SECTION 7 - CONCRETE KERB AND CHANNEL

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7.1 DESCRIPTION

This section covers the requirements for the construction of cast in-situ concrete kerb and/or kerb and channel, inclusive of vehicle crossings and pram crossings, in the locations shown on the drawings.

The work shall be finished in conformity to the levels, lines, grades and cross sections shown on the drawings or as directed by the Superintendent.

7.2 BEDDING PREPARATION

Unless otherwise specified, a minimum 75 mm layer of bedding material consisting of 20 mm class 2 fine crushed rock shall be provided beneath kerb and channel.

The bed shall be compacted with a vibrating roller of equivalent weight to four (4) tonnes. The bed shall be watered prior to compaction and placement of concrete. The bed shall be inspected before placing kerb and channel and any unsuitable bedding rectified prior to casting of concrete.

The cost of all works specified above, including the supply of bedding material, shall be deemed to be included in the schedule price for the construction of kerb and channel.

7.3 KERB EXTRUSION MACHINE

The Contractor shall carry out all of the kerb and channel works of this contract with an approved kerb making machine, except as under clause 7.5. This machine shall be capable of producing kerb and channeling true to line and level and complying with this specification.

The Contractor shall establish the datum for grade and alignment of the section to be extruded.

All kerb and channel shall conform to the exact shape of Frankston City Council Standard Drawings SD 401-406 and SD 407-409 as detailed on the plans.

7.4 CONCRETE

Concrete, the material and methods of mixing, placing and curing shall comply with the requirements set out in Section 6 – Concrete.

7.5 FORMWORK

Where radial returns of less than three (3) metres radius are encountered, the Contractor shall use approved formwork.

Formwork will not be permitted on any other phase of kerb and channel work unless written approval is obtained from the Superintendent. Approval will only be given in special cases and then only for the use of steel formwork of approved manufacture.

Where formwork is used, all templates shall be boned true to grade or set to true level before any concrete is poured.

7.6 PLACING AND COMPACTION OF CONCRETE

Placing of concrete shall be carried out without separation of the aggregates. The machine operator shall at all times maintain an accurate vertical and horizontal trace of the pre-set line and level profile.

Concrete shall be fed to the machine at a uniform rate and the machine shall be so operated as to produce a compacted mass of concrete. Surfaces shall be substantially free from surface pitting larger than 5 mm diameter.
Where kerb and channel is being placed on steep grades, sufficient means shall be employed for controlling the speed of the extrusion machine to allow the specified density of the concrete to be achieved.

Where work using fixed forms is combined with extruded work and similar concrete mixes are used for both, the concrete in the fixed form sections shall be thoroughly compacted by manual spading and rodding whilst it is being placed to produce a satisfactory compacted mass of concrete.

Transitions between different profiles being constructed under the contract or where it is necessary to join to an existing profile different from that being constructed, shall be made over a five (5) metre length.

7.7 SURFACE FINISH

The kerb and channel shall be rendered and have a steel trowel finish. Rendering of the kerb and channel shall be produced by the application of a cement mortar consisting of one part cement, two parts fine aggregate, mixed with sufficient water to produce a mix of suitable consistency. The mortar is applied by the extrusion machine to the newly formed kerb and channel surface as soon as the surface emerges from the machine.

The surface shall be consistently smooth and of uniform colour.

HP The colour of the rendering coat (if specified) is to be confirmed with the Superintendent.

7.8 JOINTS

Distinct and complete transverse joints shall be made at intervals not exceeding 2.5 metres. For extruded kerb and channel this shall be done by a method which does not damage or distort the adjacent surfaces; for kerb constructed using fixed forms, templates shall be removed as soon as practicable after finishing the work. The guillotine (for extruded work) or template (for fixed form work) shall cut between 40% and 70% of the area of the section. In both cases the resultant slot in the edging shall be tooled to a depth of 20 mm to produce a neat groove not less than 5 mm wide on the exposed surfaces, following which a vertical cut shall be made through the base of the groove a depth of not less than 50 mm from the surface of the section.

Steel templates of thickness 3 mm, cut true to the Frankston City Council standard drawings SD 401-406 and SD407-409 shall be used.

Joints shall be truly square and vertical and edges of joints will be neatly finished.

Joints shall correspond as to location on opposite sides of road pavement.

7.9 VEHICULAR AND PRAM CROSSINGS

The Contractor shall construct vehicular crossings and perambulator crossings in accordance with Frankston City Council Standard Drawings SD 310A and SD 320 respectively where shown on the plans or as directed by the Superintendent.

The Contractor shall make provision for vehicle access to properties during the progress of the work by way of temporary bridging of new concrete work and by trimming and surfacing of entrances adjacent to vehicle crossings after same are open to traffic.

7.10 HOUSEHOLD DRAINS

Unless otherwise specified, existing household drains which are not connected to underground stormwater drains shall be altered as necessary and connected through the kerb to drain into the channel in accordance with Frankston City Council Standard Drawing SD 245 using approved kerb entry adaptors.

Provision shall be made for future household drains at the lower side of vacant allotments or as shown on the drawings or as directed by the Superintendent.

Where household drain outlets connect to the underground drainage system behind the kerb and channel, they shall be marked as soon as the kerb and channel has been placed, and before the rendering has attained its set, by marking in the face of the kerb at a point 90° to the outlet at the building line a 50 mm dia circle inscribed with the letters “H/D” (40 mm high and 25 mm wide groove 6 mm wide and 6 mm deep).

7.11 SERVICE CONDUIT MARKERS

The position of all water service, gas, telephone and electricity conduits shall be inspected and approved before concrete kerb and channel is placed.

As soon as the kerb and channel has been placed, and before the rendering has attained its set, the Contractor shall mark in the face of the kerb a 50 mm dia circle inscribed with a letter (40 mm high and 25 mm wide groove 6 mm wide and 6 mm deep) indicating the type of conduit - “W” for water, “G” for gas, “T” for telephone and “E” for electricity.

Where no kerb and channel is used, their location will be marked by concrete indicator posts located at the property boundary.

7.12 CURING AND PROTECTION OF CONCRETE

(a) Curing

Immediately following the finishing of the surface, the Contractor shall evenly spray or paint on to the new surfaces, an approved coloured membrane curing compound at not less than the manufacturer’s recommended rates.

At the end of the curing period, the kerb and channel shall provide a dense, hard wearing surface.

(b) Protection of Concrete

All concrete shall be adequately protected from damage by pedestrians, animals, vehicles, rain or any other cause.

The Contractor shall give 24 hours notice to the owner concerned in any property vehicle crossing that no motor vehicle will be permitted to cross over the concrete until at least four (4) days after the completion of the laying of the concrete and, if such vehicle is over 1.5 tonnes in weight, until at least seven (7) days after laying.

The Contractor shall be held responsible for any damage to concrete kerb and channel during the Contract period.

7.13 BACKFILLING

After the concrete has set sufficiently and not sooner than three days after placing, the spaces on both sides of the kerb and channel shall be refilled with sound material, which shall be thoroughly compacted in layers not exceeding 150 mm thickness, the whole being left in a neat and workmanlike manner.