CITY OF VINCENT

SPECIFICATIONS FOR THE

REINSTATEMENT OF

ROADS & KERBS

November 2007

REINSTATEMENT OF ROADS

Introduction

Other than in cases of emergency all Service Authorities and Contractors must notify the City a minimum of twenty four (24) hours prior to commencement of any works.

All references are to current Australian Standards codes and practices.

1. GENERAL

1.1 All materials used shall be in accordance with this specification and Australian Standards. Any materials used which are inferior to those specified or as directed by the Director of Technical Services or his representative shall be rejected.

1.2 Protection of works and the public must be provided and all necessary signs, barricades, road warning lamps etc. shall be installed in accordance with AS1742.3.2002. and Main Roads Code of Practice.

1.3 Adequate provisions shall be made for the safe and convenient passage of pedestrians and vehicles at all times.

1.4 Suitable traffic barriers and/or warning signs to regulate and protect pedestrians and traffic shall be erected 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 from sunset to sunrise in accordance with A.S. 1742.3 2002. and Main Roads Code of Practice.

1.5 Any damage which may occur to any of the Council's infrastructure or private property during the course of the works of which may subsequently become evident from the operations thereof shall be the sole responsibility of the Contractor, who shall be held responsible for the repair, replacement, legal claims, liability or any other issue that may arise from the carrying out of any such works.

1.6 The Contractor shall be responsible for the location of **all** existing services and make good any damage caused.

1.7 Any damage by the contractor to private property, Council property or existing service infrastructure will be repaired at the contractor's expense.

2. TRAFFIC MANAGEMENT

The contractor shall abide by AS1742.3 2002 and the Main Roads Code of Practice.

3. ROADS TO REMAIN OPEN TO TRAFFIC

Roads shall remain open to traffic at all times.

Half road closures may be permitted during normal working hours following obtaining approval from the City subject to the correct Traffic Management Plans (T.M.P.) submitted 48 hours prior to works.

Outside the normal hours of work, the road is to be open to two way traffic, and shall be left in a safe and trafficable condition at all times.

CLEANING UP

The Contractor shall ensure that works are finished to uniform grade, free of depressions and that all surfaces make smooth junctions with existing work. The Contractor shall leave site in a clean, tidy and safe condition and will remove from the site all rubbish and salvaged materials. The whole area shall be left in a neat and tidy condition to the satisfaction of the City.

5. DEFECTS LIABILITY PERIOD

The contractor shall have the care and maintenance of all work for a period of 12 months. The contractor shall make good at his own expense, and to the satisfaction of the City of Vincent all defects of materials and works that may arise during this period.

The City of Vincent shall have the full, free unrestricted say as to of any defects that may arise during this period and request the contractor to replace any portion or all of the reinstatement at their cost.

9. DUST CONTROL

The Contractor shall comply with the provisions of Environment Protection Act 1986 and Environmental Protection Authority “Dust Control Guidelines” September 1990.
Any liabilities arising from dust control shall be the responsibility of the contractor.

10. NOISE CONTROL

Hours of work must comply with Environmental Protection Act 1986 and the Environment Protection Authority Noise Regulations 1997.
If work is to be conducted outside normal operational hours stated in the acts above, prior approval from the City of Vincent is a requirement.

11. ADJACENT RESIDENCES

The Contractor shall ensure all residences are given sufficient notice of works been undertaken on verges adjacent to their properties and that attention is given to avoid causing a nuisance to adjacent residences that are not notified or affected.

12. REINSTATEMENT OF TRENCHING IN ROADS

12.1 Formation

The formation shall consist of a minimum 300mm depth limestone or approved road base complying with the requirements of this specification. Sand compaction prior to the placement of limestone must be a minimum of 12 blows per foot with a penetrometer test.
Limestone testing shall be above 95% with Nuclear Density Testing by an approved laboratory.

The final asphalt seal shall consist of a minimum 40mm (local access roadways) and 75mm (distributor roadways) depth bituminous concrete thicklift with a 7mm or 10mm nominal size aggregate as outlined in this specification.

12.2. Excavation

The road surface is to be saw cut prior to commencing excavation to ensure that the resulting trench has defined square edges. Any irregularities to trench on conclusion are to be saw cut.

12.3 Sub-Grade

All sub-grade material shall be checked to ensure that it is free from roots and any other organic matter and/or other potentially deleterious material.

The sub-grade shall be compacted to minimum **95%** of the maximum dry density when tested in accordance with AS1289 2.1.1 – 2005.

12.4 Formation

(a) The formation shall be placed so that the sub-grade is not disturbed and broken up and that the even thickness specified is achieved.

(b) All limestone used shall as far as practicable conform to the following specifications:

- Crushed limestone shall be crushed to comply with the grading in this specification.
- Limestone must be free of capstone and any organic matter.
- Or approved road base.
- Methods of sampling and testing of crushed limestone shall be in accordance with the following Australian Standards:-

AS1141	Methods of sampling and testing Aggregates
AS1289	Methods of testing soils for Engineering purposes.

The crushed limestone shall have resistance to abrasions, when determined in accordance with the Los Angeles Test to show a weight not exceeding sixty (60)per cent of the weight.
The calcium carbonate content of the crushed limestone either 75 mm or 19m.m. shall not be less than sixty (60) per cent by weight.

Notwithstanding this specification, any sample, which in the opinion of the relevant officer is composed of unsuitable material and fall outside the limits of the specification, shall be rejected. Any material thus rejected, shall immediately be removed and replaced.

When completed, the pavement shall be firm and unyielding to the satisfaction of the Superintendent and have a compaction which shall not be less than 95 % of the maximum dry density when tested in accordance with AS1289 2.1.1 - 2005.

During the works if in the opinion of the superintendent the compaction does not appear up to standard, he may request at the contractors expense to have any road trench tested by an independent approved laboratory.

12.5 **Bituminous Concrete**

The minimum thickness of bituminous concrete shall be 40mm (local access roadways) and 75mm (distributor roadways) depth bituminous concrete thick lift with a 7mm or 10mm nominal size aggregate.

The bituminous concrete re-surfacing shall comprise of a mix of course crushed rock aggregate, fine aggregate and mineral sand filler, uniformly coated and mixed with bituminous binder.

(a) Aggregate

Course aggregate shall be good quality crushed diorite or granite, clean, free from weathered particles and excess dust. Sand shall be clean, hard and durable without clay and other deleterious matter.

The course aggregate shall have a Los Angeles abrasion loss of not more than 30%. The combined aggregate shall have a particle size distribution when tested in accordance with AS1289 as follows:-

	Percentage by weight minimal aggregate passing sieve	
AS sieve size	**10mm nominal size**	**7mm nominal size**
13.2mm	100	100
9.5mm	95-100	100
4.75mm	54-74	68-88
2.36mm	36-57	49-67
1.18mm	29-45	37-53
600.0µm	19-35	25-41
300.0µm	11-23	15-27
150.0µm	6-14	4-16
75.0µm	3-7	4-8

(b) Binder

The binder shall be Class 170 residual asphaltic bitumen and the bitumen content by weight of the total mix shall be 5% to 6% and comply with requirements of AS2008.

(c) Mixing

The bituminous concrete shall be mixed in an approved bitumen plant in accordance with Australian Standards.

Aggregate shall be pre-heated to a temperature of 130°C to 165°C. Binder shall be introduced at a temperature of 140°C to 160°C and mixing shall continue until a homogenous material is produced. Any material that is found to be at a temperature exceeding 175°C at the mixing plant shall be rejected and shall not be placed in the Works.

BRICKPAVING

13.1 Laying Pavers

Pavers shall be placed on a minimum 250mm thick compacted limestone base (in roads or crossovers) with 30mm of bedding sand. They shall be laid to the existing laying pattern, care being taken to maintain the specified bond throughout the job. Paving units shall be placed to achieve gaps nominally 2mm wide between adjacent units such that all joints are correctly aligned.

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

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 must be cut with a diamond blade power saw. 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.

13.2 Compaction and Filling Joints

After laying the pavers 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. Only white silica sand is to be used. **Yellow sand is NOT permitted.**

13.3 Damaged or Chipped Pavers

Any damaged pavers which are chipped or cracked during compaction or do not comply with the acceptable criteria described, shall be immediately removed and replaced.

13.4 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. The sand shall be free of all soluble salts or contaminants likely to cause efflorescence or staining.

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

13.5 Acceptance Criteria for Paving

Paving will not be approved until the following criteria are satisfied;

a) The finished pavement shall confirm to the construction tolerances and be free draining at all times.

b) The pavers shall be true to shape with no transverse cracking or surface crazing;

c) The pavers shall be blended as required to ensure the colour of the pavement is uniform; and

d) The surface texture is to be uniform throughout.

On completion the reinstatement must match the surrounding existing paving as close as possible. If the repair is inferior in appearance to the existing The City of Vincent may request the contractor to remove and re-do the works to the satisfaction of the City. To achieve this, the contractor may be required to relay a greater area than originally removed.

13.6 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 and lines shall be free from all debris and their surface flush with the pavement as detailed.

13.7 Screed Sand

Screed sand shall be well graded, free from deleterious materials and organic matter and must not contain soluble salts that may cause efflorescence.

13.8 Limestone

(Refer to Clause 12.4 (b)

13.9 Bricks

All bricks used, including new and/or existing to be free or any chips or cracks and are to match, in all regards, the existing paving.

14 EXTRUDED CONCRETE KERBING

14.1 Material

(a) Concrete used for the kerb shall be batched mixed concrete conforming to the provisions of AS3600. The maximum size of aggregate shall be greater than 9mm.

(b) The cement shall conform to the provisions of AS 1315 and have a 30mm slump.

(c) 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.

14.2 Shape

(a) 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 a 3 metre long straight edge.

(b) The reinstatement or repair of the kerb shall match the existing height and profile of the kerb layout in the street. In larger sections the contractor may have to clarify with the City of Vincent as to their requirements on the type of mould / profile of kerb.

14.3 Jointing

<u>Expanding Joints</u>

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.

At gully pits and all tangent points, the expansion joint shall be formed and made 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 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.

14.4 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.

14.5 Base for Kerb

All reinstatement or kerb repairs must be placed on a compacted limestone base of 250m.m. recessed 25m.m. below the road to allow the asphalt repair to fully lock the kerb to alleviate future damage.

15. PRECAST CONCRETE KERB

(a) Precast concrete kerbing may be used to replace existing. Kerb dimensions to match existing kerbing.

(b) Kerb to be placed on compacted sand level.

(c) The top surface of the kerb shall be parallel to the ruling grade of the pavement or predetermined level and shall be free from depressions and flush to existing kerb.

(d) The height of the measured kerb shall match the existing kerb height. Where a variation exceeding 5mm occurs, the kerbing will be re-laid at no expense to the Council.

(e) All joint widths shall be no more than 5mm thick extending the full section of the kerb.

(f) New and re-used sections of pre cast kerbing to be free of any crack, chips or other damage.