Colac Otway
SHIRE
Naturally Progressive

REINSTATEMENT GUIDELINES

August 2006

TABLE OF CONTENTS

1.0 INTRODUCTION

Roads and footpaths are key assets under the management and control of the Colac Otway Shire.

A number of statutory authorities and private organisations are responsible for utility assets, such as cables and pipes that run underneath roads and footpaths.

In order to access the various utilities, it is necessary for the road to be opened, and when work is completed any opening made good. Making good requires that any material used for filling and its subsequent compaction must be compatible with the surrounding material to ensure that the structural integrity of the roadway is maintained. If the opening has been in a sealed roadway, the final seal must also be compatible with that surrounding the opening. All reinstatement work must be to the satisfaction of Council by way of adopted standards.

The following Standards and Requirements have been developed with the view of setting the standards for all future works.

2.0 GENERAL REQUIREMENTS

2.1 Public Safety

From the date of commencement until full completion of the Works, the Works Manager performing the road opening shall take all reasonable precautions for the safety of the general public.

2.2 Services Outside Carriageways

Underground services outside carriageways shall be parallel or at right angles to the carriageway and shall have a minimum cover relevant to the type of service installation.

Where there is conflict with other services, adjustment to the minimum depth may only be made after consultation with Council and other relevant Infrastructure Managers.

Aerial services shall have a minimum height clearance of 4.9 metres above the natural surface and a minimum lateral clearance of 3 metres from the edge of carriageway in urban areas, except where frangible poles are used, unless otherwise approved by Council.

2.3 Crossing of Carriageways

Unless otherwise specified or shown on the drawings, crossings for conduits shall be made square to the road centreline and shall be made by boring from openings made outside the carriageway.

Unless otherwise specified, where pipelines or carrier-conduits greater than 75mm in diameter are placed under carriageways, the cover from the top of the pipe or carrier-conduit to the pavement surface shall be not less than 800mm and to the invert level of open drains shall not be less than 450mm.

Unless otherwise specified, where pipelines or carrier-conduits less than 75mm in diameter are placed under carriageways, the cover from the top of the pipe or carrier-conduit to the pavement surface shall be not less than 600mm and to the invert level of open drains shall not be less than 450mm.

Where there is conflict with other services, adjustment to the minimum depth may only be made after approval by Council.

2.4 Boring Under Carriageways

Detailed proposals for boring under carriageways or alternative underground methods proposed by the Works Manager shall be submitted to Council for approval before commencing work.

Unless otherwise specified, boring by water jetting will not be permitted.

Any damage to Council's assets by the use of soil displacement hammers shall be made good by the Works Manager to the satisfaction of Council.

Unless otherwise specified, the annulus between the bore and the pipe or conduit-carrier shall be backfilled by pressure grouting.

2.5 Provision for Traffic

The Works Manager performing the road opening shall be responsible for the safe usage of the site by traffic and pedestrians. Before works are commenced, the Works Manager shall erect all necessary warning signs, lights and barriers and shall maintain them in a satisfactory condition for the duration of the Works.

Traffic management shall be conducted in accordance with a traffic management plan prepared in accordance with the *Road Safety Act 1986*, Code of Practice, Work Safety – Traffic Management, and other relevant legislative requirements. Safe alternative arrangements shall be provided for pedestrians and cyclists where necessary. All signage during the course of works shall be erected and maintained in accordance with the traffic management plan.

The Infrastructure Manager is responsible for ensuring that their contractors have suitably secured the work site and stock piling sites associated with the works.

Unless otherwise specified, or except in an emergency, no work shall be carried out on the road reserve outside daylight hours.

Where traffic lanes must be closed to enable excavations to be made, the timing of the excavations and associated traffic control shall be subject to the prior review of Council.

2.6 Service Authority/Contractor's Representatives

On commencement of major work, the Works Manager shall advise Council of; the names, addresses and telephone numbers (both work hours and after hours numbers) of the representative who can be contacted in any emergency.

2.7 Removal of Soil

All excavated material not required or approved for backfill shall be removed from the site. The whole site shall be kept in a clean and orderly condition and rubbish removed daily.

The Works Manager shall be responsible for keeping public roads, which access the site, free from rubbish, dirt and mud.

Areas affected by the work shall be restored to a condition similar to that, which existed prior to commencement of the work, or to a condition approved by Council.

2.8 Stockpiling Material

All materials (minimum amounts only) which are required for the works shall be stored on the road reserve if the Works Manager finds it necessary to do so, and signed according to AS1742.3 or Code of Practice, Work Safety – Traffic Management.
The Works Manager shall not obstruct the channels or open drains in any road, but shall deviate them where necessary and use all proper measures to provide for the free passage of water along drainage lines by installation of pipes or other means.

No material shall be placed to interfere with the travelled path of vehicles or pedestrians.

Granular materials shall only be stockpiled on paved or granular surfaces. Natural surfaces must be avoided.

Any areas used for stockpiling must be restored, following its use, within 24 hours of works completion to a condition similar to that prior to commencement of works.

2.9 Excavation

Where the open trench method of crossing is approved (refer Section 2.3) the line of the trench shall be straight and form the shortest link between terminals wherever practical. The width of trench shall not be greater than that necessary to carry out the work, but wide enough to carry compaction equipment.

All trenches located within the pavement, paved footpaths and driveway crossing areas shall be sawcut prior to removal or unless agreed otherwise.

Any drains or services disturbed as a result of the work shall be reported immediately to Council.

2.10 Bedding

Where bedding is required, bedding shall be placed below, around and above the pipe or carrier-conduit for the full length of the trench. Not less than 25mm depth of bedding shall be placed below and not more than 150mm depth of bedding shall be placed above the pipe or carrier-conduit. Bedding shall not be placed in layers exceeding 150mm loose thickness and shall be compacted as specified.

2.11 Backfilling

In unpaved areas, openings shall be backfilled with ordinary backfill placed and compacted as specified in layers not exceeding 200mm loose thickness.

The top 100mm of backfill shall be in a good quality loam or topsoil.

In paved areas, including gravel shoulders and gravel roads, openings shall be backfilled as specified in SD00620 and SD00621 with selected backfill placed and compacted as specified in layers not exceeding 150mm loose thickness.

2.12 Compaction

Standard Drawing Number 8A indicates compaction requirements for each trench situation. If compaction is below the requirement, the Works Manager shall be asked to rectify the compaction requirements.

All openings once reinstated shall not be allowed to settle more than 30mm below that of the surrounding existing conditions before a notice is issued to rectify the reinstatement. This cost shall be borne by the Works Manager responsible for the original opening.

2.12.1 Bedding and Backfilling

Unless otherwise specified, bedding and backfill shall have during compaction a uniform moisture content within the range 85% to 115% of the optimum moisture content as determined in the Standard compactive effort.

For backfill of nominal size greater than 40mm, the fraction of material passing the 37.5mm sieve shall have during compaction a uniform moisture content within the range 85% to 115% of the optimum moisture content as determined for that fraction in the Standard compactive effort.

Bedding shall be compacted to refusal using handheld mechanical equipment.

Detailed proposals for the compaction of backfill materials of nominal size greater than 40mm shall be submitted to Council for review prior to the commencement of work.

2.12.2 Pavement

Unless otherwise specified pavement material shall have during compaction a uniform moisture content within the range of 85% to 115% of the optimum moisture as determined in the Modified compactive effort.

2.13 Maintenance

The backfilled surface shall be maintained in a trafficable condition after the completion of backfilling. Additional pavement material shall be placed in the trench and compacted as

specified where in paved areas settlement or loss of material from the surface exceeds 50mm measured from a straight edge laid across the trench.

All reinstatement of Council's assets will be subject to a maintenance period of 12 months. If at any time during this period the reinstatement works fail or move outside the tolerance indicated by Council's Reinstatement Standards, a notice to rectify will be issued to the Works Manager responsible for the original opening.

2.14 Pre-Cutting of Works

All concrete shall be cut prior to excavation. No bays shall be cut for part removal only. The full bay must be removed after cutting at the joints. The Works Manager shall be responsible for full replacement of bays unless otherwise agreed with Council.
All bitumen surfaces shall be cut prior to the works commencing unless otherwise agreed by Council.

2.15 Street Furniture

All street furniture removed (i.e. signs, bins, benches etc) shall be reinstated by the Works Manager as soon as practicable after the trench has been backfilled.

All damaged furniture shall be replaced at the cost of the Works Manager.

Where the item concerned is a major traffic control item (i.e. speed restriction signs, stop signs etc) the Works Manager shall notify the Council prior to removal so that Council employees may place temporary signs until the existing signs are reinstated. These costs shall be borne by the Works Manager.

The Works Manager shall be responsible for all street furniture while it is removed from its original site.

3.0 COUNCIL STANDARDS

3.1 Naturestrips

3.1.1 Standard

Naturestrips shall be deemed to consist of all unpaved areas including batters between the property line and back of kerb or the edge of the roadway and between kerbs on medians and traffic islands.

Naturestrips as defined above shall be backfilled to 100mm below finished surface and brought up to finished levels with good quality loam or topsoil.

No clay lumps, foreign or other material unsuitable for the planting of lawns shall be present in any form whatsoever in the top layer.

After placing the topsoil, the naturestrip area shall be raked to a fine tilth and sown down with approved seed mix and rolled down to existing surrounding level and grade.

Particular attention should be paid to the level of the reinstated nature strip to ensure that no ponding of water on footpaths occurs or mounding creates a tripping hazard.

3.1.1.1 Standard Drawing

SD00620 - Part C Naturestrips

3.1.1.2 Tolerance

The finished surface shall not deviate at any point more than 20mm from the existing surface.

3.2 Footpaths

3.2.1 Gravel – Standard

The trench up to within 150mm of the finished surfaced level shall be backfilled with ordinary earth removed from the excavation, but which shall contain not more than 20% of rock fragments having any dimension greater than 100mm.

This material shall be compacted by mechanical means in no more than 150mm layers.

The final 150mm to the surface level shall be compacted 20mm Class 2 Fine Crushed Rock. It shall be compacted by mechanical means with optimum moisture to enable a minimum density of 95% Australian Standards 1289.5. It shall be finished to existing level and grade.

3.2.1.1 Standard Drawing

SD00620 - Part F Gravel Footpaths

3.2.1.2 Tolerances

The finished surface shall be true to level and grade of existing surrounding surfaces and not deviate at any point more than 20mm from the bottom of a 3 metre straight edge.

3.2.2 Asphalt – Standard

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 95% Australian Standards 1289.5. It shall be finished to existing level and grade.

The existing footpath edge shall be sawcut at not less than 100mm from each side of the finished excavated width of the trench.

All openings prior to being reinstated shall be trimmed to provide a minimum depth of 25mm for asphalt.

All asphalt placed shall be compacted by either steel wheeled roller or vibrating plate. The surface shall be smooth and durable for pedestrian use.

All edges shall be treated with emulsion prior to the placement of asphalt.

Colour to match that of existing footpath.

3.2.2.1 Standard Drawing

SD00620 - Part E Asphalt Footpath

3.2.2.2 Tolerance

The finished surface shall be true to level and grade of existing surrounding surfaces. The finished surface shall not deviate at any point more than 20mm from the bottom of a 3 metre straight edge.

3.2.3 Concrete – Standard

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 95% Australian Standards 1289.5. It shall be finished to existing level and grade.

Only full bays shall be removed. No part bays are to be cut and removed unless approved by Council.

All work must be formed true to line with existing concrete.

Care must be taken to fill every part of the forms without displacing them.

The concrete reinstatement shall span the finished trench width by not less than 150mm each side and be a complete bay.

For a period of 24 hours following the completion of any concreting done in adverse weather conditions, the work shall be covered with hessian or another suitable material to prevent damage in wet weather or similarly covered by kept wet to prevent cracking in abnormally dry conditions.

The surface shall have an even non-skid surface.

All edges of slabs shall be given a 10mm bullnose finish with approved edging tools to improve appearances and prevent chipping.

The concrete strength shall be minimum 20mpa at 28 days. Concrete with a slump exceeding 100mm shall not be used. Site mixed concrete shall consist of at least 4:2:1 aggregate, sand and cement proportions respectively.

Colour to match that of existing concrete.

3.2.3.1 Standard Drawing

The replacement of concrete footpath shall be in accordance with the following standard drawings:

SD00607 – Concrete Footpath, Residential
SD00620 - Part D Concrete Footpath

3.2.3.2 Tolerance

The finished surface shall be true to level and grade of existing surrounding surfaces.

3.3 Kerb and Channel

3.3.1 Concrete and Bluestone Channel – Standard

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.

The reinstatement of concrete kerb and channel must be pinned using Y12 bar pins (min of 3). Pins shall not be inserted less than 100mm into existing concrete.

For a period of 24 hours following the completion of any concreting done in adverse weather conditions, the work shall be covered with hessian or another suitable material to prevent damage in wet weather or similarly covered and kept wet to prevent cracking in abnormally dry conditions.

3.3.1.1 Standard Drawing

All restoration shall be done in accordance with Standard Drawings SD00618 and SD00619.

3.3.1.2 Tolerance

The finished surface shall be true to level and grade of existing surrounding surfaces.

3.4 Property Stormwater Drains

Where a Works Manager passes through a property stormwater drain, it shall be reinstated as such:

3.4.1 PVC

It shall be replaced to the farther side of the service trench and neatly cut and joined with the appropriate size joiner.

All joints shall be solvent glued.

3.4.2 Earthenware

It shall be replaced to the side and the nearest join with a P.V.C. adaptor shown in Standard Drawing SD00617.

3.5 Vehicle Crossings

3.5.1 Standards – Gravel

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing levels and grade.

3.5.2 Standards – Asphalt

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.

All asphalt openings prior to being reinstated shall be trimmed to provide a depth of 50mm for asphalt.

All asphalt placed shall be compacted by either steel wheeled roller or vibrating plate. The surface shall be smooth and durable for vehicular use.

All edges shall be treated with emulsion prior to the placement of asphalt.

3.5.3 Standards – Concrete

The reinstatement of concrete vehicle crossings must be pinned using Y12 bar pins at 450mm spacing. Pins shall not be inserted less than 100mm into existing concrete.

All work must be formed true to line with existing concrete.

Colour to match that of existing concrete.

Care must be taken to fill every part of the forms without displacing them.

For a period of 24 hours following the completion of any concreting done in adverse weather conditions, the work shall be covered with hessian or another suitable material to prevent damage in wet weather or similarly covered and kept wet to prevent cracking in abnormally dry conditions.

The surface shall have an even non-skid surface.

All edges of slabs shall be given a 10mm bullnose finish with approved edging tools to improve appearances and prevent chipping.

The concrete strength shall be minimum 25mpa at 28 days. Concrete with a slump exceeding 100mm shall not be used. Site mixed concrete shall consist of at least 4:2:1 aggregate, sand and cement proportions respectively.

The concrete reinstatement shall span the finished trench width by not less than 300mm each side and be a complete bay.

Only full bays shall be removed. No part bays are to be cut and removed unless approved by Council.

Residential vehicle crossings	125mm thick	F62 mesh
Industrial vehicle crossings	175mm thick	F82 mesh

3.5.3.1 Tolerance

The finished surface shall be true to level and grade of existing surrounding surfaces.

3.6 Road Shoulders

3.6.1 Sealed

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.

All asphalt openings prior to being reinstated shall be trimmed to provide a depth of 50mm for asphalt.

All asphalt placed shall be compacted by either steel wheeled roller or vibrating place. The surface shall be smooth and durable for vehicular use.

All edges shall be treated with emulsion prior to the placement of asphalt.

3.6.2 Unsealed

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.

3.6.2.1 Tolerances

The finished surface shall be true to line, level and grade as existing surface.

3.6.2.2 Standard Drawing

SD00620 - Road Shoulders, Part B.

3.7 Road Pavement

3.7.1 Standards – Sealed

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.
All asphalt openings prior to being reinstated shall be trimmed to provide a depth of 50mm for asphalt as selected from the Guide for Selection of Hotmix Asphalt.

All asphalt placed shall be compacted by either steel wheeled roller or vibrating plate. The surface shall be smooth and durable for vehicular use.

All edges shall be treated with emulsion prior to the placement of asphalt.

3.7.2 Standards – Unsealed

All trenches shall have excavated material removed from site and backfilled with 20mm Class 2 Fine Crushed Rock. The material shall be compacted by mechanical means in no more than 150mm layers.

It shall be compacted by mechanical means with optimum moisture to enable a minimum compaction of 98% Australian Standards 1289.5. It shall be finished to existing level and grade.

The finished surface shall be true to line and grade as existing surface.

3.7.2.1 Standard Drawing

SD00620 – Road Pavement, Part A.