SECTION 740 - SOFT LANDSCAPE WORKS

740.01 GARDEN BED PREPARATION

The contractor is to form all sub grades to the levels required below finished levels as determined by surrounding surfaces. An initial 75mm layer of approved topsoil is to be cultivated into the prepared site soil; then a final 75mm layer of approved topsoil installed. Notify the Superintendent when the sub grade has been prepared and allow for joint inspection. A follow up inspection is required following cultivation.

740.02 TOPSOIL

Topsoil is to be imported topsoil conforming with AS 4419.

Depths are as follows:
Garden bed areas to a minimum consolidated depth of 150mm.
Grassed areas to a minimum consolidated depth of 100mm.

The contractor is to provide a soil test for both site and imported soil to confirm which drainage rates, nutrient, ph., contaminants and noxious weeds. The tests are to be provided to the contractor a minimum 28 days prior to soil placement, and the necessary amelioration, to comply with AS 4419 carried out.

As a guide, imported soils are to be sandy loam, have a neutral pH 6.0-6.5 and be free of noxious weeds and/or heavy infestations of weeds such as the flat leafed varieties, Water Couch, Common Paspalum and Oxalis species. Imported soil is to also be free from Cinnamon Fungus and is not to contain any trade wastes or garbage of any kind or asbestos. The maximum stone size acceptable is 20mm but the soil will not be accepted if it contains large quantities of such stones.

740.03 PLANTING

All trees, shrubs, plants and sources of supply are to be subject to inspection and approval of the Superintendent prior to being installed. All plants are to be true to species and the best of their respective kinds. They are to have a well-developed root system and be free of disease. Care is to be taken to ensure that the roots are not exposed to drying influences of sun, wind or frost. All stock is to be set plumb and placed to ensure a normal relationship of the crown to soil surfaces. Place stock in the centre of the hole. The removal from the container and positioning of the plant is to be done with the minimum of disturbance to the roots, however some teasing of roots maybe required depending on root ball condition. All stock is to be planted without root disturbance and the hole backfilled with excavated soil. Soil is to be firmed around the roots to avoid air pockets. A depression is to be made at the base of each plant to act as a water basin.

All stock is to be thoroughly watered immediately after planting. Required amounts are 50 litres per 300mm pot or larger including all trees, 10 litres per 140mm pot or tubestock. The plants are to be kept moist at all times during the contract period. Any stock that becomes damaged, dies or is not found to be in a healthy condition during the contract period are to be replaced. Stock replacements are to be of the same kind as specified in the itemised plant list. All stock replacements are to be planted as specified at the Contractor's expense and are to be kept free from disease at all times.

Retain bags or other record of fertiliser used on site for inspection by the Superintendent. Also retain naming/label tags from each species for inspection by the superintendent.

740.04 MULCH

Install 75mm shredded multibark mulch to AS 4454 to finish proud of all adjoining surfaces and design levels to allow for settlement unless otherwise specified. Final settled levels should be flush with footpaths and 50mm below top of kerb.

Mulch is to display neat and defined edges.

740.05 GRASS/REINSTATEMENT

Grassed areas adjacent to the proposed works are to be re-seeded / made good as required. Seed mix to be confirmed on site and match existing.

Topsoil (refer to specification above) is to be brought to a fine tilth before hydromulching commences. The topsoil surface shall be free of weeds, large stones and other debris. Topsoil shall be inspected by the Superintendent prior to sprigging.

All areas to be hydromulched with approved grass seed mix to achieve a dense grass. All seeded areas to have an even cover and be free from any bare patches.

The contractor must submit a maintenance schedule/regime for the duration of the works (including any maintenance or defect liability periods) to support the establishment of grass to a 'second cut', including but not limited to mowing, watering and weeding of all nature strip and landscape areas included or affected by the works.

HP: CONTACTRATOR TO CONFIRM SEED MIX WITH SEUPERINTENDENT PRIOR TO COMMENCEMENT.

The Contractor shall protect newly sown areas against trespass and traffic until grass is well established. The Contractor shall allow for making over and re-grassing to all areas where grass fails to establish or to damaged areas within the maintenance period or the defects liability period, whichever is the greater.

Preparation shall include cultivation, clean up and final trimming of fill to design levels. The Superintendent's representative is to inspect all fill areas prior to placement of topsoil. Place topsoil to required depths (100mm min.) and trim to ensure a flat mowable surface and bring to a fine tilth to receive hydromulch. Ensure all design levels and grades are achieved and that no areas of grass will pond in wet weather. Seed (hydromulch) any lawn areas damaged by or adjacent to new construction works area with the appropriate seed and with Lawn Starter to manufacturer's specification and water in well.

The first cut shall be made when the lawn has reached a height of 80mm and any subsequent mowing shall be carried out as directed by the Superintendent's representative and at intervals to maintain a standard length of grass not less than 40mm and not more than 80mm in height at any time during the period that the lawn is maintained.

740.06 RECOMMENDED SEEDING PROCEDURE

Prior to grassing, all soil preparation work shall be achieved in accordance with approved project specification clauses. The following information is provided as a guide only to assist the Contractor in achieving a successful, acceptable result.

To a properly prepared surface, spread approved lawn seed starter fertiliser at a rate of 2.8kg per $100m^2$ evenly over the prepared seedbed and incorporated to a depth of 50mm, leaving the surface a smooth even grade. The fertiliser may be applied at the same time as seeding; otherwise the fertiliser shall be applied not more than 48 hours before the seed is to be sown.

The seed shall be sown on a calm day, applied in two equal sowings in transverse directions by an efficient machine, lightly raked in to cover the seed.

The seed bed shall be rolled immediately after sowing with an approved roller, weighing not more than 95kg per meter of width for clay soils (or any soils having a tendency to pack) and not more than 315kg per meter of width for sandy or light soils.

The seedbed shall be watered immediately after sowing and then as necessary to keep it moist until germination and to produce a satisfactory sward.

The Contractor shall protect the newly sown areas against trespass and traffic until the grass is well established.

The Contractor shall allow for raking over and reseeding all areas where the grass seed fails to germinate within the maintenance period or the defects liability period, whichever is greater.

Four (4) weeks after germination, 2.50kg per $100m^2$ of approved fertilizer shall be applied. The fertilizer shall not be applied to wet grass and shall be evenly spread over the entire grass area. Water in thoroughly after application.

740.07 RECOMMENDED HYDROMULCH PROCEDURE

(a) Equipment

Hydraulic equipment used for the application of the slurry of prepared cellulose fibre shall be of the "Finn Super Hydro-seeder" type, or equivalent. This equipment shall have a built-in agitation system and operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing not less than 16 kilos of fibre mulch, plus a combined total of 3.5 kilos fertiliser solids for each 400 litres of water. The slurry distribution lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic spray nozzles, which will provide a continuous non-fluctuating discharge. The slurry tank shall have a minimum capacity of 6,825 litres and shall be mounted on a traveling unit, either self-propelled or drawn by a separate unit, which will place the slurry tank and spray nozzles within sufficient proximity to the areas being treated.

(b) Materials

(i) Fibre mulch: Provide Eco Fibre Hydro-mulch as manufactured by Can For, or approved equivalent, composed of cellulose fibre, and containing no germination or growth-inhibiting factors. Ensure a constant texture which disperses evenly and remains suspended in agitated water. Provide with a temporary green dye and the following percentage property analyses:

- moisture content: plus or minus 3 o.d. basis
- organic matter: 99.2 (plus or minus 0.8)
- ash content: 0.8 (plus or minus 0.2)
- pH: 4.8 (plus or minus 0.5)
- water-holding capacity: 1150 minimum (gms of water per 100 gms of fibre)

(ii) Soil binder: Terra Control applied at 200 kilos per hectare, or approved equal.
(iii) Fertiliser: Per recommendations of soil testing report.
(iv) Seed: as specified

Seed shall be fresh, clean, new certified crop seed composed of the variety and mixed in the proportions specified in all areas shown on the plan as Lawn.

(c) Slurry Preparation

Prepare the slurry at the project site by first adding water to the tank when the engine is at half-throttle. When water level has reached height of agitator shaft, provide full recirculation, then add seed, fertiliser and soil binder into the mulch when the tank is 2/3 to 3/4 full. Commence spraying immediately when tank is full.

Application Rates:

Fibre -	1500 kilos per hectare.
Binder -	100 kilos per hectare.
Fertiliser -	150 kilos per hectare.
Seed -	350 kilos per hectare.

(d) Application

Hydro-mulching shall not commence until all trees which occur in hydroseed areas have been planted, and final grades have been approved by the Superintendent.

Apply sufficient water to seeding areas to moisten upper layers of soil prior to application of slurry. Do not allow the surface to be super saturated, or excessively dry prior to seeding. Verify that residual moisture lies within 25mm of the soil surface.

Apply the slurry spray with a visually uniform coat, using the green color of the mulch as a guide.

Apply in a downward drilling motion with a fan stream nozzle, so the slurry will penetrate the surface as to drill and mix the slurry components in the soil, thus ensuring maximum impregnation and coverage, allowing the fibres to build on each other until a good coat is achieved and the material is spread at equal rates.

Do not leave the hydroseed slurry in tank for more than 2 hours. Add 50% more of the originally specified seed mix to any slurry mix which has not been applied within the 2 hours after mixing. Add 75% more of the original seed mix to any slurry mixture which has not been applied 8 hours after mixing. Remove and dispose of offsite all mixture over 8 hours old.

Prevent overspray of slurry onto hardscape areas including pavement, fences, buildings, walls etc. Any overspray of mulch material on pavements, plants, light fittings, tree stakes, furniture etc. shall be immediately cleaned off by the hydroseed sub-contractor to the satisfaction of the superintendent.

The seedbed shall be watered as necessary after sowing to keep it moist until germination, and to produce a satisfactory sward.

The Contractor shall protect the newly sown areas against trespass and traffic until the grass is well established.

The Contractor shall allow for raking over and reseeding all areas where the grass seed fails to germinate within the maintenance period or the defects liability period, whichever is greater.

Four (4) weeks after germination, 2.50kg per 100 square metres of approved fertiliser shall be applied. The fertiliser shall not be applied to wet grass and shall be evenly spread over the entire grass area. Water in thoroughly after application.

740.08 ESTABLISHMENT MAINTENANCE

(a) Requirements

Establishment includes the care of the landscaping by accepted horticultural practices, watering, fertilizing, cultivation, aerating, weeding, pest and disease control, staking, pruning, replacement, re-planting, and keeping the site neat and tidy. All planting areas are to show healthy vigorous growth and be free of weeds.

Defects to the landscaping during the maintenance and establishment period are to be rectified immediately. Mulched surfaces are to be kept cleaned and tidy, and reinstated or topped up where required. Soil erosion or subsidence of imported topsoil is to be made good. Report to the Superintendent any subsidence or damage by others.

(b) Grass Nature strips

The first cut and subsequent mowing shall be carried out at intervals to maintain the standard of grass within 50mm to 75mm height. At no time should more than 1/3 of the leaf be removed.

Inspect grass on a weekly basis and if weeds become apparent, remove weed growth by cultivation. Selective herbicides may be used at the Contractor’s discretion. Ensure that weed spraying is carried out on a calm day and protect all trees, shrubs and ground covers from spray drift damage.

(c) Watering

New grass plantings are to receive regular watering to allow for establishment and healthy growth.

Contractor is to seek confirmation from the superintendent if the contractor feels it unnecessary. In the case the contractor is to provide a rate in order to credit the client.

(d) Weeding

Carry out weeding not less than fortnightly, unless otherwise directed. Weeding is to be undertaken by hand-weeding and cultivation, unless directed. Notify Superintendent before undertaking any spraying.

740.09 ESTABLISHMENT MAINTENANCE

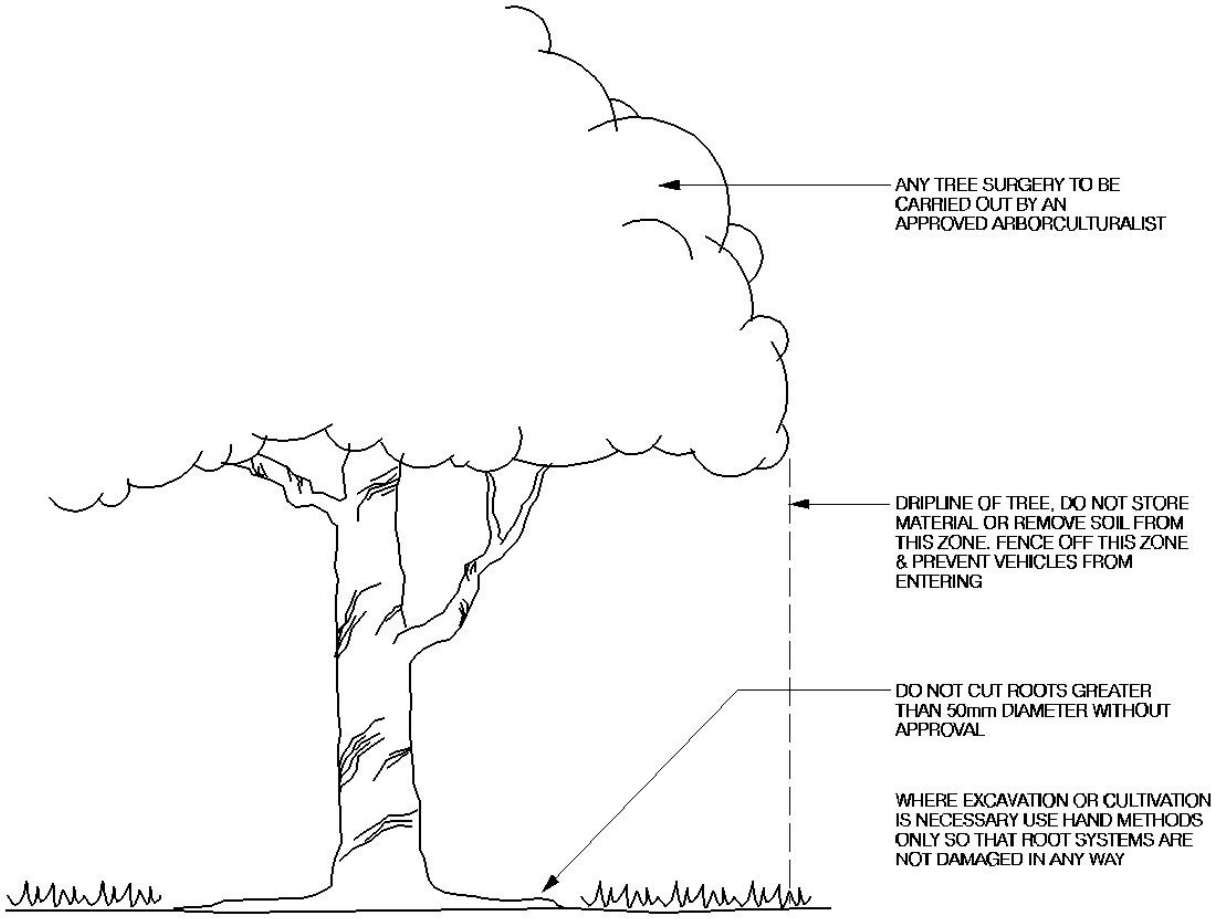
On expiration of the establishment period, arrange a joint inspection with the Superintendent. All work is to be completed and all defects rectified before the Final Certificate will be issued by the Superintendent.

740.10 EXISTING TREE PROTECTION

Existing trees to be retained shall be protected on construction sites as follows, and in accordance with WCC Street Tree Policy (March 2003):

- Erect a tree protection fence at the dripline of the tree (the root zone) before work commences. The fence should consist of a 1.2m – 1.5m chain mesh fence. No access, stockpiling of materials, or storage of machinery to be allowed inside the tree protection fence.
- In the case that temporary vehicular movement is required across the tree root zone, heavy plywood or metal sheets laid over course bark mulch can be used for short-term protection. These should be removed as soon as movement is complete.
- Where services are to be implemented through the root zone of a tree to be retained, their alignment should be bored rather than placed in open trenches, to ensure that root severance does not occur. New services should be located in a single trench or bore hole.
- Root excavation required should be carried out by hand digging or the use of an air knife. Root cutting should be done by hand, not back-hoe equipment, to avoid tearing of roots.
- All pruning works to be carried out by a qualified arborist. **Nominated arborist and proof of qualification to be forwarded to Council's superintendent.**
- All works carried out within the tree root zone to be supervised by a qualified arborist. **Nominated arborist and proof of qualification to be forwarded to Council's superintendent.**
- No signs, fences or other items to be attached to the tree at any time.

Figure 740.081 – Tree Protection Zone



740.09 WEED ERADICATION

A weed management plan shall be submitted prior to commencement of landscape works and followed and implemented throughout the landscape works period. The Weed Management Plan is to incorporate:

- weed management prior to landscape works.
- Weed management during landscape works including on-site machinery,
- Weed management at the completion of landscape works with suggested ongoing management practices.

A weed eradication program shall be implemented to all areas scheduled for lawn and planting as follows:

Following topsoil placement, fine grading, and the installation of a fully functioning irrigation system (where applicable), establish a regular watering program that will encourage germination and growth of weeds over a two to three week period.

HP: PRIOR TO APPLICATION, OBTAIN CERTIFICATION OF APPLICATION, AND HERBICIDE PRODUCT PROPOSED FOR USE.

When sufficient weed growth has occurred, the irrigation program shall be terminated, and the Subcontractor shall apply a post-emergent, broad-spectrum contact weed killer in strict accordance to manufacturer's directions.

The Subcontractor shall wait an additional one to three weeks, depending on extent of weed desiccation, to remove residual weed foliage and roots prior to the planting and seeding operation.

Herbicides

Only herbicide registered for use in Victoria may be used.

All herbicides and pesticides are to be used in strict accordance with any and all local authority requirements or restrictions, and with the manufacturer's instructions at the recommended rates. Herbicides may only be applied by a qualified contractor, certified specifically for herbicide applications.

740.10 SHRUB AND GROUNDCOVER PLANTING TECHNIQUES/PROCEDURES

Excavate plant pits in accordance with the Wyndham standards tree and shrub details. Excess excavated soil shall be evenly spread throughout planting areas by the Contractor.

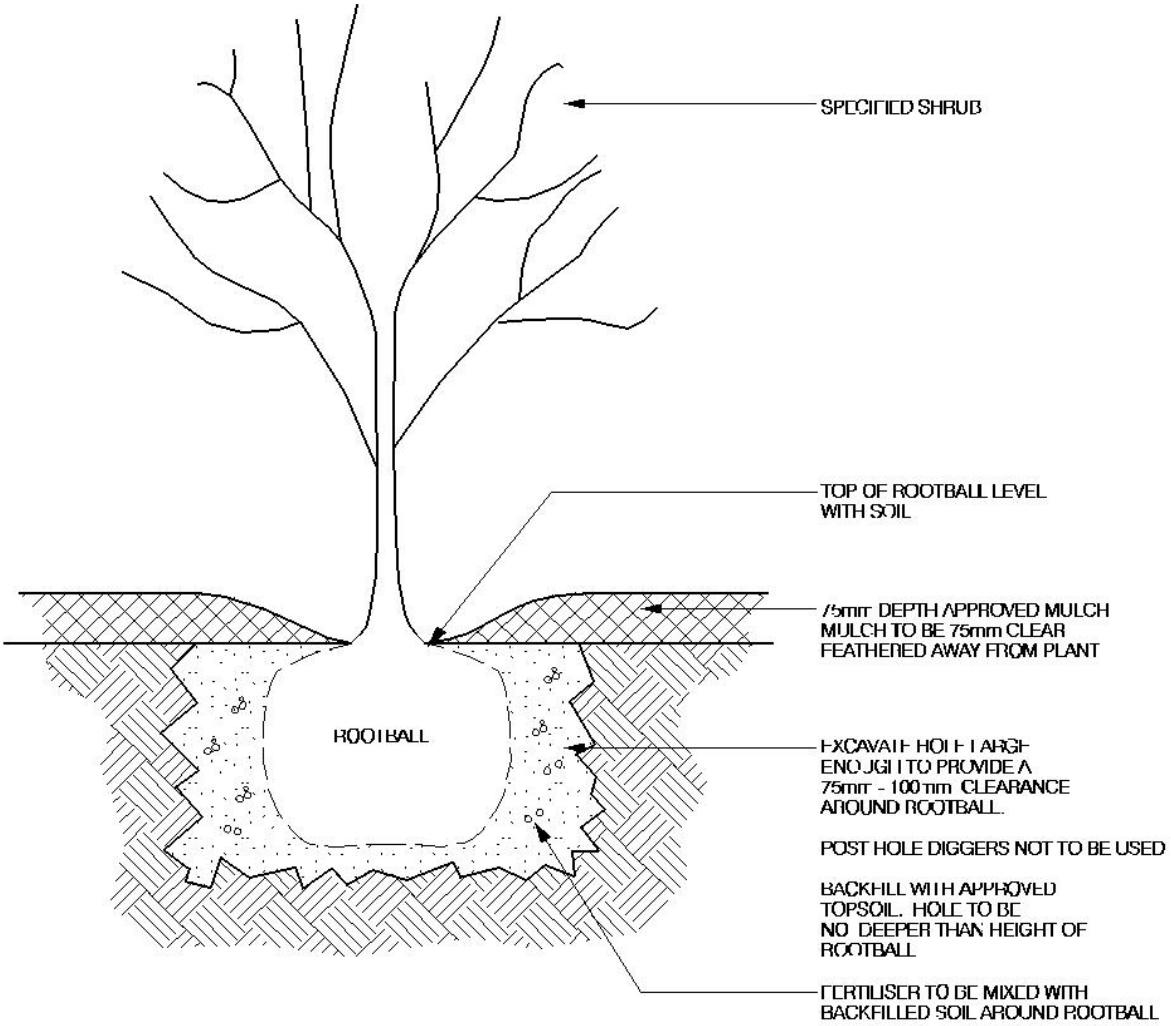
Mix 12 month slow release fertiliser granules with the broken up soil. Do not use granules on species which may be intolerant of fertiliser.

HP: CONTACT THE SUPERINTENDENT TO OBTAIN APPROVAL OF ALL PLANT HOLES PRIOR TO PLANTING.

The Contractor shall be responsible for the handling and planting of trees and in particular shall prevent the root mass from all forms of damage during the planting operations.

All planting setouts shall conform to the planting documentation in specified densities, sizes and numbers. Any change to plant setout to be approved by the Superintendent and Council Representative.

Figure 740.091



740.11 SUBSIDENCE OF NATURESTRIPS

The contractor shall monitor and reinstate subsidence's on naturestrips during construction and the defects liability period. Reinstatement of any subsided areas shall be undertaken in accordance with specification section 740 and includes rectification of any trench backfilling, topsoiling and grass seeding.

740.12 GRAVEL PAVING

(a) **Construction**

The Contractor shall prepare and install a 100mm compacted depth of compacted class 2 FCR base course in accordance with the drawings.

The approved topping layer shall be placed directly in a uniform continuous layer of loose thickness which after compaction, will not be less than the required 50mm thickness. The method of placement shall not cause segregation of the material.

(b) **Finish**

The surface of the topping pavement shall be graded and if necessary, scarified, regraded and re-rolled until the regular finish of the required surface density at the required levels, grades and profiles has been achieved. Finished surface levels are to match surrounding surface levels.

(c) **Stockpiled topping**

Any stockpiled topping deemed appropriate for re-use may require on-site mixing of cement to achieve stabilization.

(d) **Tolerances**

Ensure gravel/topping is laid to the alignment and grades shown on the drawings. The surface is to not deviate more than +/- 5mm over a 3m length. The edges are to not deviate more than +/- 3mm over a 3m length. Surfaces are not to puddle or pond. Puddling or ponding is defined as enough water to cover a 10 cent piece.

(e) **Edge**

At all gravel paving edges, spread by hand cement to 300mm from edge, and water-in to prior to compaction to stabilise gravel edges to prevent spread of gravel into grass, or to prevent mixing of different gravel types.

(f) **Gravel Without Edging**

Formwork or a sacrificial-edge is to be formed at the edges of gravel paving without edging. The specified gravel is to be installed and compacted as detailed and specified in clause 7.7 Gravel Paving. Adjacent topsoil is to be installed and consolidated against the sacrificial-edge, prior to the removal of the sacrificial-edge in order to achieve a sharp definition between the gravel and topsoil area.

(g) **Tuscan Topping – Gravel Type A**

The Contractor shall construct Tuscan topping (7-12mm size) paving on top of the compacted FCR base to areas as shown on the drawings and as detailed in this Specification.

Topping used shall be approved by the Superintendent and shall be free of scoria dust, weeds and foreign matter. Particle size must not exceed 12mm.

(h) **Crushed Recycled Red Brick – Gravel Type B**

The Contractor shall construct Crushed Recycled Red Brick topping (7-12mm size) paving on top of the compacted FCR base to areas as shown on the drawings and as detailed in this Specification.

Topping used shall be approved by the Superintendent and shall be free of scoria dust, weeds and foreign matter. Particle size must not exceed 12mm.

(i) **Granite Dust – Gravel Type C**

The Contractor shall construct Granite Dust paving on top of the compacted FCR base to areas as shown on the drawings and as detailed in this Specification.
Topping used shall be approved by the Superintendent and shall be free of scoria dust, weeds and foreign matter. Particle size must not exceed 12mm.