

**SPECIFICATION
FOR CONSTRUCTION
OF
RIGHTS OF WAY**

Revised 08-09-2002



TOWN OF VINCENT

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SECTION ONE

CLEARING AND EXCAVATION

1.0 CLEARING AND EXCAVATION

1.1 EXTENT

Clearing shall only be carried out to the extent of property boundary/or as specified. The Contractor shall obtain approval prior to commencing clearing. The contractor shall dispose of all cleared material off site. No material removed as part of the clearing shall be used as backfill.

1.2 VEGETATION

All dead trees, whether standing or fallen, shall be disposed off site.

Vegetation material shall be carted to a municipal dump site.

1.3 CLEARING AND EXCAVATION

Excavation is to be kept to a minimum, ensuring that damage to existing structures is kept to a minimum.

Where clearing and excavation occurs adjacent to existing residences all works shall be undertaken in such a fashion as to minimise inconvenience to the residents and general public. Contractors are to ensure minimal damage to any of the property including fences, shrubs and trees and any damage shall be reinstated to the satisfaction of the Executive Manager Technical Services or his representative.

SECTION TWO

STORMWATER DRAINAGE

2.0 STORMWATER DRAINAGE

2.1 GENERAL

All the works must be constructed in accordance with this Specification.

2.2 MATERIALS

2.2.1 Precast Components

All precast components incorporated in the works shall be free of cracks, chips and deformities. Any damaged items shall be rejected and removed from the site.

2.2.2 Precast Concrete Lines

Precast concrete liners for soakwells shall unless otherwise specified, be constructed of 1200mm nominal diameter reinforced concrete pipe segments. The segments shall be of equivalent strength of Class "2" pipes and shall have interlocking joints and louvred slots.

2.2.3 Concrete

Concrete used for in-situ work shall conform to AS3600 and be provided by a pre-mix concrete supplier conforming with AS1379, or mixed on site using materials as specified and plant to the approval of the Executive Manager Technical Services.

Concrete for soakwells shall have a minimum 28 day cylinder test compressive strength of 20 Mpa.

Maximum size of aggregate shall be 20mm.

2.2.4 Cement

All cement used shall be Portland Cement in accordance with AS1315 and obtained from an approved manufacturer.

Cement shall be delivered to the site fresh and in sealed bags and stored in a weather-proof environment until such time that it is to be used. Any bag showing signs of deterioration or setting is to be rejected.

2.2.5 Aggregate

Fine aggregate shall be well graded, clean, sharp and free from clay and organic impurities in accordance with AS1141.

Coarse aggregate shall be crushed granite or diorite clean and free from all impurities and dust in accordance with AS1141.

The maximum particle size shall not exceed 20mm.

2.2.6 Water

Water for use in concrete and mortar shall be free from any impurities harmful to concrete, mortar or steel.

2.2.7 Sand

Sand for mortar shall be crushed stone or natural sand free from all deleterious substances and have a uniform grading. Mortar shall be 3 parts sand, 1 part cement.

Sand for bedding or backfilling shall be clean sand free from roots, clay or any deleterious matter.

2.3 DRAINAGE SOAKWELLS

2.3.1 General

Soakwells shall be constructed with the tops of the covers laid, flush with the top of the pavement level and matching the longitudinal grade of the pavement.

The distance between soakwells shall not exceed 40.0m from centre to centre or as specified by the Executive Manager Technical Services or his representative.

2.3.2 Soakwell Excavation

Excavation for soakwells must be made to a depth of 1200mm and of sufficient dimensions to allow the base and walls to be constructed.

Where a firm pit foundation cannot be obtained, the Contractor shall place timber piles and raft. The depth of piles shall be as directed by the Executive Manager Technical Services.

2.3.3 Precast Concrete Soakwells

Precast Concrete Soakwells shall be assembled in strict accordance with manufacturer's specifications. It is important that the alignment of the pipe liners and the level and location of the matching pieces be accurately set in order that kerb level and location of the matching pieces be accurately set in order that kerb level components can be properly constructed. If the pits are not constructed to the correct lines and levels, they shall be removed and rebuilt.

All joints between pit components shall be grouted with 3:1 sand/cement mortar.

The lengths of pit liners shall be chosen with particular regard to the design of each pit. Generally, the number of joints should be minimised by the use of 0.9m and 1.2m lengths. Under no circumstances shall the top most section be broken down to a length of less than 300mm.

2.3.4 Soakwell Base

Bases shall be a minimum of 150mm thickness. Bases may comprise either precast or cast-insitu slabs.

2.3.5 Soakwell Covers

Soakwells shall have a concrete cover which contains a cast-in grate and frame.

For all covers, the lids shall be fitted with suitable lifting keyholes and rings.

2.3.6 Brickwork

All brickwork shall be carried out by competent tradesmen. The bricks shall be properly bedded and bounded true to line and level.

All joints shall be struck smooth. Mortar for brickwork shall be one part Portland Cement, to three parts sand batched by weight.

2.3.7 Inspection And Tolerances

No backfilling shall be commenced until the drainage has been approved by the Executive Manager Technical Services or his representative.

The horizontal deviation of any soakwell shall not exceed:-

150mm from the alignment of the centre line of the ROW or the agreed soakwell location.

The soakwell grate shall not vary more than 10mm from the calculated level of the ROW pavement level.

Soakwells which have not been constructed within tolerance shall be excavated and relayed at the entire cost of the Contractor.

2.3.8 Backfilling

The material used for backfilling soakwells in pavements shall be a clean granular material free from stones over 25mm dimensions, organic or other deleterious matter and shall be compacted in 300mm layers to a minimum of 95% of the Modified MDD, up to the subgrade level.

The surfaces shall be graded level with the surrounding ground.

If any subsidence of backfill occurs during the Contract period, including the Defects Liability Period, in any ROW, or elsewhere in the works, the Contractor shall at his own expense, make it good immediately.

In the event of the Contractor's failure to make good such defects, the Executive Manager Technical Services may take action under the provisions of AS2124-1992.

SECTION THREE

PAVEMENT

3.0 PAVEMENT

3.1 GENERAL

The pavement shall consist of either 200mm thick compacted limestone using 19mm or 75mm material or 200mm thick gravel or road base with a minimum 25mm bituminous concrete seal.

All material to be supplied and/or used by the Contractor shall conform to the relevant Australian Standard Specification and in all cases shall be of quality approved by the Executive Manager Technical Services or his representative.

The Contractor shall advise the Executive Manager Technical Services or his representative of the source of the various materials or place of manufacture.

Whenever directed by the Executive Manager Technical Services or his representative, the Contractor shall prepare a sample of the required size, number and description and submit for tests as specified or additional tests as may be considered necessary. If the samples so tested do not fully comply with the required standards, the materials used and all articles made therefrom may be absolutely rejected and the Contractor shall replace them with new and sound materials and submit for further testing as may be considered necessary by the Executive Manager Technical Services.

The Contractor shall give sufficient notice so that materials brought on site may be examined by the Executive Manager Technical Services or his representative. All materials that in the opinion of the Executive Manager Technical Services are unsuitable shall be removed from the site within 24 hours of receipt of written instruction from the Executive Manager Technical Services or his representative.

Should the Contractor fail to carry out such instruction, then the Executive Manager Technical Services shall have the power to effect the removal at the Contractor's expense. When the Contractor delivers quantities of material of a mixed description, the Executive Manager Technical Services shall have the power to require the Contractor to sort out the materials into suitable and unsuitable parts, and to remove the unsuitable materials from the site.

3.2 FINISHED LEVELS/GRADIENTS

The longitudinal grade of the ROW if no design plans are available is to be no less than 0.5% or 1 in 200.

All drainage is to be retained in the ROW refer typical Cross section (Drawing No. A496052A). Where existing garages/properties gain vehicular/other access onto the ROW, the pavement needs to grade away from the lowest point and a series of high and low points created to ensure that **no** stormwater runs off into the adjoining properties.

3.3 MATERIALS

3.3.1 Limestone

All limestone used in sub-base construction shall conform to the following specifications:

Crushed limestone shall be limestone obtained from an approved source and be crushed to comply with the grading in this specification.

The crushed limestone shall be free from:-

- (a) roots and other organic matter; and
- (b) sand, capstone and other deleterious material

Methods of sampling and testing of crushed limestone shall be in accordance with the following Australian Standards:-

AS1141 - 1974 Methods of sampling and testing Aggregates

AS1289 - 1977 Methods of testing soils for Engineering purposes

The crushed limestone shall have resistance to abrasion, when determined in accordance with the Los Angeles Test to show a weight loss not exceeding sixty (60) per cent by weight.

The Calcium Carbonate content of the crushed limestone shall not be less than sixty (60) per cent by weight.

The crushed limestone for sub-base shall comply with the following grading requirements:-

Sieve Size	Per Cent Passing by Weight
(Square openings As Sieve)	
75mm	100%
19mm	50-75%
2.36mm and less	30-50%

Notwithstanding this specification, any sample, which in the opinion of the Executive Manager Technical Services is composed of unsuitable material or is composed of material which would break down with ageing or weathering to such an extent that it would then fall outside the limits of the specification, shall be rejected. Any material thus rejected, shall immediately be removed and no liability for payment in any manner whatsoever will be accepted by the Executive Manager Technical Services for such rejected consignment.

3.3.2 Gravel

General Requirements

A gravel base course shall consist of a combination of soil binder, sand and gravel and shall conform with this specification. It shall be free of vegetable matter and lumps of clay and shall not contain high quantities of pyrites or other deleterious substances.

Coarse aggregate retained on a 2.36mm sieve shall consist of hard, durable particles or fragments of gravel; materials that break up when alternatively wetted and dried shall not be used.

Coarse aggregate shall have a percentage wear by the Los Angeles Abrasion Test of not more than forty-five (45).

Fine aggregate passing a 2.36mm sieve shall consist of natural or crushed sand and fine mineral particles passing the 0.075mm sieve.

The ratio of the portion passing the 0.075mm sieve.

The ration of the portion passing the 0.075mm sieve to the portion passing 0.425mm sieve shall fall within the range 40-60%.

Soil Contents

The portion of the sample which passes the 0.425mm sieve (Soil Mortar) shall conform to the following requirements when tested in accordance with AS1289 - Parts C and E.

Plastic limit shall not exceed	20
Liquid limit shall not exceed	25
Plasticity Index shall not exceed	5
Linear Shrinkage shall not exceed	1%
Dry Compressive Strength shall not be less than	1.75 Mpa
Dust ratio shall not exceed	2/3

Grading

When tested in accordance with AS1289 C6.1, the grading of the gravel shall conform to the following requirements:-

Sieve Size (Square opening AS Sieve)	Percent by Weight Passing
19mm	100%
4.75mm	45-65%
2.36mm	30-50%
0.425mm	12-30%
0.075mm	00-12%

Notwithstanding this specification, any sample, which in the opinion of the Executive Manager Technical Services or his representative, is composed of unsuitable material, or is composed of material which would break down with ageing or weathering to such an extent that it would then fall outside the limits of this specification, shall be rejected. Any material rejected, shall immediately be removed and no liability for payment will be accepted by the Executive Manager Technical Services for such rejected consignment.

3.3.3 Concrete

Concrete shall conform to AS3600 and shall be supplied by a concrete supplier conforming with AS1379.

Concrete shall have a characteristic strength of 25mpa, 60mm slump and maximum aggregate size of 20mm.

Concrete strength shall be tested by means of product assessment methods in accordance with Section 20.4 of AS3600. The Contractor shall register the project and arrange for results to be sent to the Executive Manager Technical Services.

On site mixing of concrete may be used subject to the Contractor's proposal of mix details being submitted to and approved by the Executive Manager Technical Services. Site mixed concrete shall be subjected to site testing for slump and strength in accordance with the relevant Australian Standards.

3.3.4 Water

Water used for concrete or compaction of pavement materials shall be of potable quality, free from any impurities harmful to concrete or the pavement material being compacted and where public supply is used the Contractor shall obtain the supply Authority's approval to the use of the water for the Contract.

3.3.5 Clay Brick Pavers

General

Clay brick paving units to be supplied shall be high temperature fired with exposed faces of an extruded wire cut or pressed finish.

Dimensional Tolerance

The paver shall be of 230mm nominal length x 114mm nominal width with a minimum depth of thickness of 76mm or otherwise as approved and shall have a ± 2 mm tolerance on all dimensions.

The brick shall be true in shape with all intersecting faces subtending an angle of 90 degrees.

When pavers have bevelled or rounded edges, the plan width of bevel shall not exceed 5mm and the radius of a rounded edge shall not exceed 7mm.

The brick face shall be free from dishing and warping and when tested with a straight edge placed on any face, the maximum permissible deviation from the contact edge shall not exceed 2mm.

The average size of pavers should be determined regularly by randomly selecting twenty pavers and placing them in contact in a straight line on a level surface. Any blisters or other small projections should be removed before the overall measurements divided by twenty.

The laying gauge for herringbone bond should be determined by using the average size of the pavers together with the nominal joint width of 2.0mm to 3.0mm.

Transverse Strength (modulus of rupture)

The transverse strength shall be determined by the procedure outlined in AS1226.3 and the characteristic transverse strength shall not be less than 2.0Mpa.

Wear Resistance - Abrasion Test

The abrasion test to be used to determine wear resistance is Procedure C of ASTM C779-76, "Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces" as modified by the Perth City Council. The test provides impact and sliding friction under ball bearings to give rate of wear (depth) versus revaluation evaluations. A sample of five bricks tested in accordance with this procedure shall have an average abrasion index exceeding 1.5.

Resistance to Salt Attack

Resistance to salt attack shall be determined by the sodium sulphate test described in AS1226.10. Pavers which are likely to be exposed to severe salt attack in service shall withstand 40 cycles of the test.

Pitting Due to Lime Particles

When tested in accordance with AS1226.7 the liability of clay pavers to pitting due to the expansion of lime particles shall not be worse than moderate as defined by AS1225.

Liability to Efflorescence

Liability to efflorescence when determined in accordance with AS1226.6 shall be described as nil to slight.

Absorption

Water absorption properties of the brick when determined in accordance with AS1226.8 (twenty-four) shall be less than 12.5%. Variations between bricks tested in accordance with this method shall not exceed 2%.

Compressive Strength

The minimum characteristic compressive strength when determined in accordance with AS1226.4 shall be 28Mpa.

Permanent Expansion

The estimated long term (five year) unrestrained expansion when determined in accordance with Section H of the BDRI “Methods of Test” shall not exceed 0.6mm/m.

Slip/Skid Resistance

The slip/skid resistance (BPN) of a paver shall be determined by using the British Pendulum Slid Resistance Tester. The BPN values from tests carried out on five unused pavers shall not be less than 60 BPN.

3.4 SUB-GRADE

3.4.1 General

All subgrade material shall be checked to ensure that it is free from roots and any other organic matter and/or other potentially deleterious material. It shall remain the Contractor’s responsibility to satisfy themselves that the proposed site sand subgrade material as found on site is suitable for the purposes of this Contract as specified herein and shall perform accordingly.

3.4.2 Non Conforming Subgrade

Any section of sub-grade which, in the opinion of the Executive Manager Technical Services, is composed of unsuitable material or is composed of material which would break down with ageing or weathering to such an extent that it would then fall outside the limits of the Specification shall be rejected. Any material thus rejected shall immediately be excavated and removed from site and replaced with conforming material by the contractor.

The subgrade shall be excavated in conformity with the profiles, dimensions, camber and depths shown on the approved drawings.

3.4.3 Width of Box

The width of box excavation shall be in accordance with the approved drawings. The tolerance for sub-grade width shall be +/- 100mm.

3.4.4 Subgrade Tolerance

The finished levels of sub-grade shall be within +/- 20mm of the design levels.

3.4.5 Subgrade Density

The sub-grade shall be compacted to 95% of the maximum dry density when tested in accordance with AS1289 E2.1 - 1977.

3.5 BASE COURSE

3.5.1 General

The base course is to consist of material specified in Section 3.2.2 and 3.2.3 and shall comply with the material requirements of this Specification.

3.5.2 Base Course Thickness

The thickness of the base course after compaction shall be to the design thickness specified on the approved drawings. Tolerance -0 + 10mm.

3.5.3 Preliminaries

The base material shall be placed so that the sub-grade material is not disturbed or broken up and an even thickness as specified is obtained.

3.5.4 Spreading

The base material shall be spread:-

- (i) To the required compacted thickness by means of an approved mechanical spreader.
- (ii) By grading from continuous stacks deposited on the sub-base.

All materials shall contain sufficient moisture to ensure that the specified density requirements are obtained when the materials are compacted.

Materials shall be spread without segregation of large or fine particles. Segregated materials shall be remixed by harrowing and blading or removed from the site.

3.5.5 Compaction

The base course material shall be compacted by rolling and watering. Each course shall be rolled until it is compacted to a firm, even surface by approved self-propelled steel-wheel or pneumatic tyred rollers. The use of the pneumatic tyred roller is essential for the final passes to achieve the compaction of the immediate surface material. Where in the opinion of the Executive Manager Technical Services, damage to adjoining properties may result, the use of vibrating rollers will not be permitted.

The rolling shall be carried out parallel to the centreline of the road and shall progress gradually from the low to the high part of the road, uniformly lapping each preceding track, covering the entire surface thoroughly and continuing until the surface presents a smooth even surface, true to the required shape and grade. Grading of loose material over a hard surface and/or compaction in a thin layer is not permitted.

When completed, the pavement shall be firm and unyielding to the satisfaction of the Executive Manager Technical Services and have a compaction which shall not be less than 98% of the maximum dry density when tested in accordance with AS1289 E2.1 - 1977.

The surface course shall be tested for shape and level and any irregularities greater than 10mm when tested for shape and level and any irregularities greater than 10mm when tested with a straight edge three (3) metres long shall be made good by addition or removal of material and further rolling until the specified cross section is obtained.

If, during the construction period, the surface of the pavement shows, in the opinion of the Executive Manager Technical Services, evidence of crazing, ravelling, potholes, corrugation, consolidation, subsidence or lack of cohesion, the pavement shall be loosened uniformly by harrowing or other approved means, additional material added where necessary to fill depressions or to provide binding, and the whole compacted as specified.

3.5.6 Alternative Methods of Construction

Alternative construction for the base courses may be approved on submission on specification and such specification being approved by the Executive Manager Technical Services.

3.6 KERBING

3.6.1 Material

Concrete used for the kerb shall be ready mixed concrete conforming with the provisions of Australian Standard No. 1579. The maximum size of aggregate shall be greater than 9mm but less than 20mm.

The cement shall be Portland Cement conforming with the provisions of AS 1315 and have a 30mm slump.

The cylinder strength when tested in accordance with AS 1012 part 9 shall exceed 10 Mpa in 7 days and 20 Mpa in 28 days.

3.6.2 Equipment

All kerbing constructed under the specification shall be placed by an extrusion machine approved by the Executive Manager of Technical Services or his representative.

3.6.3 Shape

Gaps between old and new work shall be filled by hand placing, rodding and shaping of the concrete until satisfactory shape and finish has been obtained.

Hand placed sections shall be constructed using similar concrete to that used for the remainder of the kerb, rodded and shaped to give a finished kerb meeting the requirements of this specification.

The top surface of the kerb shall be parallel to the ruling grade of the pavement or pre-determined level and shall be free from depressions exceeding 3mm when measured from 3 metres long straight edge.

3.6.4 Jointing

Expansion joints shall be provided at 5.0 metre intervals, sawn at right angles to the longitudinal line of the kerb. The width of joint shall be 10mm thick extending the full section of the kerb.

All expansion joints shall be sealed over the full face of the section with a 12mm square strip of "Sampreme" foam or similar approved joint filler, leaving a depth of 10mm at back, top and front of kerb which shall be sealed with Expandite Silicone 66 or equivalent to a depth of 10mm to all faces of the kerb.

Equivalent types of foam and mastic may be used if approved by the Executive Manager of Technical Services. All joints shall be cut on the day following the laying of the section.

3.6.5 Contraction Joints

Contraction joints shall be formed at 5.0 metre intervals, located midway between expansion joints and shall be made full depth of the kerb by cutting with a spade, shovel or similar tool. The joint shall then be formed with a grooving tool to a depth of 15mm and a width not greater than 6mm.

All contraction joints shall be sealed with Expandite Silicone 66 or equivalent, finishing 3mm below the face of the kerb.

3.6.6 Curing

After initial set, concrete surfaces shall be cured for a minimum period of seven (7) days with a sprayed application of Calcure 'CR' or equivalent, applied at the rate and by a method specified by the manufacturer, within two (2) hours of surface finishing of the concrete.

3.6.7 Protection for Pedestrians and Vehicles

Adequate provision shall be made by the Contractor for the safe and convenient passage of pedestrians and vehicles in sections of road, footpath or pedestrian island adjacent to work.

The contractor shall be responsible for all damage to kerb by pedestrians, traffic or weather, etc., until the joints have been cut. Any damage shall be made good at the contractor's expense.

No materials or plant required in the construction of the kerb shall be deposited on any footpath or roadway so as to obstruct pedestrians or traffic unreasonably. All materials and plant shall be kept within the narrowest practicable limits.

Suitable traffic barriers and/or warning signs to regulate and protect pedestrians and traffic shall be erected by the Contractor and maintained as may be necessary or as directed. Such barriers and warning signs, if required at night, shall be provided with warning lights and shall be erected by the Contractor and maintained as may be necessary or as directed. Such barriers and warning signs, if required at night, shall be provided with warning lights and shall be illuminated for sunset to sunrise.

Particular attention is drawn to the appearance of the finished work. All precautions shall be taken to prevent the dropping of concrete onto sealed pavements, and dropped materials are to be removed immediately and the marks obliterated by washing and brooming before the concrete sets.

3.6.8 Backfilling

The backfilling to the kerb shall be placed after the curing of the concrete and acceptance of the kerbing by the Executive Manager Technical Services.

The backfill material shall be a similar material to the locally occurring topsoil, free from debris and compacted to not less than 92% of the maximum dry density when tested in accordance with AS1289 Es.1 - 1977.

3.6.9 Non-Conformance

Any work not complying with the above specification shall be removed at the Contractor's expense and no payment for such will be made. All surplus materials including materials removed due to non-compliance with the specifications, shall be removed from the site and the area left in a neat and tidy condition.

3.7 TIMBER EDGE RESTRAINT

3.7.1 Materials

Timber used for the edge restraint shall be Jarrah conforming with the provisions of AS2796-1985. Bolts used shall be galvanised cup head square neck bolts conforming with AS1390

3.7.2 Dimensions

Timber edging is to be 3.0 metres in length with a cross section of 150mm x 75mm.

Timber legs are to be 760mm in length with a cross section of 1500mm x 75mm.

Bolts are to be 10mm in diameter and 170mm long.

3.7.3 Installation

The timber edging is to be laid along the edge of the box with timber legs at 1800mm centres bolted to the timber edging with a minimum of one (1) bolt per leg as shown on the drawings.

The timber leg is to be attached to the outside of the timber edging where possible.

Where minor retaining is required up to 300mm in height this may be carried out by stacking the timber edging and increasing the length of the timber legs.

3.7.4 Non-Conformance

Any work not complying with the above specification shall be removed at the Contractor's expense and no payment for such will be made. All surplus materials including materials removed due to non-compliance with the specifications shall be removed from the site and the area left in a neat and tidy condition.

3.8 BITUMINOUS CONCRETE

Refer to the Institute of Municipal Engineering Australia (WA Division) (IMEA) Technical Specification for Supply and Laying of Hot Asphalt Road Surfacing (Appendix 1).

3.8.1 General

The bituminous concrete surface shall be 10mm nominal size with a minimum compacted thickness of 25mm. All workmanship is to be in accordance with the IMEA Technical specification for the Supply and laying of mixed asphalt road surfacing and AS2734-1984 "Asphalt (hot-mixed) paving - Guide to good practice".

3.9 BRICKPAVING INSTALLATION

3.9.1 Laying Paving Units

Paving units shall be placed on an uncompacted screeded sand bed to the nominated laying pattern, care being taken to maintain the specified bond throughout the job. Paving units shall be placed to achieve gaps nominally 2 to 4mm wide between adjacent units such that all joints are correctly aligned.

The first row shall abut an edge restraint with a gap of 2 to 4mm and shall be laid at a suitable angle to the edge restraint to achieve the required visual orientation of paving units.

In each row all full units shall be laid first. Closure units shall be cut and fitted subsequently. Such closure units shall consist of not less than 25% of a full unit. Units may be cut using a mechanical or hydraulic guillotine, bolster, or by power sawing. Cutting of pavers to less than 25% of their standard size should be avoided by using insertions one half or three quarter size.

Except where it is necessary to correct any minor variations occurring in the laying bond the paving units shall not be hammered into position. Where adjustment of position is necessary, care shall be taken to avoid premature compaction of the sand bedding.

Any foot or barrow traffic shall use boards overlaying paving to prevent disturbance of units prior to mechanical compaction. No other construction traffic shall be allowed on the pavement at this stage of construction.

Concrete speed humps are to be provided at a maximum of 40.0m centres to Council specifications.

3.9.2 Compaction

After laying the paving units they shall be compacted to achieve consolidation of the sand bedding and brought to design levels and profiles by not less than three passes of a suitable plate compactor.

3.9.3 Damaged Units

Any units which are structurally damaged during compaction or do not comply with the acceptance criteria hereinafter described, shall be immediately removed and replaced.

3.9.4 Filling Joints

As soon as practical after compaction, and in any case prior to the termination of work on that day, sand for joint-filling shall be spread over the paving units. The sand shall be free of all soluble salts or contaminants likely to cause efflorescence or staining.

The filling sand should be broomed to fill the joints. At least one pass of the plate vibrator is required to achieve compaction of the joint filling sand.

3.9.5 Acceptance Criteria for Paving

Initial acceptance and confirmation of Practical Completion will not be approved until the following criteria are satisfied.

- i) the finished pavement shall conform to the construction tolerances and be free draining at all times. The maximum finished surface tolerance deviation using a 3m straight edge shall be 10mm and the level of adjacent pavers shall not differ by greater than 2mm.
- ii) the pavers shall be true to shape with no transverse cracking or surface crazing.
- iii) paving units shall be blended as required to ensure the colour of the pavement is uniform.
- iv) the surface texture to be uniform throughout.

3.9.6 Clean Up

At the completion of all paving works, the Contractor shall clean away all debris resulting from his works.

Kerbs shall be left clean and true to line, manhole lids shall be exposed and flush with the finished paving levels, stormwater pits shall be free from all debris and their surface flush with the pavement as detailed.

3.10 PROVISION FOR TRAFFIC

3.10.1 General

Ample provision must be made to minimise delays and inconvenience to ROW users and adequate provisions made for the safety of ROW users during the course of the work.

Signs, lights and any other necessary equipment shall be erected in accordance with the requirements of AS1742 as amended from time to time. All such equipment shall be maintained in good working order for the duration of the works.

3.11 SAFETY AND WORK PRACTICE REQUIREMENTS

All tenderers shall ensure that they, their plant, equipment and personnel comply with the Occupational Safety and Health Act 1984 and the Occupational Health, Safety and Welfare Regulations of 1988.

In addition all personnel working for the Towns of Vincent and Cambridge shall comply with the safety standards of the Towns especially with regard to safety footwear, high visibility vests and minimum standard of clothing for sun protection. All necessary safety equipment shall be provided by the tenderer.

The Towns of Vincent and Cambridge are committed to providing a healthy and safe workplace for Council staff, contractors and visitors. Accordingly, Council recognises its general duty of care obligations as an employer under the relevant Schedules of Occupational Safety and Health Act 1984 and as such requires that any person engaged by Council to perform work shall comply with any prescribed standards, rules and requirements to ensure that the risk of personal injury, plant or property damage or any other accidental loss or environment damage are so far as is practicable diminished.

The contractor is required to comply with local site rules and regulations. This includes but is not limited to:

- Observing smoking regulations.
- The ban or use of illegal drugs, alcohol consumption or carrying of live ammunition or firearms on site.
- The ban of having accompanying children on site.
- Observe housekeeping rules.
- Use and/or wear personal protective equipment as specified.
- Wearing appropriate clothing for sun protection.

As the contractor engaged by Council, you will be informed about your obligations and you may be required to attend or receive induction training prior to commencement on site. (This may include information about First Aid kit locations, Danger and Out of Service tag procedures or emergency evacuation information or location of fire fighting equipment).

Contractors may be required to provide proof of relevant insurance coverage or certificates of competency and contractors are required to report any injury, damage or loss to plant and property to the relevant Council Officer arranging the service.

The Contractor shall at all times conform strictly to the provisions of all site regulations as issued breaches may jeopardise future work with Council. You are urged to consider these issues and to ask questions if unsure.

The successful tenderer will also need to be aware and must comply with Council's policy on Overhead Wires Procedures - Roadworks.

SECTION FOUR

**ENGINEERING DEVELOPMENT
CONDITIONS**

4.0 ENGINEERING DEVELOPMENT CONDITIONS

4.1 CONDITIONS

Where, as a condition of development approval, the applicant is required to upgrade an adjacent right of way, the following conditions shall apply:

4.1.1 Scope of Works

The full length of the right of way, from the nearest gazetted road to the furthestmost boundary abutting the subject land, shall be sealed, drained and paved full width to the Council's specifications and under the Council's supervision, at the full expense of the applicant.

4.1.2 Notification

If the applicant chooses to carry out the actual upgrading works, Council's Technical Services section shall be notified at least 24 hours prior to the commencement of any works in the right of way.

4.1.3 Upgrade Bond

The submission of a bond for a sum nominated by Council for the full upgrade of the right of way shall be paid by the applicant prior to the issue of a Building Licence.

4.1.4 Timeframe

The upgrade of the right of way shall be completed in accordance with this specification within 180 days of the issuing of the Building Licence or Council shall use the bond to carry out the required works.