

**SECTION 461****CONCRETE COLLAR AT CONCRETE CULVERT EXTENSION****INDEX****461.01 SCOPE****461.02 MATERIALS****461.03 CONSTRUCTION****461.04 MEASUREMENT FOR PAYMENT****461.05 BASIS FOR PAYMENT****461.01 SCOPE**

This specification deals with the provision of a cast in place concrete collar to secure an extension to an existing concrete culvert when using pipe other than concrete pipe as the extension.

461.02 MATERIALS

The collar shall consist of concrete having a strength of not less than 25MPa at 28 days, a maximum particle size of 20mm, and a maximum slump of 60mm.

Backfill for use within 300mm of the completed sides and top of the concrete collar, shall consist of a select backfill material consisting of a well graded other material having no more than 10% passing the 0.075mm sieve with a maximum particle size not exceeding 75mm.

461.03 CONSTRUCTION

See Form 1220 "Typical Concrete Collar at Concrete Culvert Extension", for details of the required collar.

The Contractor shall provide such unwatering as is necessary in order that the collar be constructed as required.

Under the end of the concrete pipe to be extended, the ground shall be excavated in order to facilitate the placing of the concrete collar. The excavation shall extend 150mm back from the end, 150mm in front of the end, and in other material ground shall be to a depth of 300mm below the underside of the culvert. If the pipe is resting on solid rock, then any loose rock shall be removed down to 300mm below the underside, or to solid rock, whichever is less.

Surfaces of the new and existing pipe, to which concrete will be in contact, shall be thoroughly cleaned of all dirt and grease.

Where possible, the extension pipe shall be placed in the end of the concrete pipe so that approximately 100mm of the extension pipe lies within the end of the concrete pipe.

Formwork shall be placed so as to provide at least the minimum dimensions for the collar as shown on Form 1220 "Typical Concrete Collar at Concrete Culvert Extension". Formwork shall be supplied by the Contractor and shall conform to the requirements of Section 907 "Formwork and Falsework".

Concrete shall be placed and cured in accordance with the requirements of Section 904 "Concrete Structures".

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Select Backfill material shall be placed simultaneously on all sides of the collar in layers not exceeding 200mm in thickness. Each layer shall be thoroughly compacted to a compaction of not less than 95% of standard proctor density before a further layer is placed.

Backfilling, with select backfill, shall be continued until the collar has not less than 300mm of select backfill cover.

461.04 MEASUREMENT FOR PAYMENT

Measurement for payment will be based on the number of required concrete collars placed, regardless of the sizes of the various collars.

461.05 BASIS FOR PAYMENT

Payment at the contract unit price for each concrete collar shall be compensation in full for all labour, materials and use of equipment to: clean the pipe surfaces which will be in contact with the collar, supply and place formwork, supply and place concrete, remove the formwork, cure the concrete, and to provide such unwatering as is required.

Select backfill material shall be paid for in accordance with Section 206 "Grading of Cuts", Section 207 "Borrow" or Section 310 "Use of Pits, Quarries or Stockpiles for Production of Materials Supplied by the Contractor as the case may be, but the additional requirements for the placing and compaction of the select backfill, as stipulated in this specification, shall be considered compensated for the contract price for concrete collar at concrete culvert extension.

The excavation required in order to place the collar around the culvert shall be paid for in accordance with Section 403 "Excavation for Foundations.