

FORM 405



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

SECTION 405

TEMPORARY DIVERSION OF STREAMS

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405.01 SCOPE

This specification covers the requirements for the temporary diversion of streams. Temporary stream diversions are often needed for example, where it is required that a culvert be installed in the dry.

405.02 ENVIRONMENTAL REQUIREMENTS

Contractors are reminded that the requirements of Division 8 apply to all work associated with this specification.

405.03 CUTTING TREES AND BRUSH FOR TEMPORARY DIVERSION

The proposed temporary diversion site shall be cut to the limits designated by the Engineer. This work shall be carried out and paid for in accordance with the provisions of Section 202 "Clearing".

405.04 GRUBBING FOR TEMPORARY DIVERSION

The Contractor shall only grub within the limits designated by the Engineer.

In order to minimize siltation into the temporary stream diversion, grubbing shall initially be confined to within the limits of from one proposed stream bank to the other, leaving wide ungrubbed strips adjacent to each bank. After the temporary diversion has been abandoned the balance of the required grubbing may be carried out.

The grubbing shall be carried out and paid for in accordance with Section 203 "Grubbing".

405.05 PREPARATION OF CHANNEL FOR STREAM DIVERSION

The channel shall be excavated to the lines, cross sections and grades designated by the Engineer. The channel shall be excavated in the dry. The Contractor shall carry out the work in such a way so as to cause a minimum of disturbance and siltation to the water course. The channel shall be lined with polyethylene sheeting of suitable strength.

In order to minimize siltation, excavated material shall not be placed adjacent to the banks.

The stream shall not be diverted until the channel has been prepared to the satisfaction of the Engineer.

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When the diversion is made, the old channel shall be closed off with sand bags, or such other non-silting, non erodible and impervious material which is satisfactory to the Engineer.

Care shall be taken to prevent fish being stranded in closed off diversions.

The Contractor shall minimize the crossing of water courses by heavy equipment. The same crossing place shall be used for such crossings as are unavoidable. At the completion of operations, the crossing place shall be put back to its original condition.

405.06 CLEAN UP REDUNDANT CHANNEL

After the stream has been diverted to the new culvert or water course, and the temporary diversion is no longer required, then that portion of the temporary diversion that will not be covered by fill, shall be graded and trimmed to sightly proportions and stabilized as directed by the Engineer including sodding and/or hydroseeding of previously undisturbed areas.

405.07 MEASUREMENT FOR PAYMENT

Measurement for payment shall be by the number of cubic metres of excavated material as shown between the position of the ground lines as cross sectioned after grubbing operations have been completed, and the completed and accepted excavation lines. Material excavated outside of the required limits will not be included in measurement for payment. The volume of the excavation to be computed by the average end area method of computation or as wedges or pyramids, as the case may be, when terminating at grade points.

During excavation operations whenever the character of material changes from Other Material to Solid Rock, then the Contractor shall strip the area, within the limits, of all overlying material, and notify the Engineer in order that proper measurements for cross sections may be made. No allowance will be made for material excavated before such measurements or cross sections have been made.

For boulders present in Other Material; the three maximum rectilinear dimensions of boulders, actually excavated, will be measured and the volume of each so determined. Volumes of the boulders which are equal to, or greater than, zero decimal five cubic metres will be included for payment as rock.

405.08 BASIS OF PAYMENT

Payment shall be at the contract price per cubic metre for either Excavation for Temporary Diversion of Streams, Solid Rock, hauled 1 km or under; or Temporary Diversion of Streams, Other Material, hauled 1 km or under, as the case may be. Such payment shall be compensation in full for all labour, materials and use of equipment to: excavate the material from within the required horizontal alignment, cross section and profile, load and transport the material up to the 1 km freehaul limit and place and compact the material in a fill, supply and place such sand bags or other items necessary to divert the water to the temporary diversion, divert the stream to the diversion, divert the stream to the new culvert or water course after the permanent features have been put in place, and to grade and trim the temporary diversion channel to sightly proportions after it is no longer required including and sodding or hydroseeding of previously undisturbed areas.

Where the Engineer requires that excavated materials be hauled in excess of the 1 km freehaul limit before being placed, additional payment for overhaul will be made in accordance with Section 215 "Overhaul of Excavation Materials".

Should the contract not include quantities for "Excavation for Temporary Diversion of Streams, Solid Rock", then payment for that quantity shall be at the contract price for "Ditching Solid Rock".

Likewise, should the contract not include quantities for "Excavation for Temporary Diversion of Streams, Other Material", then payment for that quantity shall be at the contract price for "Ditching Other Material".