3. Specification

Table of Contents – Specification

Specification

1. GENERAL INFORMATION

1.1. PROJECT

The works are called Middle Park Beach Landscape and this project is part 2 of 2 of the development of this area. Part 1 was the construction of a toilet block, which was completed in September 2010.

1.2. SITE LOCATION

The site is located on the beach side at 255a Beaconsfield Parade, Middle Park. Melways Reference page 57, grid G7.

1.3. SCOPE OF WORKS

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

The work included in this specification comprises 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 in this contract include but are not limited to the following:
- Insitu Exposed Aggregate Coloured Concrete Pavement
- Timber decking
- Installing concrete paving units
- Concrete and timber modular seating
- Construction of a retaining wall on existing beach wall
- In ground lighting installation
- Sub Soil Drainage
- Instant turf grass installation
- Gravel Mulch
- Soil works
- Hydraulic connection of beach shower and drinking fountain
- Installation of fitness equipment
- Shrub & Low Cover Planting
- Rain garden construction
- Site Furniture & Miscellaneous Items

1.4. PROJECT WORKS PROGRAMME

The Project Works Program need not be submitted at the closing time of Tender but the Tenderer shall submit a Project Works Programme within seven days of a written request to do so.

The Project Works Program shall be attached to upon receipt, and form part of the Final Contract Document.

The Project Works Program shall be based on a date of acceptance of tender or commencement date that will be nominated in this document.

The Project Works Program 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.
(d) Company rostered days off & public holidays and non-working days.
The Project Works Programme will be included in the Contract as the construction programme until varied in accordance with any other provision of the Contract.

2. GENERAL LANDSCAPE CLAUSES

2.1. 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.

2.2. OCCUPATIONAL HEALTH & SAFETY

The Contractor shall be responsible for ensuring that the requirements of the Occupational Health and Safety Act and all relevant Occupational and Safety Authority and Workcover regulations are adhered to.

It is important that work be carried out in a safe manner to ensure the safety of the

Contractors work force, the Principals staff or agents who have access to the site as well as the general public.

Works shall be carried out in accordance with the OH&S requirements of the Quality Assurance Specification. Prior to commencing work the Contractor shall supply to the Superintendent a job specific OH & S plan which, on approval shall be implemented throughout the duration of the works.

The site safety plan shall include OH&S procedures relating to Plant Safety, workers safety and Public safety shall be instituted as a minimum requirement under this Contract.

The Contractor is to be registered as an employee pursuant to the provision of the Accident Compensation Act 1985 (Workcare) from the date of commencement of the works to the expiration of the maintenance period.

2.3. 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 closed at all times; tools shall not be left accessible to the public.
Note: Access along the footpath and bike path, toilet block and access to beach allowing one of the two ramps to be open, must be maintained at all times.

It is the responsibility of the Contractor to ensure that all visitors and Sub Contractors are made aware of these conditions. The Contractor is responsible for the actions of all Sub- Contractors.

2.4. QUALITY ASSURANCE SYSTEM

The Quality Assurance system to be employed under this Contract shall be in accordance with the quality requirements of the Relevant Authorities/Agencies. The Contractor shall plan, establish and maintain a quality system in accordance with the requirements of the contract.

2.5. HOURS OF WORK & INSPECTIONS BY RELEVANT AUTHORITIES

The Contractor shall comply with the regulations of the Environmental Protection Authority, Local Regulations and other Statutory Regulations, which may prevail in respect of working hours. He 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 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.

2.6. SITE ACCESS

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

2.7. SITE CLEARING

Requirement: Clear only the site areas to be occupied or affected by the works. Refer to drawings for specific extent of demolition.
Existing Grass: Remove existing grass to a depth including the root zone.

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

2.8. SITE COMPOUND / ACCESS & SECURITY

The Contractor shall allow for a site compound to adequately and safely store all materials necessary for the construction works. Where security is a concern, fencing and/or security surveillance shall be arranged.

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

2.9. STATUTORY AUTHORITIES' FEES

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

2.10. PROTECTION OF PROPERTY AND SERVICES

2.10.1. 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 damage/injury to such structure, service or property, the party controlling it must be immediately informed of the damage/ injury. The Contractor will at his own expense arrange the repair and restore any structure, service or property damaged in any way, to the like order and condition in which it was before such damage.

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.

2.10.2. 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 shall be held responsible for the cost of making good any damage to existing services and mains, whether or not they are shown on the drawings.

2.10.3. Damage by Others

The Contractor is to be 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.

2.10.4. Protection of Roads

The Contractor will be held 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.

2.10.5. Protection of Assets

The Contractor will be held responsible for any new damage to existing assets. It is the Contractors responsibility to identify any defective works prior to the commencement of their Contract. 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 their 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 and repaired as soon as possible.

2.11. SPOIL DISPOSAL FROM EXCAVATIONS BY OTHERS

Where failure by the Relevant Authorities and external Contractors to remove spoil from their operations will result in delays to the progress of works, the Contractor shall be responsible to remove and dispose of the spoil. Adequate notice (min 48 hours) and approval by the Superintendent is required prior to works. This work shall be treated as a variation.

2.12. 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.

It is recommended that the Contractor undertake site photos 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 given the likely timing of construction.

2.13. UNAUTHORISED DISPOSAL

The Contractor is to 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.

2.14. SITE MANAGEMENT PLAN

The Contractor shall submit a Site Management Plan prior to works commencing.
The plan shall as a minimum detail:

2.14.1. 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 shall be responsible for any damage arising from the neglect or insufficiency of such precaution.

2.14.2. 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 Contractors lump sum price.

2.14.3. 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.

2.14.4. Site Facilities

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

2.14.5. Environmental Control Measures

The successful tenderer is required to prepare and submit an Environmental Management Plan (EMP).
Please refer to attached EMP submission guidelines.
The EMP will be required to include the following items, as well as contractor-specific items.

- Machinery access
- Site compound
- Storage of loose materials
- Work in drainage lines
- Remediation techniques

2.14.6. Tree Preservation

The utmost care must be taken by the Contractor to preserve trees which stand 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.

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.
f) Spillage of toxic substances within the spread of the tree canopy (ie Fuel, oil, etc).

2.14.7. 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.

2.15. 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.

2.16. SITE MEETINGS

The Contractor, Superintendent and representative of the Principal shall meet on site at generally 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.

2.17. 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.

2.18. 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.

2.19. 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.

2.20. 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 homogenous 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.

2.21. 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 will be held responsible for any vehicle engaged on the works of the Contract 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.

2.22. 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.

2.23. 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 Government Regulations.

2.24. 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.

2.25. HOLD POINTS

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.

Set out of concrete modular seating 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 concrete slab under decking.
The superintendent shall inspect the concrete slab to ensure adequate drainage holes have been made, prior to timber deck installation.

Set out of plants prior to the commencement of any planting. The Contractor is to set out all plants in their respective garden beds for confirmation on site by the Superintendent.

Practical Completion Inspection

Final Completion Inspection

2.26. SAMPLES & APPROVALS

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

• Imported topsoil
• Garden bed rock mulch
• New concrete unit pavers
•Colour sample of aggregate mix and colour additives for exposed aggregate concrete paths.
• Concrete modular seating colour and surface finish
• Decking timber sample
• Concrete modular seating timber tops timber sample
• Metal fixtures for concrete modular seating- arm rest, skate deterrents

2.26.1. 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 min. 3 working days prior to any site inspections.
The set out will need to be approved by the Landscape Architect at least one day prior to installation; at least three days notice of the approval time will be required.

The contractor is to seek approval from the Superintendent at the following stages, before continuing with work.

• OH&S plan
• Tree protection measures
• Items to be demolished/removed
• Approval of imported topsoil prior to use
• Setout of all works
• All hold points
• Samples of all products listed under 2.26 samples and approvals

2.26.2. Certificates & Warranties

Contractor to provide certification:

• 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)

Contractor to provide warranties for:

• Any other products, fixtures and fittings

2.27. 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 of specification but not necessarily in both shall be deemed to be part of the Contract Works.

2.28. VARIFICATION OF DIMENSIONS

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.

2.29. 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.

2.30. 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.

2.31. 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 timbers with which the user can come into contact shall be eased or chamfered (rounded) to remove sharp edges.

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.

2.32. 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.

2.33. 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.

2.33.1. 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.

2.33.2. Following Practical Completion

Upon issue of a Practical Completion Certificate, the Contractor is not liable, only in the case of 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.

2.33.3. Defects Liability Period

Liability for all items as identified within this contract shall be limited to Defect Liability Period, 52 weeks, following the award of Practical Completion or that specified in the establishment and maintenance period, whichever is greater.

2.34. 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 fitness equipment and any other product manuals and warranties have been issued by the Contractor to the Superintendent and received by the Client.

Practical Completion (PC) by the Superintendent and Operational Acceptance by PCL shall be awarded at the same time. Manuals, warranties and compliance certificates are to be site-specific, noting the site, material and installation date.

2.35. 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.

3. SITE PREPARATION AND DEMOLITION

3.1. GENERAL

3.2. SCOPE

The Contractor is responsible for the following works and shall include, but shall not be limited to the following;
• Set out for approval
• Identifying all trees to be protected
• All items to be demolished
• All items to be removed and or retained
• Demolition and disposal of waste
• Environmental protection
• Site restoration

3.2.1. Inspection

Give sufficient notice so that inspection may be made of the following:
• Do not commence other works until tree protection zones have been established and inspected.
• Prior to any demolition works commencing the Contractor is to confirm with the Superintendent all items and areas to be demolished.

3.2.2. Cross References

Refer also to the General Conditions, Earthworks and Soft scape sections of this specification.

3.3. TREE PROTECTION & RELOCATION

3.3.1. 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.

3.4. DEMOLITION

3.4.1. General

It is the responsibility of the Landscape Contractor to 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 required to successfully complete the proposed landscape works. The demolition works shall include all removal of existing surfaces, elements and footings, cutting away, matching to levels, services and any other incidental works necessary to complete the contracted works.

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

3.4.2. Demolished materials

Care shall be taken to ensure that the items for re-use are carefully removed, and carefully stored and remain in serviceable condition, in particular existing pavers which are to be reinstated, bike hoops and bins.

Any leftover materials shall become the responsibility of the Landscape 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.

3.4.3. Removal of picnic set, seats and benches

Care shall be taken to ensure that all existing picnic sets, benches and seats are carefully removed and are carefully stored and remain in serviceable condition when delivered to the Port Phillip City Council depot. A time for delivery to the depot is to be arranged with Mike Fulton, Civil Works Officer from Infrastructure Maintenance Services on 9209 6311 between the hours of 8am and 3pm. A minimum of 24 hours notice is required.

3.5. ENVIRONMENTAL PROTECTION

3.5.1. 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, 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.

3.6. SITE RESTORATION

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.

4. EARTHWORKS AND DRAINAGE

4.1. 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, excavation, etc., shall be in accordance with Work Cover Australia requirements.

4.2. SCOPE OF WORKS

The Contractor shall carry out all earthworks required for the execution of the Works.

The Contractor is responsible for the following works and shall include, but shall not be limited to the following;

• Establishing finished levels and for neatly matching to existing levels
• Achieving positive and effective drainage across the site
• Achieving positive and effective drainage to and in the rain garden
• Excavation for paths, mulch and other areas where required and finished levels for garden bed areas following bulk earthworks
• Excavation for decks
• Excavation for footings for all fitness equipment and other furniture
• Excavation for unit paving and insitu exposed aggregate concrete paving
• Drainage holes in the decking slab
• Matching levels and making good after completion

4.3. TREE PROTECTION

4.3.1. Work near trees

Within the tree dripline or 3.0m from the tree trunk (whichever is the greater distance) the contractor shall seek approval from the superintendent for
• cut and fill operations
• 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 superintendent, 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.

4.4. EXISTING SERVICES

4.4.1. 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.

4.4.2. Excavation

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

4.5. EXCAVATION AND FILLING

4.5.1. General

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.

4.5.2. 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.

4.5.3. 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.

4.5.4. Stabilisation

The Contractor shall effectively and properly stabilise 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.

4.5.5. Spoil

Spoil from the excavation shall where possible be utilised 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.

4.6. 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 contaminates. 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.

4.6.1. 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.

4.6.2. 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.

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.

4.7. COMPACTION

4.7.1. Protection

Protect the works from damage due to compaction operations.

4.8. ROCK OR BAD GROUND

Notify the Superintendent immediately in the case of

• Rock in excess of 0.5 m3. This shall mean monolithic material which cannot be removed until broken up by mechanical equipment.
• 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.

4.9. DRAINAGE

4.9.1. General

Grade all surfaces to ensure that run-off will not pool except for low points in garden beds. Refer to the drawings for the specific grades of each surface.

4.9.2. Hardscaping

Cross- reference sections concrete unit paving & Exposed Aggregate concrete

Paths are to have a minimum 2% slope as to achieve positive grading. Paths are not to pool or collect water.

4.9.2.1. Exposed Aggregate Concrete in shower area

Ensure that a 3% slope is achieved in this area. This area must slope towards the rain garden.

4.9.3. Rain Garden

Cross- reference section 13. 4 Rain Garden

Ensure that surface of the rain garden is not flush with the surface of the surrounding paths. The top surface of the rain garden must be 50mm lower than the surrounding paths.

4.9.4. Garden beds

Cross- reference section 13.3 Garden beds

Garden beds are to be constructed 25mm lower than the surrounding paths finished level.

4.9.5. Decking

Cross- reference section Timber decks.

Concrete slab to be constructed with weepholes. PVC pipe will be inserted in between reinforcement squares before the concrete is poured to create weepholes through the slab.

5. SECTION FIVE. CONCRETE

5.1. GENERAL

5.1.1. Scope

The works include but are not limited to the supply and complete installation of concrete for:
• Insitu exposed aggregate concrete paths
• Concrete modular seating and the slabs which they are constructed on
• Concrete slab which decking is battened off
• Footings for all structures including but not limited to (seats, decking posts, fitness equipment etc)
• Concrete edging around grassed area
• Miscellaneous - all other incidental or consequential work which is or may become necessary to complete the work

5.1.2. 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.

5.1.3. 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

5.1.4. 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.

5.1.5. Project Conditions

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

5.2. CONCRETE

5.2.1. 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.

5.2.2. Water

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

5.2.3. 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 32 MPa concrete.

5.3. REINFORCEMENT

5.3.1. 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 in the drawings.

5.3.2. 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.

5.3.3. 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.

5.4. EXECUTION

5.4.1. Fixing Reinforcement

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

5.4.2. 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.
(c) excavation sides are tight

5.4.3. 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.

5.4.4. Placing of Concrete

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

5.4.5. Concrete Testing

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

5.4.6. 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.

5.4.7. Curing & 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.

6. CONCRETE MODULAR SEATING WITH TIMBER PANELS

6.1. SCOPE

This section includes but is not restricted to construction of the following:
• Construct concrete modular seating with metal fixtures for timber panels.
Refer to the drawings.

6.1.1. Referenced Standards

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

6.1.2. Hold point for setout

Obtain approval from the Superintendent for set out prior to pouring of concrete.

6.1.3. Finish

Levels must match exactly flush, without any trip hazards, between different materials/surfaces. Surfaces must be designed to drain. Finished to be smooth and even with no areas that water can pool. Note: surface of seat under timber must be graded to prevent pooling.

6.2. CONCRETE FORM WORK

32 mpa concrete seat to be constructed with reinforcement mesh as per in the drawings. Seat to be poured on a layer of cement stabilised crushed rock. Colour of concrete to be approved by the Superintendent prior to pouring.

6.2.1. Materials and Components

Mix schedule
Colour of concrete- Boral colouri ‘cashew’ or similar- please provide a sample to and obtain approval from the Superintendent prior to works
Compressive strength 32mpa
Reinforcement Mesh- N12 bars at 300mm centres, centrally located
Finish- smooth matte finish

Ensure that the seat has a minimum wall thickness of 150mm.

6.3. METAL FIXTURES

Metal back support frame, arm rests and timber supports and skateboarder deterrents to be fixed to concrete seat. All metal should be grade 316 stainless steel. All fixtures should be free of sharps.

6.3.1. Specific components

Seek approval from the Superintendent for the following items;

Frame for timber panels to be fixed to

All frame work to be grade 316 stainless steel. Frames to be inserted and set using epoxy or bolted onto concrete.

- **Seat Type A - 4 x metal frame for back of seat and arm rest- to match detailed design**

  Timber panels are to be bolted to the metal support frame. Arms rests are to sit in between timber battens to achieve a clean finish. Timber battens are not to be cut or modified. Use M6-60H Dynabolts or similar approved to fix timber to metal frame.

- **Grade 316 Stainless Steel Skate deterrents placed at 600mm centres**

Suggested Supplier or similar
SkateStop EDGE SSE
SkateStop
Ph: 1300 667 432
Fax: 1300 768 876

- **Timber fixtures for base of seat**

Ramset drop in anchors are to be epoxy set into the concrete. Timber panels are to be fixed to anchors using grade 316 stainless steel bugle head bolts countersunk at 500 centres. Washers are to be placed under the timber to ensure timber is not sitting on concrete to prevent rotting.

6.4. TIMBER PANELS

Timber panels are not to sit on concrete; timber must be supported by metal washers, refer to the drawings.

6.4.1. Specific components

Timber panels to be 45mm x 140mm x 2100mm durability Class 2 Spotted Gum. Please note CCA treated timber will not be accepted within the project. Redried ACQ treated timber is acceptable.

All timber is to be pre drilled off site or in an appropriate enclosure to prevent the spread of saw dust.

A space of no more than 5mm between each panel should be maintained to prevent finger traps.

A minimum of two bolts for each end of each timber panel is to be used to prevent cupping of the timber.

Once installed coat timber with a non coloured timber oil such as linseed oil.

6.4.2. Fixing and fasteners for timber work

Important Note
All timberwork to be pre-drilled and screwed rather than nailed. Except for situations specifically shown on the Drawings, no nails to be used unless approved by the Superintendent.

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.

6.4.3. 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%.

6.4.4. Finishing

All timber is to fine sawn, with edges eased (rounded) to remove sharp corners and ensure a splinter-free surface

6.4.5. Timber workmanship

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 on Concrete footings in this Specification.

Unless otherwise specified the Contractor is to use their own system of framing for the timberworks in accordance with the current Australian Standards as mentioned above

7. EXPOSED AGGREGATE CONCRETE PATHS

7.1. SCOPE

This section includes but is not restricted to construction of the following:
• Construct insitu exposed aggregate concrete paths
Refer to and locate on the drawings.

7.1.1. Referenced Standards

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

7.1.2. Hold point

Obtain approval from the Superintendent for set out prior to pouring of concrete paths.

7.1.3. Finish

Levels must match exactly flush, without trip hazard, between different materials/surfaces. Surfaces must be designed to drain. Finished to be smooth and even with no areas that water can pool. Note: surface of seat under timber must be graded to prevent pooling.

7.2. CONCRETE FORM WORK

Insitu 32 mpa concrete exposed aggregate path to be constructed with reinforcement mesh as per in the drawings. Colour of concrete, size and colour of aggregate to be approved by the Superintendent prior to the pouring of concrete.

7.2.1. Materials and Components

Mix schedule
Concrete Colour- Boral colouri ‘eclipse’ or similar- provide sample and obtain approval from Superintendent prior to works.
Compressive strength 32mpa
Aggregate Colour- Dark tones- no white or brown to be in the mix. Provide sample and obtain approval from Superintendent prior to ordering.
Aggregate Size- 4mm
Finish- smooth shot blasted
Reinforcement Mesh- SL72 mesh- located as per the drawings- minimum 65mm cover at top

8. UNIT PAVING

8.1. SCOPE

Supply and install paving and surfaces as shown on the drawings including:
• New paving areas- supply and install new exposed aggregate concrete paving units (non permeable)
• New paving areas- supply and install new Hydroston permeable paving units
• Existing paving reinstatement- stockpiled pavers from demolition

8.1.1. Set out

Obtain approval for areas of reinstatement of existing paving units, and laying of new paving units.

8.1.2. Finish

Levels must match exactly flush, without trip hazard, between different materials/surfaces. Surfaces must be designed to drain. Finished to be smooth and even with no areas that water can pool. Where pavers meet the existing sea wall and concrete modular seats fill the joint with Ableflex joint filler.

8.1.3. Completion

Any damaged adjacent surfaces shall be re-instated.

8.2. CONCRETE PAVING UNITS

8.2.1. Scope

There are two types of new pavers to be laid; 500 x 500 exposed aggregate concrete pavers and 300 x 300 Hydroston permeable pavers. New concrete paving units are to be supplied and laid to the extent shown on the drawings. Pavers are to be laid in a stretch bond pattern, as to match existing, on a mortar/sand setting bed as detailed in the drawings.

8.3. NON PERMEABLE CONCRETE PAVING UNITS

Supply new concrete unit pavers as to match the existing paver size and material, base colour, aggregate size and colour and finish. Provide a sample to and obtain approval from the Superintendent prior to ordering.

500 X 500 COL STONE SS5
CODE: 04.311S5
Ensure that these pavers have a concrete strength rating of 50 mpa.

Suggested Supplier or similar of new paving units:
SVC Concrete Products
38 Jappady Street, Mordialloc, Vic, 3195
03 9580 6644

8.4. HYDROSTON PERMEABLE PAVING

Hydroston paving units are to laid as indicated on the drawings:

Hydroston Pavers
50 x 300 x 300 H50 Flag
Colour: Charcoal

Suggested Supplier or similar of new paving units:
HydroCon Australasia Pty Ltd
53 Balfour Street, Chippendale NSW 2008
Phone: 02 8303 2423

Pavers are to be laid in a band two (2) pavers wide, as shown on the drawings.

Pavers are to be laid in a stretch bond pattern, on a 30mm compacted depth bedding course of 5mm single size crushed no fines aggregate. Bedding course is to be laid on a 100mm compacted depth of 20mm aggregate. Joints are to be approximately 4mm wide with 1-3mm crushed aggregate containing low fines broomed into the joints.

Where Hydroston pavers meet the existing sea wall, fill joint minimum 10mm with Ableflex joint filler.

Note: Where the existing pavers meet the new pavers please space new pavers accordingly to provide as best finish to existing. Superintendent is to be consulted prior to installation.

8.4.1. Storage

Store pavers in a secure place as to prevent theft or damage.

8.5. REINSTATEMENT OF EXISTING CONCRETE PAVING UNITS

8.5.1. Scope

Existing pavers to be reinstated are to be laid on the north east side of the design as to match the existing pavers along the pedestrian path.

8.5.2. Materials and Components

Use existing concrete unit pavers as stockpiled during demolition.

Pavers are to be laid at the appropriate angle (to match the existing pavers) on a mortar/sand setting bed as detailed in the drawings.

Note: If the existing mortar setting bed is at a different height to that specified in the drawings, use the required amount of mortar to achieve a flush finish.

9. TIMBER DECKING

9.1. SCOPE

This section includes but is not restricted to construction of the following:
• Constructing two timber decks battened off concrete slabs

9.1.1. Referenced standards

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

9.1.2. 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

9.1.3. 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

9.2. CONCRETE SLAB

After excavating, lay a 200mm layer of crush rock, compacted. The concrete slab will be of a compressive strength of 32 mpa with SL82 reinforcement mesh.

9.2.1. Placement of reinforcement mesh in slab

As the joists will be bolted into the slab, ensure that the mesh is placed so that the mesh and bolts do not touch. The mesh will be centrally located.

9.2.2. Drain holes in slab

Place 50mm PVC pipe, as shown on the drawings, in the centre of the selected squares of the mesh. Pour the concrete around the pipe. Once the concrete has cured, saw off the remaining pipe to achieve a flush finish with the slab surface. Backfill pipe with beach sand.

9.3. TIMBER WORK

9.3.1. General

9.3.1.1. Workmanship

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 decking, 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 on Concrete footings in this Specification.

Unless otherwise specified the Contractor is to use their own system of framing for the timberworks in accordance with the current Australian Standards as mentioned above

9.3.1.2. Fixing and fasteners for timber work

Important Note
All timberwork to be pre-drilled and screwed rather than nailed. Except for situations specifically shown on the Drawings, no nails to be used unless approved by the Superintendent.

Ensure screws have appropriate bite and do not protrude through the other side of the timber.

All larger members shall be bolted or coach screwed together. Marine grade 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.

9.3.1.3. 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%.

9.3.1.4. Durability

Joists and other timber used underground or within contact with the ground shall be of durability class one and graded H6 for a marine environment. Treated timber for use underground or in contact with the ground shall be specifically treated for in ground use.

9.3.2. Joists

Class 1, H6 treated pine, 50 x 100 joists are to be fastened at 600 centres to the slab using M6 Dynabolts or similar. These bolts must be long enough to achieve a bite into the concrete of 30mm.

Do not position the joists over the weep holes.

9.4. DECKING AND EDGE BOARDS

Decking to be 45mm x 140mm durability class 2 Spotted Gum.

All timber is to be pre drilled off site or in an appropriate enclosure to prevent the spread of saw dust.

All decking and edge boards are to have a sawn finish to top surface, all edges are to be rounded/ eased/ chamfered. All decking members to be butt jointed after edges have been rounded (this allows for some shrinkage – maintaining gaps between members under 5mm – to prevent potential finger entrapments). All posts, rails and beams to be fine sawn, with edges eased (rounded) to remove sharp corners and ensure a splinter-free surface.

Fasten the decking boards to the joists using 10g x 75mm, grade 316, stainless steel bugle headed decking screws or similar. Ensure that boards finish flush with each other and that no screws are sitting above the face of the timber.

Edge boards are to 50 x 35 durability class 2 Spotted Gum. Fix the edge boards to the joist and concert slab using M6 Dynabolts. Ensure these are placed under the line of decking to achieve a neat finish.

Use M6 Dynabolts or similar to fix the edge boards to the concrete slab and joists.

Once installed coat decking and edge boards with a non coloured timber oil such as linseed oil.

10. RETAINING WALL CONSTRUCTION

10.1. SCOPE

Construction of a new retaining wall on top of the existing concrete sea wall.

10.2. BLUESTONE RETAINING WALL

10.2.1. General

Construct a bluestone retaining wall using bluestones supplied by the Port Phillip City Council and fascia bluestones supplied by the contractor. Refer to the drawings.

10.2.2. Bluestones from Port Phillip City Council

The large bluestones will be supplied by the Port Phillip City Council. The bluestones will require sorting and delivery to the site by the contractor.

Arrangement of a date to sort the bluestone will be organised with Mr. Michael Fulton, Civil Works Officer from Infrastructure Maintenance Services on 9209 6311 between the hours of 8am and 3pm. A minimum of 3 days notice is required.

Care is to be taken at the Port Melbourne depot site when sorting the bluestones. Bluestones that are to be used are approximately 900mm and longer. Do not use any stones that have been rounded at the top.

Arrange a site visit with the superintendent prior to sorting to look at the specific bluestones that are required. Approval of stones must be obtained from the Superintendent prior to delivery to the site.

10.2.3. Bluestones Fascia Stone

The bluestone fascia stone will be supplied by the contactor. The panel is to match the finish of the bluestone pitchers. The panel must a minimum of 25mm thick to avoid chipping or breaking.

10.2.4. Construction

Approval must be obtained from the Superintendent to show an example of how the wall will be constructed.

Prior to constructing the wall scabble the top of the existing sea wall using a small electric jackhammer. Follow this by liberally painting a commercial adhesive such as boncrete onto the existing concrete sea wall and onto the stones themselves.

Mortar (1:1:6) is to be grey colour, as to match the existing foreshore bluestone retaining walls. An adhesive, such as boncrete, is to be added to the mortar.

Facia stones are to be fixed to sea wall using Grade 316, M12 allthread, epoxy set minimum 75mm into wall. Minimum 2 per stone or at 600 centres.

The height of the wall must not exceed 540mm, as this is the standard height of the existing foreshore bluestone wall.

All existing weep holes in the retaining wall will be maintained.

11. FITNESS STATIONS "EXERSITE"

11.1. SCOPE

This section includes but is not restricted to construction of the following:
• Installation of six fitness stations
• 150mm of triple washed beach sand in the fitness area

11.2. Setout

Obtain approval from the Superintendent prior to installing the fitness equipment.

11.3. INSTALLATION OF FITNESS TRAILS EXERSITE FITNESS STATIONS

11.3.1. Scope

Install six fitness stations following details in the drawings, dimensions on set out plan for placement together with the manufacturers guide.

This item has been pre purchased by council- Please allow a 6-8 week lead time. The manufacturer is to deliver them to the site.

Please contact
Neil Grey
Fitness Trails Pty Ltd.
(02) 6290 2437
(0412) 632 951

11.3.2. Tops of footings under fitness equipment

Tops of concrete footings shall be no less than 200mm below the level of the sand (i.e. the ground level under the mulch).
Depths of footings for fitness 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.

11.3.3. Storage

Store fitness equipment in a secure place, to prevent damage and or theft.

11.4. TRIPLE WASHED SAND UNDER FITNESS STATIONS

11.4.1. Scope

Install triple washed sand. Provide a sample to the Superintendent for approval prior to ordering.

11.4.2. Materials and Components

Lay sand on a compacted subgrade base.

12. LIGHTING

12.1. SCOPE

This section includes but is not restricted to construction of the following:
• Installation of 18 in ground lights with DALI (Digital Addressable Lighting Interface) boxes.

12.1.1. Set out

Prior to installation arrange a meeting on site with lighting supplier, Phillipe Lesage 0408 330 878 or 03 98941749 and the Superintendent.

Obtain approval from the superintendent for set out prior to installation.

12.1.2. Materials and Components

Locate and install in ground lighting as indicated on the Drawings. Assemble and install 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.

Name: RGB Onlight Inground Light

Product code: ONLIGHT201535300

This item has been pre purchased by council- Please allow a 12-14 week lead time. This item comes with a DALI (Digital Addressable Lighting Interface) box; please ensure this arrives with the lights. The lighting supplier will deliver these items to the site.

Please contact:
Phillipe Lesage
Versalux Lighting Pty Ltd
1 Apollo Court, Blackburn Vic 3130
Mobile: 0408 33 08 78
Phone: 03 9894 1749
Fax: 03 9894 1754

12.1.3. Storage

Store lights in a secure place prior to installation.

13. SOFTSCAPING

13.1. SCOPE

This section includes but is not restricted to construction of the following:
• Garden bed cultivation, topsoiling and pre planting preparation.
• Rain garden with several filtered layers.
• Topdressing and grassing.
• Supply and planting of shrubs and grasses.
• Supply and installation of instant turf.
• Soft Landscape Maintenance

13.2. PLANTING SCHEDULE

SPECIES	COMMON NAME	POT SIZE	QUANTITY	CENTRE SPACINGS
Plants				
Austrostipa stipoides	Spear grass	140mm	384	400 mm
Ficinia nodosa	Knobby club rush	140mm	318	400 mm
Lepidosperma gladiatum	Coastal sword	140mm	177	400 mm
Trees				
Banksia integrifolia	Coastal Banksia	300mm	23	800 mm
Grass				
Pennisetum clandestinum	Kikuyu grass	N/A- in rolls	43 M. SQ.	N/A

13.3. PLANT AND TREE STOCK

Supply plants which:

• Are sourced from a known local provenance- sand belt area.

• Have large healthy root systems, with no evidence of root curl, restriction or damage;

• Are vigorous, well established, free from disease and pests, of good form consistent with the species or variety; and

• 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.

13.3.1. Trees

Ensure that all trees have a good calliper size and good foliage. Trees are to be installed as per the drawings, refer to the detail.

13.3.2. Plant containers

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

13.4. RAIN GARDEN (GARDEN BED 1)

13.4.1. Scope

Construction of a rain garden with filtration layers as located on the drawings. The rain garden will use the run off from the shower and the run off from the toilet block. The toilet block has two rain tanks which when at capacity divert the water to a pipe which flows to a soak well located in the rain garden. Refer to the drawings for the location of the soak well.

13.4.2. Locate soak well

Prior to works locate the soak well and associated pipe to redirect, if required, water towards the rain garden.

13.4.3. Materials and Components

Mulch layer
The top layer of the filter should be covered with layer of screened no fines stone aggregate mulch. 100% of the particles should be in the size range 10-20mm. Mulch shall be raked even and kept clear of plant stems to avoid collar rot. The finish level is critical for extended detention storage volume. A sample is to be provided to the superintendent for approval prior to installation. Match the colour of this mulch to that of the other garden beds.

Filter layer
The filter material shall preferably be a “washed sand” of siliceous or calcareous origin, one that has been mined and processed. Natural soils or topsoils are not usually suitable. Use ‘Burdettes turf 200’ or similar and amend to suit the following properties:

1. Saturated hydraulic conductivity (hc) - filter media shall have a hc in the range of 150 - 250mm/h. This critical element is to be demonstrated through lab testing using astm f1815-06.

2. Particle size distribution (psd) - composition (w/w) requirements:

DESCRIPTION	PROPORTION	GRADING
Clay & Silt	< 3%	<0.05 MM
Very Fine Sand	5 - 30%	0.05 - 0.15 MM
Fine Sand	10 - 60%	0.15 - 0.25 MM
Medium to coarse sand	40 - 60%	0.25 - 1.0 MM
Coarse Sand	7 - 10%	1.0 - 2.0 MM
Fine Gravel	< 3%	2.0 - 3.4 MM

3. Ph - filter media is to have a ph 6.2-6.8 before delivery to site, add dolomite as required.

4. electrical conductivity (ec) - filter media ec to be <1.2 ds/m

Upper filter media

Upper 150mm of filter media layer to be mixed with following to support plant growth:
- Superphosphate at 300 grams/cubic metre
- Potassium nitrate 300 grams/cubic metre
- Trace element mix (micromax or equivalent approved) 300 grams/cubic metre

Testing requirements

The following tests are to be undertaken on all filter media prior to its delivery:
- saturated hydraulic conductivity (hc) in accordance with astm f1815-06.
- Particle size distribution (psd) in accordance with as1141.11

Transition layer
A transition layer is required when the drainage layer is fine gravel. It is recommended when the drainage layer is coarse sand. The transition layer should be a sand/coarse sand material, generally applied in a 100mm layer. A suitable product is washed a3 filter sand (vic roads) with 90% particles retained above 0.25mm.

Drainage layer

The drainage layer is normally between 100 - 150mm thick. Suitable materials include coarse sand (coarser than transition layer) or fine gravel in the range 4mm - 7mm. scoria is not an acceptable material for this application.

Acceptable particle size distribution:

PARTICLE SIZE in MM	% RETAINED
Greater than 7.0	0
4.0 - 7.0	Greater than 70
2.0 - 4.0	Less than 20
Less than 2.0	0

Construction hold points

The contractor is to seek approval of the Superintendent before proceeding with the construction at the following stages of implementation

- provision of samples and specified test results for all materials (mulch, filter, transition and drainage media) prior to delivery to site and installation
- Connection to stormwater system and placement of drainage layer
- Installation of filter media before placement of mulch
- Completion of rain garden including plants and mulching

13.4.4. Grading

Also refer to Section 4 Earthworks and grading.

Ensure that the surface of the rain garden is 50mm lower than the pavement surrounding it.

13.5. GARDEN BEDS (GARDEN BED 2-7)

13.5.1. Planting Spacings

Plant 6 plants per square metre at 400mm centres, plant trees at 800mm centres. Refer to the drawings and planting schedule.

13.5.2. 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.
Apply a handful of water crystals in the excavated hole before planting the plant.
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 moulding topsoil above finished grade.

13.5.3. Mulching

Garden beds shall be mulched with 50mm of pea gravel mulch- colour beige/white. Please provide a sample to the Superintendent for approval.

13.5.4. 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 after 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 to 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.

13.6. INSTANT TURF

13.6.1. Scope

Instant turf is to be laid as located on the plan. Refer to the drawings for location and size.

13.6.2. Lawn

Instant turf shall be kikuyu from a reputable supplier. Install and maintain according to the supplier’s recommendations.

13.6.3. Preparation

The designated area shall be prepared as follows unless otherwise instructed by the supplier and approved by the Superintendent.

13.6.4. Grading and trimming

The Contractor shall remove weeds, mulch and plant material from existing site. The excavation shall be finished off with an even surface, and thoroughly consolidated until a uniform subgrade has been obtained throughout the entire area. Depressions, which develop during rolling, shall be filled with sound material and consolidated. All extraneous material shall be removed from the existing sub-soil. The existing soil shall be graded and trimmed to the extent necessary to conform to the finished levels,
grades and cross sections indicated. Soil must be graded to ensure positive drainage

13.6.5. Topsoil

Approved on-site topsoil shall be used. On-site topsoil must be free from rubble, clods
of subsoil, stone and other extraneous material and its use subject to the approval of the Superintendent.

100mm minimum of topsoil shall be laid and raked smoothly and evenly without depressions prior to seeding. Spread evenly over the prepared surface a prepared mix of approved lawn starter fertilizer and trace elements in accordance with the manufacturer's recommendations. Apply and rake the fertilizer into the bed to a depth of 50mm at the time of sprigging.

13.6.6. Sprigging

Apply grass sprigs at 15% Top dress sprigs with sand. Roll immediately after sprigging with a roller weighing not more than 90kg/m of width.

13.6.7. Protection

Any grassed areas disturbed during construction outside the Extent of Works, shall be
reinstated at no extra cost to the Principal.
Protect the newly grassed areas against trespass and traffic until the grass is well established. Allow for erection of temporary fencing consisting of stakes securely fixed in ground with domed plastic caps and two strands of galvanised wire strained to tension where necessary.

13.6.8. Temporary fencing.

The extent of fencing should be the minimum necessary to protect the grass or as directed by the Superintendent. Temporary fencing should consist of steel fence panels. The contractor is to ensure the site is safe for use by the public.

13.6.9. Watering

Watering shall occur 3 times a week for 6 weeks.

14. FURNITURE

14.1. PORT PHILLIP CITY COUNCIL PICNIC TABLES

Two (2) x 2m picnic sets and One (1) x 3m picnic set to be supplied by the Port Phillip City Council.

Note: this item requires some assembly. Please use marine grade stainless steel screws. Assemble according to manufacturer's instructions.

A custom made tool is required to install the picnic tables. Please arrange with Mike Fulton to borrow this tool. Mike Fulton, Civil Works Officer from Infrastructure Maintenance Services on 9209 6311 between the hours of 8am and 3pm. A minimum of 24 hours notice is required.

Locate and install as indicated on the Drawings.

These items have been pre-purchased by council. These items are to be picked up from the Port Phillip City Council Council depot. A time for pick up can be arranged with Mike Fulton, Civil Works Officer from Infrastructure Maintenance Services on 9209 6311 between the hours of 8am and 3pm. A minimum of 24 hours notice is required.

14.1.1. Finishing

Sand back if necessary, and coat with a timber stain (with protective qualities) to match the spotted gum decking timber.

NOTE: at no time are these tables to be coated with paint.

14.2. PORT PHILLIP CITY COUNCIL BINS

Existing Port Phillip City Council bins to be reused on site.

Locate and install as indicated on the Drawings. Install high enough so doors on bins open.

Note: Install one bin per concrete pad; remaining bins will be installed by others at a later date.

14.3. PORT PHILLIP CITY COUNCIL BICYCLE HOOPS

Existing Port Phillip City Council bike hoops to be reused on site.

Locate and install as indicated on the drawings.

14.4. BEACH SHOWER

Locate and install beach shower as indicated on the Drawings. Assemble according to manufacturer's instructions.

The installation of all plumbing items shall be performed by a licensed plumber. All fountains must be supplied with a plumber's certificate upon completion.

Name: Round 2000mm x 200mm with buried mount, push button tapware with timed release, two foot outlets and one shower rose at 1900mm

Product Code: SSSH01

This item has been pre purchased- Please allow a 6-8 week lead time.

Please contact
Dallas Barker
Acute Commercial P/L
2-8 Gilchrist Rd Stawell Victoria 3380 Australia
PH+61 3 53585522
FAX+61 3 53585422
DIRECT 0439029322

14.5. AQUAFIL DRINKING FOUNTAIN

Locate and install Aquafil drinking fountain as indicated on the Drawings. Assemble according to manufacturer's instructions.

The installation of all plumbing items shall be performed by a licensed plumber. All fountains must be supplied with a plumber's certificate upon completion.

Name: Aquafil drinking fountain dispenser unit

This item has been pre purchased- Please allow a 6-8 week lead time.

Please contact

Dallas Barker
Acute Commercial P/L
2-8 Gilchrist Rd Stawell Victoria 3380 Australia
PH+61 3 53585522
FAX+61 3 53585422
DIRECT 0439029322

15. MAINTENANCE

15.1. 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 site at all times until then in a clean and tidy condition.

15.1.1. Records

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

15.1.2. Grass/Lawn Maintenance

Adequate Watering must be provided to ensure successful establishment in the critical
first weeks and to ensure a vigorous healthy sward of grass is achieved.
A management plan should be prepared & followed by the Contractor (as per Seasonal Requirements) for watering, post-fertilising weed eradication and mowing.

15.2. EXECUTION

Maintenance tasks include the following:
• Regular site visits to monitor and rectify defects in planting, turf and litter.
• Remove litter on a regular basis
• Regular mowing and trimming of edges to maintain a grass height of between 40 and 75mm.
• Removal of weeds
• Maintenance of mulch surfaces, including topping up of garden bed mulch to design levels
• Seasonal spraying to maintain plants pest free, according to manufacturer's instructions
• Watering to maintain healthy growth
• Fertilising of grass.
• Replacement of dead areas of grass/lawn.
• Replacement at no cost of damaged or failed plants.
• Cleaning up of grounds and care of protective fences.
• Other works as necessary to maintain the works in the best possible condition.
• Urgent maintenance works as directed by the Superintendent.
• Provision of instruction as to the proper operation and maintenance of all aspects of the project, to ongoing maintenance contractor to ensure seamless hand over with no detriment of the quality of the landscape.

16. DRAWINGS

Drawings received as separate attachments (Please refer to Section 4 of this tender document):

10-027-01 Existing Conditions and demolition

10-027-02 Surface Treatment Plan

10-027-03 Setout plan 1 of 3

10-027-04 Setout plan 2 of 3

10-027-05 Setout plan 3 of 3

10-027-06 Detail key plan

10-027-07 Planting plan layout

10-027-08 Planting plan 1 of 4

10-027-09 Planting plan 2 of 4

10-027-10 Planting plan 3 of 4

10-027-11 Planting plan 4 of 4

10-027-12 Planting details

10-027-13 Hardscape details

10-027-14 Retaining wall-Bluestone

10-027-15 Seating units arrangement

10-027-16 Seating Details

10-027-17 Lighting Plan

10-027-18 Deck Details 1 of 2

10-027-19 Deck Details 2 of 2- picnic sets

10-027-20 Furniture Details 1 of 2

10-027-21 Furniture Details 2 of 2

10-027-22 Exercise Stations 1 of 3

10-027-23 Exercise Stations 2 of 3