GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Transportation and Works
Highway Design Division

SECTION 540

CAST-IN-PLACE CONCRETE MEDIAN BARRIER

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540.01 SCOPE

This item consists of the construction of concrete median barrier using the slipforming method, in accordance with the plans and specifications.

540.02 MATERIALS

540.02.01 Concrete

Concrete shall meet the requirements outlined in Section 904 of the Specifications Book, Concrete Structures.

The concrete shall have a 28 day compressive strength of 40 MPa, with a minimum cement content of 380 kg per cubic metre. The maximum size of coarse aggregate shall be 20 mm. The entrained air content shall be 6.5% (plus 1% or minus 0.5%). The slump of the concrete used shall be less than 40mm.

540.03 CONSTRUCTION

540.03.01 Concrete Mix Design

The Contractor shall submit to the Engineer for approval a proposed mix design 14 days prior to its use.

540.03.02 Concrete Placement

The concrete for the median barrier shall be placed by the use of an approved slipform paver. The slip form shall be cleaned and oiled with an approved form oil prior to each use. The vibration technique used will be such as to ensure the concrete in place shall be void of air pockets.

Manpower shall be scheduled and truck mixers sequenced so as to provide for uniform placing of the concrete with a minimum of interruption.

Precautions shall be taken to prevent any damage to the pavement by the slipform paver, truck mixers or other equipment. Damaged surfaces shall be repaired by the Contractor at his expense.

The surfaces of the median barrier shall not vary by more than 5mm when measured with a 3m straight edge.
Concrete spilled on the highway shall be removed and the highway cleaned to the satisfaction of the Engineer.

540.03.03 Finishing

Hand finishing shall be kept to a minimum. Repair of air holes less than 15mm in diameter will not be required. Care shall be taken in any hand finishing that may be required to maintain the correct alignment and grade.

A textured broom or brush finish shall be applied to the finished surface. Hand finishing shall be done with a magnesium or wood float but shall be kept to a minimum.

540.03.04 Curing

White membrane curing compound, if used, shall be applied immediately after finishing. Curing shall consist of two spray applications of the compound with the second application applied in a direction perpendicular to the first.

540.03.05 Contraction Joints

Contraction joints shall be saw cut with an approved power saw, as soon as the concrete has hardened sufficiently to permit sawing without excessive ravelling and before shrinkage cracking takes place. Uncontrolled shrinkage cracks that occur shall be subject to the approval of the Engineer. If not acceptable, a section of concrete of not less than 1m surrounding the crack shall be removed and replaced.

Contraction joints shall be sawed to a minimum depth of 50mm and shall be spaced uniformly at a distance of not exceeding 6m, unless otherwise specified on the plans or specifications.

Contraction joints shall be cut neatly in a vertical plane.

540.03.06 Construction Joints

Vertical construction joints at the ends of slipformed barrier segments shall include a vertical key in the joint surface as shown on the plans or approved by the Engineer.

540.04 MEASUREMENT FOR PAYMENT

The quantity to be measured for payment shall be the number of linear metres of concrete median barrier constructed in accordance with the plans and specifications, measured to the nearest tenth of a metre.

540.05 BASIS OF PAYMENT

Payment at the contract price per lineal metre of concrete barrier median shall be compensation in full for all plant, labour, materials and equipment use to, supply and place concrete with an approved slipform paver to the line and grade established by the Engineer, cure the concrete, and finish the concrete.