Specification.

During excavation, every care shall be taken to avoid damage to existing underground installations. Safety precautions regarding trenches, excavation, etc., shall be in accordance with Work Cover requirements.

#### **Scope**

The works include but are not limited to the supply and complete installation of all hardworks including:

- (a) table and benches - picnic setting;
- (b) electric BBQ;
- (c) timber seats with back and arms (3 items);
- (d) bins and bin stands (regular waste and recycled waste);
- (e) fences;
- (f) steel edge; and
- (g) recycled tyres.

#### **FURNITURE**

##### **Table & benches - Picnic settings**

Picnic table and benches have been purchased by the Principal.

The Contractor will need to collect the picnic table and benches from the Council Depot, White Street, South Melbourne. Contractor is to contact the Superintendent a minimum of 3 days prior to collection to co-ordinate site access.

#### **Installation**

Refer to Landscape Detail 11-037-07 for installation details. Contractor to:

- (a) install on concrete pad as per manufacturer's recommendations;
- (b) install concrete pads and ensure that picnic table and benches are secured/fastened to the concrete pad;
- (c) ensure all bolts and fixings are secure and not creating hazards for park user;

- (d) produce a 'shop' drawing detailing how a fixing/anchor can be attached to the base/legs of the seats; and
- (e) locate and install picnic table and benches to locations as indicated on Layout Plan and Setout Plan.

### **Electric BBQ**

Electric BBQ has been purchased by the Principal.

The Contractor will need to be collect the BBQ from Council Depot, White Street South Melbourne and is to contact the Superintendent a minimum of 3 days prior to collection to co-ordinate site access.

### **Installation**

Contractor to refer to the manufacturer's specification regarding installation of the electric BBQ. Contractor to install concrete pad and ensure that the electric BBQ is securely fixed/ fastened to concrete pad. Contractor to refer to manufacturer's specification and relevant Australian Standards for urban infrastructure regarding details of installation.

**The installation of all electrical items shall be performed by a licensed electrician. All electrical work must be supplied with an electrician's certificate upon completion.**

Locate and install electric BBQ at location as indicated on Layout Plan and Setout Plan.

### **Timber Seats with back and arms**

Three timber seats with back and arms have been purchased by the Principal.

The Contractor will need to collect the timber seat from the Council Depot, White Street, South Melbourne. The Contractor must contact the Superintendent a minimum of 3 days prior to collection to co-ordinate site access.

### **Installation**

Contractor to refer to Drawing Standard Detail 6106-01 for installation

Contractor is to install concrete pads and ensure that the timber seats are secured/fastened to the concrete pad. Contractor is to install on concrete pad in accordance with the manufacturer's recommendations. The Contractor must with the Superintendent regarding Council standards of timber seat installation and co-ordination of equipment specific to timber seat installation. Contractor to ensure all

bolts and fixings are secure and not creating hazards for park user. Contractor is required to produce a 'shop' drawing detailing how a fixing/anchor can be attached to the base/legs of the seats.

Install three timber seats with back and arms in Waterloo Crescent Park.

Locate and install timber seats with back and arms to locations as indicated on Layout Plan and Setout Plan.

### **Bins and bin stands - recycling and regular waste**

Contractor to install 1 x regular waste bin and 1 x recycled waste bin, including bin stands, concrete pad and concrete footing.

Contractor to retain existing regular waste bin on site for re installation in the new landscape redevelopment. Existing regular bin and bin stand to be removed and stored at Council depot. The Principal will supply a recycling bin and 2 x bin stands. Contractor will need to collect both recycling bin and regular waste bin and stands from the Council depot, White Street, South Melbourne. Contractor to confirm collection of bins with Superintendent prior to works.

### **Installation**

Contractor to refer to manufacturer's specification regarding installation of all bin and bin stands. Contractor to install on concrete pad as per manufacturer's recommendations, Contractor to liaise with Superintendent to ensure Council standards regarding bin locations are ensured.

The Contractor must attach bins to 'PlastiPole Slam Lock System' (system to be supplied by the principal. 'PlastiPole' which will be inserted into the ground at the correct height by the Contractor to cater for the bin size.

Contractor to supply install Plastipole (bin stands) with concrete footing. Contractor to refer to manufacturer's specification regarding specific dimensions of concrete footing.

Contractor to install concrete pads as per manufacturer's specification and ensure that bin stands and bins are securely fastened to concrete pad. Contractor to ensure all bolts and fixings are secure and not creating hazards for park user. Contractor is required to produce a 'shop' drawing detailing bin stand will be fixed to concrete pad. Locate and install bin stands and bins to locations as indicated on Layout Plan and Setout Plan.

The minimum distance between each bin is to be 1800mm.

Contractor to refer to manufactures specification regarding installation of all bins and bins stands. Contractor to install on concrete pad and concrete footings as per

manufacturer's recommendations. Contractor to confirm with Superintendent all concrete works prior to installation.

The Contractor will need to collect regular waste bin, recycling waste bin and bin stands from Council Depot, White Street South Melbourne. The Contractor is to contact the Superintendent a minimum of 3 days prior to collection to co-ordinate site access.

## **FENCES**

### **Scope**

Contractor to supply and Install all fences where shown on the Layout Plan and Setout Plan. New fencing has been specified along the front of the site and extending from the corner of the existing Citipower Building. The fence is in two sections forming a chicane arrangement. Refer to Layout and Setout drawing for location and orientation of fences.

### **Materials**

Contractor to supply and install 100x 100 hardwood timber post fence with Securifor 358 'Finger proof mesh' black powdercoated fence 900mm HT.

Contractor to ensure that fence infill is non climbable and has no foldholds

Refer to Layout and Setout drawings for location and orientation of fencing  
Suggested Supplier (finger proof mesh): HI-SECURITY FENCING & GATES Pty Ltd  
Contact: PO Box 1200 Narre Warren VIC 3805, Phone: 0419 991 572

### **Installation**

Contractor to refer to manufacturer's specification regarding installation of fences.

Contractor to install fence posts in concrete footing as per manufacturer's recommendations. Install all fences where shown on the plan. New fencing has been specified along the front of the site and extending from the corner of the existing Citipower Building. The fence is in two sections forming a chicane arrangement. Refer to Layout and Setout drawing for location and orientation of fences.

## **STEEL EDGING**

### **Scope**

Contractor to supply and install steel edging along any area where turf areas directly abut garden bed area. Refer to Layout and Setout drawings for location and orientation of steel edge.

## **Materials**

Contractor to provide sample of steel edge to Superintendent prior to purchase and instillation

75mm x 75mm and 4mm thick galvanized steel or aluminum edge with 10mm diameter and 300 mm long pegs/ pins.

Peg/ pin tops 15mm below the top of the edging. Steel edges shall be laid straight to line and level with a maximum deviation over 300mm of 3mm. Edge shall be rolled for form smooth curves with even radius.

Suggested Supplier: Link Edge

Contact: 32-34 Cormack Road, Wingfield 5013, South Australia, Phone: (08) 8347 4447

Web: [www.linkplus.com.au](http://www.linkplus.com.au)

## **Installation**

Contractor to refer to manufacturer's specification regarding installation of all steel edging, steel edging to be installed as per manufacturer's recommendations.

Install to all edges where shown on the plan. Steel edge has been specified between turf and garden bed areas only.

General: set edging flush with adjoining surface to define planting and turf areas. All edges to be uniformly laid. Where two edge lengths but joint ensure a seamless join.

The Superintendent is to be notified when the shaped edges are ready for instillation.

The Superintendent shall approve the quality and standard of the first length of edge to be laid. This shall be used as the benchmark for the standard and quality of the remainder.

## **RECYCLED TYRES**

### **Scope**

Contractor to supply and install recycled tyres to form garden bed edge along base and incline of mound. Tyres are to be fixed into concrete pad and fixed together with stainless steel bolt. Recycled tyres will form edge of garden beds and retaining edges on sloping side of mound slide. Refer to Layout and Setout drawings for location of mound and orientation of recycled tyre edges.

### **Materials and Appearance**

Recycled tyres are to be smooth and free of damage such as protrusions rips and sharp edges. All tyres must be of a standard passenger tyre size and must be of a uniform size. When installed, height of adjoining tyres will be even and level. Tyres must be fixed together using and appropriate stainless steel fastener bolt. The

fastener bolt must be screwed and tightened to ensure that adjoining tyres are rigid and

Tyre fixing and Fastening: Fastener must be stainless steel. Contractor to specify fastener style and to confirm with Superintendent prior to fixing tyres together.

Refer to the section - concrete - for concrete pad construction specification as well as Landscape Details Sheet for Tyre Fixing Detail  
Suggested Supplier: C + N Ruggiero  
Contact: 552 Geelong Road Brooklyn, Victoria, 3012, Phone: (03) 9314 8833  
Web: <http://www.cnruggiero.com.au/>

## **Execution**

Supply and Install tyres fixed into concrete pad.

Tyres are to be arranged so that they:

- (a) effectively retain soil/ garden bed to finished levels;
- (b) are at least one third buried in the ground as per detail;
- (c) achieve a natural appearance in their placement - i.e. the 'natural' surfaces are exposed ( i.e. do not expose surfaces which were previously buried);
- (d) are completely stable and unable to be rocked or moved; and
- (e) achieve the levels, step heights and layout nominated on the Drawings.

**Note: the levels of all tyres have been carefully documented to meet the Australian Standards for Playspaces. AS 4685. Therefore the rock work needs to be installed to meet these dimensions.**

## **4. PLAY EQUIPMENT**

### **GENERAL**

All components and structures to comply with Standards as mentioned in this document, and to be constructed according to industry best practice.

In particular the play space must comply with AS4685 -all parts.

Contractor to ensure that location for play equipment installations in clean and free of spoil and waste. Contractor to ensure that area nominated as playspace area is excavated to a depth of 320 mm prior to play equipment installation.

All play equipment has been pre purchased by the Principal. The Contractor must liaise with the playground equipment company to coordinate delivery and installation.

## **Warranties**

The suppliers/sub-contractors shall be fully responsible for the provision of all warranties for their products, and for the provision of any detailed design and engineering computations as may be required to ensure that such products comply with all relevant Standards and industry practices, to the satisfaction of the Superintendent.

## **Work by others**

Work by others includes:

- (a) supply and installation of impact absorbing synthetic surface to top of mound and to sides of slide run. One side of slide to be formed into 'steps'. Contractor to confirm with Superintendent for nominated supplier; and
- (b) supply and installation of playground equipment by Proludic. Contact Polin Sok (03) 8682 8536.

## **Co-ordination**

Prior to commencement of works, the Contractor shall liaise with the play equipment suppliers (Proludic), and wet pour rubber softfall supplier regarding the Construction Drawings and in particular the means of installing play equipment items and components to structures.

In particular the following co-ordination is required with:

- Proludic -play equipment suppliers regarding fall zones, footings and installation.

## **SCOPE**

The play equipment items and components, except where stated have been pre purchased by the Principal. Installation is to be carried out by sub-contractor authorized by the manufacturer to install the equipment.

Supply and install play equipment as per equipment schedule below.

## **Schedule of play equipment**

Unless approved equivalent products are allowed, the Contractor must supply and install the specific product listed.

ITEM	SPECIFICATIONS	COLOURS	SUPPLIER/CONTACT
Double Swing'2.4 m ht  <b>Supply &amp; install by others.</b>	1 x adult seat and 1 x toddler seat.	Standard	Contact: Polin Sok  <b>Proludic Pty Ltd</b> - Items have been pre-purchased by the Principal  PO Box 8050 Dandenong VIC 3175  T. 03 8682 8536. M: 0419 811 786 E. <a href="mailto:psok@proludic.com.au">psok@proludic.com.au</a>
Hip Hop Slide' modified to embankment slide  <b>Supply &amp; install by others.</b>		Standard	Contact: Polin Sok  <b>Proludic Pty Ltd</b> - Items have been pre-purchased by the Principal  PO Box 8050 Dandenong VIC 3175  T. 03 8682 8536. M: 0419 811 786 E. <a href="mailto:psok@proludic.com.au">psok@proludic.com.au</a>

ITEM	SPECIFICATIONS	COLOURS	SUPPLIER/CONTACT
'Speed Gyro ' spinner  <b>Supply &amp; install by others.</b>		Standard	Contact: Polin Sok  <b>Proludic Pty Ltd</b> - Items have been pre-purchased by the Principal.  PO Box 8050 Dandenong VIC 3175  T. 03 8682 8536.  M: 0419 811 786  E. <a href="mailto:psok@proludic.com.au">psok@proludic.com.au</a>
Custom Viva City 'multi play unit.  <b>Supply &amp; install by others.</b>		Standard	Contact: Polin Sok  <b>Proludic Pty Ltd</b> Items have been pre-purchased by CoPP.  PO Box 8050 Dandenong VIC 3175  T. 03 8682 8536.  M: 0419 811 786  E. <a href="mailto:psok@proludic.com.au">psok@proludic.com.au</a>

## SLIDES

Ensure that slides have a fall zone in the run-out area extending 2.0m beyond the end of the slide and 1.5m to each side of the outer edges of the slide.

Ensure there is no entrapment under the slides.

## GENERAL EXECUTION

### Installation

The Contractor is responsible for checking the dimensions of connection points for components on site, prior to fabrication. Should any discrepancy arise between the situation on site, and the Drawings, the Contractor shall resolve this with the Superintendent prior to fabrication/purchasing of components.

The Contractor is responsible for ensuring that installation and connections between items comply with the playground safety standards specified in this document to the approval of the landscape architect. No claim shall be entered into due to a failure to

accept this responsibility and the Contractor shall rectify any problems which arise at his/her own expense to the satisfaction of the landscape architect.

## **Heights**

Heights of general landscape elements such as rocks, logs and low decks to be less than 500mm or an impact absorbing fall zone must be provided that conforms with Australian Standards.

## **Certification**

The manufacturers supplying the formal play equipment should provide written certification that their equipment and the installation conforms to all Australian Standards.

## **Warranties**

Contractor to provide written warranties for all play equipment installed.

## **5. SOFT LANDSCAPING**

### **GENERAL**

#### **Scope**

This section includes but is not restricted to construction of the following:

- (a) planting area preparation, top-soiling and pre planting preparation;
- (b) supply and planting of shrubs and low planting/grasses;
- (c) supply and planting of tree stock; and
- (d) soft landscape maintenance.

### **PLANTING SCHEDULE**

**The Planting Schedule is shown on the Landscape Drawing: Planting Plan**

#### **Cross References**

Refer also to Site Preparation, Demolition and Earthworks section.

## **Approvals**

Contractor to provide samples of materials for approval prior to ordering.

The Contractor must seek approval from the Superintendent at the following stages, prior to proceeding to the next stage of work:

- (a) cultivated subgrade;
- (b) if imported topsoil is required then a provide a sample and certification that the topsoil meets Australian Standards; and
- (c) setout of all advanced trees and shrubs prior to planting

## **SOIL AND GARDEN BED PREPARATION**

### **Plant and Tree stock**

Supply plants which:

- (a) are sourced from a known local provenance within Victoria;
- (b) have large healthy root systems, with no evidence of root curl, restriction or damage;
- (c) are vigorous, well established, free from disease and pests, of good form consistent with the species or variety; and
- (d) are hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.

### **Supply**

Contractor shall confirm supply of all plants at the earliest opportunity following commencement of the contract.

### **Substitutions**

Make no substitutions unless approved by the Superintendent.

### **Replacements**

Order sufficient quantities to allow for plant failures. Using plants of the same type, quality and size, replace any plants which are damaged whilst being transported to the site or during the work under the contract, or which fail or are rejected.

## **Storage**

Deliver plant material to the site on a day to day basis, and plant immediately after delivery. If this is not possible, keep the plants in good condition on the site, adequately protected from frost, wind, sun and vermin by appropriate storage methods, including an on-site nursery of sufficient size, with provision for watering the stock. Before proceeding, submit a site storage proposal. Do not store plants on site unless authorised. Ensure that plants are stored in a secure place to prevent theft and or damage.

## **Trees**

Ensure that all trees have a good caliper size and good foliage. Trees are to be installed as per the Drawings, refer to tree planting detail.

## **Plant Containers**

Supply plants in weed-free containers of the required size.

## **Grading**

Refer to the section - earthworks, for all details regarding earthworks, grading and excavation.

## **Planting Spacing**

Refer to the Drawings and planting schedule.

## **Planting Bed Preparation**

## **General**

Notify the Superintendent if any planting areas show signs of compaction from vehicles, stockpiled materials and the like prior to planting. Prepare garden beds firstly by removing all debris, stones and left over building materials arising from the works, in excess of 45mm diameter shall be removed from site.

## **Scope**

New planting beds are as shown on the Drawings.

## **Sub-grade cultivation**

New planting beds to have sub-grade cultivated to a depth of 150mm prior to backfilling with existing site soil. Ensure caution when cultivating over service lines, pipes and around tree roots and if necessary cultivate using hand tools. Do not cultivate within 600mm of proposed or existing hard paved areas and structures.

Cultivate parallel to the final contours wherever possible. Do not cultivate when the subsoil is wet or plastic.

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.

### **Garden Bed Construction**

**Prior to excavation, ascertain location of existing underground services. Notify the Superintendent should any problems with services arise.**

Form sub grades to the levels required by the Drawings and surrounding surfaces.

In proposed garden bed areas the Contractor is to form and smooth the subgrade where necessary to the levels nominated. Garden beds are to be cultivated to a depth of 150 mm, with subgrade adequately loosened. No compacted areas of subgrade are to remain, or depressions where water can pool under the topsoil. Damage to tree roots is to be avoided. Surfaces must drain positively to drains.

### **Topsoil**

Place topsoil to depth indicated.

Topsoil shall be stockpiled site topsoil or if not available in significant quantities supplement with approved imported locally screened topsoil. Topsoil to meet current Australian Standard for landscaping soils.

### **Composted mulch – Soil Conditioner**

The Contractor shall supply, spread and cultivate super fine-composted mulch/soil conditioner to all designated garden bed areas. The super fine-composted mulch/soil conditioner shall be firstly spread to a depth of 100mm then lightly cultivated into the existing garden beds.

The mulch shall be well composted and treated to ensure there is no growth inhibitor. It shall be free from clods of soil, rock, vermin, toxins and any other extraneous matter.

## Fertiliser

Apply a slow release fertiliser to all plants at time of planting (Osmocote® or similar approved for type of plant). Fertilise Australian native plants with an approved Native fertiliser low in phosphorus.

Apply Terracottem to planted areas according to manufacturer's instructions. Terracottem supplied by the Principal.

## Mulch

The Contractor shall supply and spread a 75mm layer of approved Euca-Mulch to all garden bed areas after cultivation.

The mulch shall be free from clods of soil, rock, vermin, toxins and any other extraneous matter.

The mulch shall be raked smooth to achieve an even and neat appearance and kept clear of stems of plants to avoid contracting collar rot.

## PLANTING SCHEDULE

### WATERLOO CRESECENT PARK – LANDSCAPE UPGRADE WORKS

<b>SPECIES</b>	<b>COMMON NAME</b>	<b>POT SIZE</b>	<b>QTY</b>
<b>TREES</b>			
<i>Hymenosporum flavum</i>	Native Frangipani Red Flowering	45 litre bag	3
<i>Corymbia ficifolia 'Calypso'</i>	Gum	45 litre bag	2
<b>SHRUBS</b>			
<i>Acacia brownii</i>	Heath Wattle Sticky Wattle	300mm pots	17
<i>Acacia howitti 'Green Wave'</i>	cultivar	300mm pots	3
<i>Adenanthos sericeus 'dwarf'</i>	Dwarf Woolly Bush	300mm pots	14
<i>Banksia spinulosa 'Bush candles'</i>	Bush candles	300mm pots	20
<i>Craspedia glauca</i>	Common Billy Button	300mm pots	71
<i>Correa glabra 'Colliban River'</i>	Rock Correa cultivar	300mm pots	7
<i>Callistemon pearsonii 'Rocky Rambler'</i>	Callistemon cultivar	300mm pots	12
<i>Grevillia lanigera 'Pink Woolly'</i>	Woolly Grevillia Purple Coral Pea	300mm pots	12
<i>Hardenbergia violacea 'Meema'</i>	cultivar	300mm pots	13
<i>Isopogon formosus dwarf grey 'Pink Profusion'</i>	Rose Cone Flower cultivar	300mm pots	8
<i>Westringia fruticosa 'Mundi'</i>	Coastal Rosemary cultivar	300mm pots	8
<b>GRASSES / LOW PLANTING</b>			

<i>Dianella caerulea</i> 'Cassa Blue'	Blue Flax Lily	140mm pots	89
<i>Dianella caerulea</i> 'King Alfred'	Large Flax Lily	140mm pots	34
	Red Tasman Flax		
<i>Dianella tasmanica</i> 'Tas Red'	Lily	140mm pots	96
<i>Ficinia nodosa</i>	Knobby Club Rush	140mm pots	50
	Spiny-headed Mat-		
<i>Lomandra longifolia</i> 'Tanika'	rush	140mm pots	83

<b>SPECIES</b>	<b>COMMON NAME</b>	<b>POT SIZE</b>	<b>QTY</b>
<i>Lomandra 'Lime Tuff'</i>	'Lime Tuff' Lomandra cultivar	140mm pots	84
<i>Poa labillarderi 'Eskdale'</i>	Large tussock grass	140mm pots	70

## **PLANTING TREES, SHRUBS AND GROUNDCOVERS**

### **Scope**

- Advanced trees: supply, plant, stake, fertilise & water.
- Shrubs - supply, plant, fertilise & water.
- Tussocks / Groundcovers: supply, plant, fertilise & water as indicated on the plans.

### **Materials**

All plant materials shall be subject to the approval of the Superintendent.

Plants shall be true to species, vigorous and healthy and the best of their respective kinds. They shall have a well developed root system and be free from disease pests, scars and dead wood. Pot bound stock shall be rejected.

Advanced trees shall have a vigorous central leader, an open branching framework, and well formed open 'v' limb crotches.

All trees, shrubs, grasses and ground covers shall be from containers as specified on the Drawings. All pot sizes and heights are minimum.

Tree set out to be approved by Superintendent prior to planting.

Care shall be taken to ensure that the roots are not exposed to the drying influences of sun, wind or frost.

### **Planting Procedure**

Thoroughly soak plants on day before planting. Set out plant materials as per the Drawings for inspection by the Superintendent.

Dig hole sufficient for root ball. Notify the Superintendent if the soil conditions may be detrimental to growth of plants.

Dig in slow release fertiliser at base of hole.

The removal from the container and the positioning of the plant is to be done with minimum disturbance to the roots. Set plants plumb in the centre of planting hole, avoid damaging or teasing roots. All stock shall be set plumb and placed to ensure a normal relationship between the crown and soil surfaces. Backfill hole with excavated material.

Form a bowl around plant by mounding topsoil above finished grade. Ensure there is no soil or mulch built up around the trunk which will rot the trunk around plants and advanced trees.

### **Staking**

3 No. Stakes are to be provided to each advanced tree. All other plants are to be staked only if plants require support.

Stakes to be 50x50x50mm durable hardwood, straight and free of knots or warping; pointed at one end.

Black polypropylene webbing 50mm wide to be used for tree ties.

### **Watering**

All stock shall be thoroughly watered immediately after planting. The stock shall be kept moist at all times during the contract period.

### **Mulching**

Garden beds shall be mulched as shown on the Drawings and as specified in the section on mulch.

### **Edging**

Edging between garden bed and new turf area will be achieved with steel edging. Refer to the section - steel edging. Refer to Layout Plan and Setout Plan for exact location and orientation of steel edge

Where garden bed is seen to meet softfall mulch, edging is to be a formed banked earth edge.

## **Plant Replacement**

Any stock which becomes damaged, dies or is found to be unhealthy during the contract period shall be replaced. All stock replacements shall be planted as specified, at the Contractor's expense, and shall be kept moist at all times and free from disease.

Immediately all planting is completed the Contractor's liability for plant replacement is limited to once only, in the case of loss by malicious damage or vandalism. The Contractor shall report any such malicious damage to the Superintendent who shall inspect the damage prior to replacement. Immediately after the replanting, notify Superintendent who will record any such replacement.

This clause does not limit the Contractor's responsibility for replacement if the loss is brought about by any other cause.

## **GRASS AND TURF**

### **GENERAL**

#### **Scope**

Contractor to repair to the satisfaction of the Superintendent any damage to grassed areas outside of the play area.

Supply and install new living turf as specified on Drawings.

Edging between garden bed and new turf area will be achieved with steel edging. Refer to the section - steel edging. Refer to Layout Plan and Setout Plan for exact location and orientation of steel edge.

#### **Cross-Reference**

Refer to earthworks and Drainage, soft landscaping and maintenance for this specification.

#### **Protection**

All measures should be made to retain the health and integrity of the existing lawn.

Temporary mesh fencing should be the minimum necessary to protect existing turf and new turf during works or as directed by the Superintendent.

## **LIVING TURF**

### **Turf Specification**

Turf shall be Sir Walter Premium Lawn soft buffalo grass. It shall be supplied, handled, laid, water and fertilized strictly according to the supplier's specification. The turf must not contain any noxious or objectionable broadleaf weeds or grasses.

Unspecified grass plants must not exceed 1 per 100 m<sup>2</sup> and must not affect the unevenness of the turf.

All turf shall have a maximum nominal thickness of 200 mm. Measurements of thickness shall exclude the growth of thatch.

### **Location**

New turf is to be laid in the area indicated as 'lawn' on the plan. This area is limited to the edge of the existing lawn acting a means to remediate the damage to exiting lawn due to construction works.

### **Preparation**

The designated area shall be prepared and topsoiled as specified and fertilized as follows:

Topsoiling: Supply and install 100 mm deep topsoil to all instant turf areas.  
Start Fertilizer for Turf Lawns: A prepared mix of approved lawn fertilizer NPK ratio 12:12:8 at a rate of 40g/m<sup>2</sup> shall be spread evenly over the prepared bed. The fertilizer shall be raked into the bed to a depth of 50 mm and applied at the time of turfing (not more than 48 hours prior to laying turf).

### **Handling**

Turf must be delivered to the site within 24 hours after being cut and shall be installed within 36 hours after being lifted from the nursery.

During handling operations and before turf is laid it shall be placed in layers with grass to grass and roots to roots. The stacks of piled layer sprayed with water and covered with moist hessian as required.

During wet weather, the turf shall be allowed to dry sufficiently before lifting to prevent tearing, to allow easy handling and placing; and during dry weather the turf

shall be watered before lifting to ensure vitality and to prevent dropping off of soil by handling.

### **Placement**

With topsoil raked smooth. Lay turf. Before unrolling the leading edge of the rolled strips should be firmly butted to the preceding strip. Once unrolled, the strip is to be pushed sideways into place. The turf is always to be pushed sideways into place. The turf is always to be pushed sideways into place. The turf is always to be pushed into place and not pulled.

To shape edges around gardens, curbs, curved edges etc, the roll shall be laid in place and cut into shape with a sharp knife.

Any occasional gaps that between turf roll are to be filled with topsoil and tamped. Entire laid surface are to be tamped with a flat board.

Immediately after laying, sweep all finished work with soft hair broom and water generously to saturate depth of 150mm depth. The following day, again saturate to a depth of 100mm. In these first two waterings, the depth to which the water is penetrating is to be checked. This shall be done by carefully picking up corners of a random sample of several turf strips at intervals across the new lawn. Ensure edges receive adequate water by watering well passed the grassed edge.

### **Turf establishment**

Turf shall be thoroughly watered twice a week for the first two weeks except in periods of heavy rain.

## **6. LIGHTING**

### **GENERAL**

#### **Notes**

- All works shall be carried out in accordance with all relevant Australian Standards, in particular AS 3000:2007 and Victoria services installation rules. In addition works shall comply with the requirements of relevant authorities having jurisdiction over the works.
- All works shall be carried out in accordance with the requirements of the technical specification for electrical services (see Drawing E003) including requirements for 'as built' documentation, maintenance etc.
- The Contractor shall remove from site all rubbish, debris, material cuttings and other redundant material which results from the works of the contract. In particular redundant cabling and obsolete equipment shall be disconnected and removed from site.

- Contractor to provide:
  - maintenance and servicing for at least 12 months from the date of practical completion; and
  - shop drawings prior to commencement of works, installation manuals and 'as built' records.
- Final locations and colour selection to be in accordance with the requirements of the specification, details and drawings.
- Drawings to be read in conjunction with the luminaire schedule.
- All luminaires shall be cleaned prior to practical completion.
- Submit a layout shop drawing indicating the setout of the luminaires for approval from the Superintendent. Set out dimensions to be confirmed on site with Superintendent.
- The Contractor shall allow for the 4 existing lights and pole to be disconnected, removed and disposed of from site.
- Contractor to confirm location of underground power conduit with Superintendent prior to undertaking any excavation and installation of cabling.

The Contractor must perform any other electrical required in order to carry out and complete the works, whether or not such works are shown on the Drawings or specifically mentioned in this section or other sections of the specification.

During excavation, every care shall be taken to avoid damage to existing underground installations. Safety precautions regarding trenches, excavation, etc., shall be in accordance with Work Cover requirements.

**The installation of all electrical items shall be performed by a licensed electrician. All electrical work must be supplied with an electrician's certificate upon completion.**

## Scope

The works include but are not limited to the supply and complete installation of all lighting including:

- (a) removal and disposal of the existing light pole light fittings (4.no) as indicated on the drawing, including removal of the circuit breakers feeding the lighting circuit feeding on the existing electrical distribution board/ meter panel. Contractor to confirm with the Superintendent prior to disposal of light pole to ensure that poles cannot be retained for future installation by the Principal;
- (b) supply and installation of new pole light fittings as indicated on the Drawing including new power supply conduits and new circuit breakers at the DB/MP. Include for an independent structural engineer to review the light pole footings prior to installation;

- (c) supply and install a new adjustable 365//24/7 time clock within the existing DB for the external lighting circuit. The time clock setting shall be for lighting to be operational during non daylight savings period from 1730hours to 2100hours. Setting to be confirmed with the Superintendent;
- (d) provide certificate of electrical safety for the installation; and
- (e) provide certificate of compliance to AS 3000:2007 for the installation.

## Material

Contractor to supply and install:

- 3x VM01- WE- EF PFL 230 (S) 108 -0422 METAL HALIDE WITH STREET DISTRIBUTION, ELECTRONIC CONTROL GEAR, SILVER FINISH, 108-0434 POLE MOUNTING BRACKET OR APPROVED EQUIVALENT. WATTAGE 35W
- 1x VM01- WE- EF PFL 230 (S) 108 -0425 METAL HALIDE WITH ASYMETRIC DISTRIBUTION, ELECTRONIC CONTROL GEAR, SILVER FINISH, 108-0434 POLE MOUNTING BRACKET OR APPROVED EQUIVALENT. WATTAGE 35W
- 4 X STRAIGHT ALUMINIUM POLE WITH DIRECT BURIED BASE, SUITABLE FOR 108-0434 MOUNTING BRACKET OR APPROVED EQUIVALENT. POLE HEIGHT TO BE 4M ABOVE FINSH LEVEL

Suggested Supplier: Eagle Lighting

Contact: Victorian Head Office, 17-19 Jets Court, Melbourne Airport, Victoria 3045.  
Phone: (03) 9344 7444. Web: <http://www.eaglelighting.com.au/>

## Installation

Contractor to refer to manufacturer's specification regarding installation of all locate all lighting and install in ground lighting as indicated on the Drawings. Assemble according to manufacturer's instructions.

**The installation of all electrical items shall be performed by a licensed electrician. All electrical work must be supplied with an electrician's certificate upon completion.**

The Superintendent is to be notified when all lighting and underground power conduits are ready for installation. The Superintendent will confirm location of power conduit and subsequent location of boring prior to excavation and installation of cabling. The Superintendent shall approve the location and standard of the lighting prior to installation.

All excavation and earthworks regarding laying of power conduit for lighting will be boring. No open cut trenching will be undertaken around or in close proximity of existing trees. All proposed earthworks must be confirmed with the Superintendent prior to any excavation taking place.

Contractor to ensure that all lighting is not faulty and functioning according to manufacturer's specification.

### **Storage**

Contractor to ensure lights are stored in a secure location prior to installation.

## **7. MAINTENANCE**

### **Scope**

The maintenance period has been specified as 13 weeks.

Maintain the soft landscape works for 13 weeks from Practical Completion (as defined in the contract) and present the site at all times until then in a clean and tidy condition.

### **Records**

Maintain a log book of all maintenance work and which materials have been used on the site. Make the records available upon request.

### **Planting/Garden Bed Maintenance**

Adequate watering must be provided to ensure successful establishment in the critical first weeks and to ensure vigorous and healthy plant growth is achieved.

A management plan should be prepared and followed by the Contractor (as per seasonal requirements) for watering, post-fertilising and weed eradication.

## **EXECUTION**

Maintenance tasks include the following:

- (a) regular site visits to monitor and rectify defects in planting;
- (b) removal of weeds;
- (c) maintenance of mulch surfaces, including topping up of garden bed mulch to design levels;
- (d) seasonal spraying to maintain plants pest free, according to manufacturer's
- (e) instructions;
- (f) watering to maintain healthy growth;

- (g) replacement at no cost of damaged or failed plants;
- (h) cleaning up of grounds and care of protective fences;
- (i) other works as necessary to maintain the works in the best possible condition;  
and
- (j) urgent maintenance works as directed by the Superintendent.

The Contractor must provide instruction as to the proper operation and maintenance of all aspects of the project and ensure a seamless hand over with no detriment of the quality of the landscape.

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