

DIVISION 2
SPECIFICATIONS FOR GRADING
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SECTION 201

CLEARING AND GRUBBING

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201.01 DESCRIPTION

Clearing and grubbing shall consist of the removal and disposal of all trees, brush, logs, surface boulders, stumps, roots, matted roots and other vegetation from within areas delineated by the Owner's Representative.

201.02 PERMITS AND AUTHORIZATION

The Contractor is required to obtain permits to cut trees and/or burn brush. Application(s) for a permit must be made to the local Forest Management District Office of the Department of Fisheries, Forestry and Agriculture. Copies of all permits must be provided to the Owner's Representative prior to commencing work.

Should the Contractor wish to burn brush, then prior permission must first be obtained from the Department of Fisheries, Forestry and Agriculture as well as the local municipality.

Tires are not to be used in burning operations. Additionally, burning operations in residential areas should be carried out in a manner where airborne fire emissions will not impact these properties.

201.03 CLEARING AND GRUBBING OPERATIONS

Areas in which clearing and grubbing are to be carried out will be either staked on the ground or marked with flagging tape beforehand by the Owner's Representative.

Where clearing and grubbing operations are required near a watercourse or water body, the Contractor shall ensure that a minimum 15 metre "No Grub" zone is left between the

watercourse or water body and adjacent work area. The "No Grub" buffer shall be clearly marked in the field by the Owner's Representative prior to any clearing or grubbing so that the area is visible to heavy equipment operators.

The cutting of trees shall not commence until the Contractor has obtained a cutting permit. The Department, should it so wish, may permit the Contractor to dispose of any timber cut on Crown Land to their advantage providing the requirements of the Lands Act, with respect to royalties, etc., are met.

Where timber to be cleared and grubbed is on land belonging or leased to private individuals, crown corporations or companies, the timber does not become the property of the Contractor. The Contractor must make prior arrangements with landowners or lessee(s) for the disposal of the timber.

The Contractor shall not proceed with any burning operations without securing a permit to burn brush from the Department of Fisheries, Forestry and Agriculture. The Contractor shall take all necessary precautions to guard against damage to surrounding timber and shall assume all liability for all claims that may arise from any such damage.

Surface boulders, regardless of their size, shall be considered part of the clearing and grubbing operation. All surface boulders shall be removed and disposed of along with the other clearing and grubbing debris.

Clearing and grubbing debris shall be disposed of in a manner approved by the Owner's Representative. The Contractor shall haul away and dispose of all clearing and grubbing debris to an approved waste disposal area. The approved waste disposal area shall be provided by the Contractor at their own expense. Clearing and grubbing debris shall be trimmed to slighty proportions.

Where clearing and grubbing takes place in preparation for a borrow area outside of the right of way then clearing and grubbing debris may be pushed upon adjacent land provided that in so doing the debris is not pushed onto land belonging to others, or pushed in or around stands of mature trees.

Where a significant quantity of topsoil exists and as directed by the Owner's Representative, the Contractor shall stockpile topsoil separately from other material for possible rehabilitation work.

201.04 MEASUREMENT FOR PAYMENT

Measurements will be made of the horizontal area actually cleared and grubbed from within the area staked out by the Owner's Representative. These measurements shall be computed to obtain the area in hectares, measured to three decimal places.

Clearing and grubbing beyond the limits staked will not be measured for payment.

201.05 BASIS OF PAYMENT

Payment at the contract price for Clearing and Grubbing shall be compensation in full for all labour, materials and equipment use to carry out the work indicated in this specification or in any way connected with these operations.

No payment, other than that provided for in the contract price for Clearing and Grubbing, will be made for topsoil and surface boulders removed by clearing and grubbing operations, or for any haulage involved in clearing and grubbing debris disposal. The cost to acquire an approved waste disposal area, as required, is deemed incidental to the work.

SECTION 202

CLEARING

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- 202.02 ENVIRONMENTAL PERMITS AND AUTHORIZATION**
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- 202.05 BASIS OF PAYMENT**

202.01 DESCRIPTION

Clearing shall consist of the cutting of trees and brush and the removal, piling and burning or other disposal of all trees, brush and logs from within areas designated by the Owner's Representative. However, clearing will not normally be performed within areas selected as borrow pits and quarries, unless otherwise directed by the Owner's Representative.

202.02 ENVIRONMENTAL PERMITS AND AUTHORIZATION

The Contractor is required to obtain permits to cut trees and/or burn brush. Application(s) for a permit must be made to the local Forest Management District Office of the Department of Fisheries, Forestry and Agriculture. Copies of all permits must be provided to the Owner's Representative prior to commencing work.

Should the Contractor wish to burn brush, then prior permission must first be obtained from the Department of Fisheries, Forestry and Agriculture as well as the local municipality.

Tires are not to be used in burning operations. Additionally, burning operations in residential areas should be carried out in a manner where airborne fire emissions will not impact these properties.

202.03 CLEARING OPERATIONS

Areas in which clearing is to be carried out will be identified by flagging tape beforehand by the Owner's Representative.

Clearing operations shall not commence until the Contractor has obtained a cutting permit.

If so ordered by the Owner's Representative, certain trees within the right of way shall be preserved. Underbrush, down timber, snags and roots shall be removed from the vicinity of such preserved trees to a cleared space within the right of way and then burned or disposed of. Where clearing operations are required near a watercourse or water body, the Contractor shall ensure that a minimum 15 metre buffer zone is left between the watercourse or water body and adjacent work area unless otherwise directed by the Owner's Representative. The buffer shall be clearly marked in the field by the Owner's Representative prior to any clearing so that the area is visible to heavy equipment operators.

All tree branches extending into the right of way, which hang within six metres of the ground, shall be cut off close to the trunk in a neat and competent manner.

No trees shall be cut down outside the limits of the right of way except any tree or trees considered unsafe by the Owner's Representative and so marked for cutting by the Owner's Representative.

No timber, brush or logs shall, in any event, be piled upon adjacent lands unless authority is first obtained from the Owner's Representative.

The limits of the right of way shall be left in proper shape for fencing.

Trees cut within the right of way and not required for Departmental use will become the property of the Contractor.

The Contractor shall be permitted to use, for construction purposes under the contract, any timber cut on the right of way provided that the sizes and quality of such timber meets the requirements of the plans and specifications and is acceptable to the Owner's Representative.

The Contractor shall dispose of all brush and logs not suitable for salvage. Disposal shall be by burning, or by removal and disposal in an approved waste disposal area provided by the Contractor at their own expense.

The Contractor shall not proceed with any burning operations during the fire season without securing the permission of the local Forest Management District Office of the Department of Fisheries, Forestry and Agriculture.

The Contractor shall take all necessary precautions to guard against damage to surrounding timber and shall assume all liability for claims that may arise from any such damage.

202.04 MEASUREMENT FOR PAYMENT

Measurement will be made of the horizontal area actually cleared from within the area flagged by the Owner's Representative. These measurements shall be computed to obtain the area in hectares, measured to three decimal places.

Clearing beyond the limits identified will not be measured for payment.

202.05 BASIS OF PAYMENT

Payment at the contract price for clearing shall be compensation in full for all labour, materials and equipment use to carry out the work indicated in this specification and shall include all costs involved in obtaining and conforming to the conditions of required permits, together with either burning the debris, or obtaining an approved waste disposal area and hauling away and disposing of the debris in the waste disposal area.

SECTION 203

GRUBBING

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- 203.01 DESCRIPTION**
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203.01 DESCRIPTION

Grubbing shall consist of the removal and disposal of all stumps, roots, surface boulders, embedded logs, debris, matted roots, and other vegetation from areas designed to be grubbed, and shall be performed by the Contractor on the sites of excavation and embankments together with other areas not affected by grading operations as directed by the Owner's Representative. However, grubbing will not normally be performed on areas selected as borrow pits and quarries unless otherwise directed by the Owner's Representative.

Where directed by the Owner's Representative, trees, stumps and brush shall be cut even with the ground in order not to disturb the natural matting and this "close cutting" will be paid for as grubbing.

203.02 GRUBBING OPERATIONS

Areas in which grubbing is to be carried out will be staked on the ground beforehand by the Owner's Representative. Under fills, areas to be grubbed will normally be determined in accordance with the spirit of the guidelines on Form 1208.

Where grubbing is required near a watercourse or waterbody, the Contractor shall ensure that a minimum 15 metre "No Grub" zone is left between the watercourse or water body and adjacent work area. The "No Grub" buffer area shall be clearly marked in the field by the Owner's Representative prior to any grubbing so that the area is visible to heavy equipment operators. Where possible, ditch waters shall be directed to existing vegetation at least 30 metres from watercourse crossing locations rather than directly discharging to the watercourse.

Surface boulders, regardless of their size, shall be considered as part of grubbing debris. All surface boulders shall be removed and disposed of along with the other grubbing debris, except such boulders which in the opinion of the Owner's Representative can be incorporated in the project.

Grubbing shall be disposed of in a manner approved by the Owner's Representative. The Contractor shall haul away and dispose of the grubbing debris in an approved waste disposal area. The approved waste disposal area shall be provided by the Contractor at their own expense. Grubbing debris shall be trimmed to sightly proportions.

Grubbing operations as directed by the Owner's Representative shall be carried out for a distance of at least one kilometre in advance of grading operations, excepting where grubbing and excavation are permitted as a joint operation.

203.03 MEASUREMENT FOR PAYMENT

Measurements will be made of the horizontal area actually grubbed or close cut, as required by the Owner's Representative. These measurements shall be computed to obtain the area in hectares, measured to three decimal places.

Grubbing or close cutting beyond the limits staked will not be measured for payment. No payment, other than that provided for in the contract price for grubbing, will be made for topsoil and surface boulders removed by grubbing operations, or for any and all haulage involved in grubbing disposal.

Cross sectioning for purposes of payment for excavated quantities for other items appearing in the contract documents will not be done until grubbing or clearing and grubbing operations in the designated area(s) are completed.

203.04 BASIS OF PAYMENT

Payment at the contract price for Grubbing shall be compensation in full for all labour, materials and equipment use to carry out the work indicated in this specification or in any way connected with these operations.

No payment, other than that provided for in the contract price for Grubbing, will be made for topsoil and surface boulders removed by grubbing operations, or for any haulage involved in debris disposal. The cost to acquire an approved waste disposal area, as required, is deemed incidental to the work.

SECTION 204

GRADING OF FILL

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204.06.02 Basis of Payment for Grading of Fill where the Materials are from Sources provided by the Contractor

204.01 FILL MATERIALS

All material from cuts, excavation for foundation and ditch excavation shall be used in fill construction, provided the material is required to complete fills and the material is suitable for this purpose.

All materials proposed to be incorporated into fills shall be subject to testing by the Owner's Representative to determine their suitability for the portions of the fill in which it is proposed that they be placed.

Only materials approved by the Owner's Representative shall be placed in fills.

Fill material shall not contain frozen lumps, weeds, sod, roots, logs, stumps or any other objectionable matter.

Material from rock cuts and quarries shall be thoroughly fragmented, well graded with fragments of greatest dimension not exceeding 500 millimetres.

Surface boulders and stones larger than 150 millimetres present in Other Material may be placed in fills provided they are placed in accordance with the requirements of this specification.

204.02 PLACING OF FILL

The Contractor shall remove such grubbing and unsuitable material, as the Owner's Representative requires, from the area on which the fill is to be placed. The Owner's Representative shall stake the limits of the toe of the fill. All culverts and drainage structures shall be constructed and no fill material shall be placed in the area until the ground has been inspected and approved by the Owner's Representative.

The Contractor shall construct fills to the lines, grades and cross sections required by the Owner's Representative.

The Contractor shall maintain a minimum 15 metre undisturbed buffer zone between the fill area and watercourses to be crossed until such time that the crossing structure is ready for installation. The Owner's Representative shall determine the width of the buffer strip.

Fill construction shall not be performed when the ground is frozen or when the fill material is frozen or when a blanket of snow prevents proper compaction.

On no account will the Contractor be permitted to construct a core through the fill and complete the fill by side dumping.

Fill material shall be placed and spread in layers of a loose thickness, before compaction, not exceeding 500 millimetres for the full width of the fill. If, in the opinion of the Owner's Representative, this thickness does not respond to compaction methods, the Owner's Representative may order this thickness reduced. The thickness of each successive layer shall be maintained uniform for the full width of the fill. The top surface of each layer shall be suitably sloped with a cross-fall not to exceed 5% in order to shed surplus rainwater. Each layer of the section of the fill under construction at the time shall be brought up to its required grade and properly compacted as herein specified before the succeeding layer is applied.

204.02.01 Construction of Fill Adjacent to Steep Slopes

Where fill is to be placed on a side hill, sloping area, against an existing or new embankment or where fill is to be built one half width at a time, then the slopes, as the case may be, shall be benched in accordance with Form 1206 or as directed by the Owner's Representative. Benches are to be excavated one level at a time and the compacted fill brought up before the next benching level is excavated.

This procedure shall be followed throughout the entire construction of the fill. All suitable material excavated for the benches shall be incorporated and compacted with the new fill material.

204.02.02 Construction of Fill by the Sandwich Method

Embankments may, at the discretion of the Owner's Representative, be constructed by the "sandwich" method. Under this system, alternate layers of materials from Other Material and Rock sources shall be spread and compacted. The Contractor shall direct and organize their excavation forces so that an adequate supply of both materials are available at all times during construction. The upper 500 millimetres of subgrade shall consist of rock fill and all stones larger than 150 millimetres shall be removed from the material comprising the top 300 millimetres of the subgrade.

204.02.03 Special Requirements for Placing Other Material Fill Containing Large Rocks

Surface boulders, removed during grubbing operations or stones larger than 150 millimetres present in Other Material may be used in Other Material fill provided that:

- i.) All boulders or stones larger than 500 millimetres are placed such that there will be at least 2 metres of cover on all sides.
- ii.) All stones larger than 150 millimetres, but less than 500 millimetres in size, shall be kept at least 300 millimetres below subgrade.
- iii.) No two boulders or stones larger than 500 millimetres shall be in contact with each other. All boulders and stones larger than 150 millimetres must be of such shape and placed in such position within the fill that compaction equipment may operate efficiently between the rocks, and close up to all faces of each of the rocks, while successive layers of fill are being placed.
- iv.) The position of each boulder in the embankment shall be such that when resting on a horizontal surface, each boulder shall be in a stable position with the centre of gravity as low as possible.

204.03 FILL COMPACTION

Fill consisting of Other Material shall be compacted to at least 95% of the Standard Proctor Density (ASTM D698) by using approved compaction equipment.

In Rockfill material where Standard Proctor tests cannot be carried out, compaction shall be continued until there is no visible movement of the fill under an approved vibratory compactor which is vibrating. The vibratory compactor shall be of a type designed for fill compaction, weigh at least 9 tonnes and exert a load when vibrating of at least 4.5 tonnes per metre of wheel width.

204.04 FILL CLASSIFICATION

Where materials placed in the fill are from excavations within the highway right of way, or from borrow sources provided by the Department, then the fill materials will be classified as excavation in accordance with Section 205.

However, where the fill is supplied by the Contractor, the material will be classified as either "Rock Fill in Place" or "Other Material Fill in Place". Rock Fill in Place and Other Material Fill in Place shall conform to the physical and other requirements given in Section 310.

204.05 MEASUREMENT FOR PAYMENT

Where materials placed in the fill are from excavations within the highway right of way, or from borrow sources provided by the Department, then measurement for payment will be based on measurements of either volume of excavation or on weight, as given in other sections of this book.

However, for the fill materials supplied by the Contractor; "Rock Fill in Place" and "Other Material Fill in Place", the measurement for payment will be made by either the volume of fill placed, or the weight of fill placed, depending on whether the unit price is given in cubic metres or tonnes.

204.05.01 Volume Measurement for Payment for Fill in Place

The quantity to be measured shall be the number of cubic metres, rounded to the nearest whole number, of fill as shown on the cross section sheets between the position of the ground lines as cross sectioned before the "Fill in Place" material was placed, and the completed and accepted fill lines. Material placed outside of the required chainage limits, shoulders and/or toes of slopes will not be included in the calculations.

The volume of the fill shall 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 fill operations, whenever the fill material as classified in Section 204.04, changes from one type to another, the Contractor shall notify the Owner's Representative so that proper measurements or cross sections may be made.

204.05.02 Weight Measurement for Payment for Fill in Place

Where "Rock Fill in Place" or "Other Material Fill in Place" is to be paid for by the number of tonnes, then such materials shall be weighed on scales. The weighing of materials shall be in accordance with the requirements of Section 501. Only loads certified by the Department personnel as being placed in the works shall be included in the measurement for payment. The weight shall be computed in tonnes, rounded to one decimal place.

Materials placed outside of the required chainage limits, shoulders and toes of slopes will be excluded in computations for quantities.

204.06 BASIS OF PAYMENT

The basis of payment will depend on whether the fill material is from sources provided by the Department or from sources provided by the Contractor.

Where benching of slopes is required as part of the grading of fill operation, no payment shall be made in respect of quantities excavated to form the benches.

204.06.01 Basis of Payment for Grading of Fill where Materials are from Sources provided by the Department

Where the materials placed in the fill are from excavations within the highway right of way or from borrow sources provided by the Department, then no separate payment will be made for the grading of fill. The grading of fill is part of the operation of excavating the material used as fill, and payment at the appropriate contract price for the excavation material, depending on the source and type of material, shall be compensation in full for all labour, materials and equipment use for; excavating, handling, and hauling the excavated material up to 1 kilometre, excavating such slope benches as may be required and placing and compacting both the excavated material and the material excavated from any slope benches in a fill in accordance with the specification for grading of fill.

Excavated material hauled in excess of 1 kilometre before being placed in a fill, at the Owner's Representative instruction, will be compensated for in accordance with Section 215.

204.06.02 Basis of Payment for Grading of Fill where the Materials are from Sources provided by the Contractor

Where the materials placed in the fill are from borrow sources provided by the Contractor, payment shall be at the contract unit price per cubic metre, or per tonne, for either "Supply Rock Fill in Place", or "Supply Other Material Fill in Place", as appropriate. Such payment shall be compensation in full for all labour, materials, equipment use and any other expenses to; provide a pit or quarry, obtain all required permits and approvals, clear, grub, and strip the pit or quarry, excavate the material, handle the material, provide all haulage of the material from the source to the fill, provide provision for weighing (if appropriate), place and compact the fill to the lines, grades and cross sections required, pay any royalties for the material, clean up and provide such other restoration to the pit or quarry as may be required, together with any other work necessary to complete the contract item.

SECTION 205

CLASSIFICATION OF EXCAVATED MATERIALS

Excavated materials shall be classified for the purposes of payment as "Solid Rock", or "Other Material" in conformity with the following:

- a) Solid Rock - shall include all rock, in masses or ledges in their original or stratified bed or position, and all boulders and detached pieces or rock 0.5 cubic metres or greater in measurement which are present in Other Material.
- b) Other Material - shall include all earth, sand, gravel, cemented gravel, clay, hardpan, previously blasted rock and boulders less than 0.5 cubic metres in measurement and all excavated materials not classed as Solid Rock.

However, in those contract documents where quantities appear for items of excavated materials in addition to "Solid Rock" and "Other Material", as defined above, then these excavated materials shall be further classified for the purposes of payment in conformity with the following:

- i.) Rock Borrow - shall mean Solid Rock that is taken from a borrow site.
- ii.) Other Material Borrow - shall mean Other Material that is taken from a borrow area.
- iii.) Unsuitable Material - shall mean Other Material that is not suitable for use in grading of fill operations.
- iv.) Muskeg or Bog - shall mean Other Material consisting of bog and underlying pug together with such tree stumps, roots and vegetation that are present on and in the bog.
- v.) Ditching Solid Rock - shall mean Solid Rock that is taken from ditch excavation.
- vi.) Ditching Other Material - shall mean Other Material that is taken from ditch excavation.

SECTION 206

GRADING OF CUTS

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- 206.06 BASIS OF PAYMENT**

206.01 DESCRIPTION

This work shall include all labour and materials required to carry out all excavation to complete road cuts, roadside ditches, bench excavations and sub-excavations and shall include hauling up to 1 kilometre, handling and incorporation of all suitable materials into fill construction in accordance with Section 204. The work shall also include the hauling up to 1 kilometre, and handling of the unsuitable materials and the trimming of such unsuitable materials along the embankment slopes or elsewhere, all as directed by the Owner's Representative.

The Contractor shall excavate cuts to the grade required by the Owner's Representative. The width and side slopes of all cuts together with roadside ditches shall be constructed to the required cross sections and trimmed to the satisfaction of the Owner's Representative.

No undercutting of slopes within the limits of the theoretical slope lines will be permitted unless all material above the theoretical slope lines is also removed.

Where the quantity of excavation exceeds that required to construct the fills, the surplus material shall be used to widen the fills or otherwise disposed of as directed by the Owner's Representative. Surplus materials not able to be incorporated into the Work shall become the property of the Contractor and disposed of accordingly outside the project limits.

206.02 GENERAL REQUIREMENTS FOR OTHER MATERIAL CUTS

Surface soil and vegetable mold shall be removed when so directed by the Owner's Representative.

The Contractor shall remove stones larger than 150 millimetres in greatest dimension from the top 300 millimetres of subgrade.

206.03 GENERAL REQUIREMENTS FOR ROCK CUTS

All rock cuts shall be excavated and mucked out fully to 300 millimetres below subgrade.

In rock cuts, where pockets which will not drain are formed below the subgrade by blasting, the Contractor shall, at their own expense, provide drainage by ditching to a free outlet and then backfill and compact to 95% of Proctor Density both the pockets and the trench to an elevation 300 millimetres below subgrade. Backfill material shall be broken rock or coarse gravel.

Back slopes shall be carefully scaled down and all rocks and fragments, liable to slide or roll down the slopes, shall be removed to the satisfaction of the Owner's Representative.

Overbreak

Overbreak shall be defined as that portion of rock excavated, displaced or loosened outside and beyond the slopes or grades as established by the Owner's Representative. The exception being such material which occurs as slides, regardless of whether any such overbreak is due to blasting, to the inherent character of any formation encountered, or to any other cause.

All overbreak as so defined shall be removed by the Contractor at their own expense, at the direction of the Owner's Representative. However, at the discretion of the Owner's Representative, overbreak may be used to replace material that would otherwise have to be borrowed. In which case payment to the Contractor for such overbreak used will be the contract price bid per cubic metre for material which would otherwise have to be borrowed.

Excepting that, if in the opinion of the Owner's Representative, the Contractor has exercised due care in the performance of their work, and due to circumstances beyond their control, overbreak has occurred, overbreak within 500 millimetres of the lines of the theoretical cross section will be paid for as solid rock excavation.

Large Blasts

The use of explosives in large blasts, as in seams, drifts, shafts, or pits, is prohibited unless written authority is provided by the Owner's Representative.

When the Department requires that a pole line be moved in order to safeguard it against damage from blasting operations, the Contractor will be required to pay fifty per cent of the labour cost. An estimate of costs will be obtained by the Department before any relocation or moving is done. This clause in no way relieves the Contractor from responsibility for damages.

The Contractor will be responsible for all damages to utility lines and to adjoining property caused by blasting or from any cause whatsoever resulting from any of their operations in connection with their work.

206.04 MATERIAL CLASSIFICATION

Excavated materials will be classified in accordance with Section 205.

206.05 MEASUREMENT FOR PAYMENT

Volumes of all classes of excavation described in Section 206.04 will be measured in excavation and computed in cubic metres rounded to the nearest whole number. Measurements shall be of the actual amount of material moved only, except as otherwise provided in this specification.

The quantity to be measured shall be the number of cubic metres of excavated material as shown on the cross section sheets between the original position of the ground lines as cross sectioned after grubbing operations have been completed (or when grubbing is to be removed as part of Other Material Excavation, or Unsuitable Material Excavation, the original position of the ground lies on top of the grubbing), and the completed and accepted excavation lines. The volume of this excavation is 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.

For boulders present in Other Material, the three maximum rectilinear dimensions of boulders, actually moved, will be measured and the volume of each so determined. Only individual boulders which are 0.5 cubic metres or greater in volume will be included for payment as "Solid Rock".

During excavation operations whenever the character of material changes from one type to another, as classified in Section 205, then the Contractor shall strip the area, within the

slopes, of all overlying material, and notify the Owner's Representative in order that proper measurements or cross sections may be made. No allowance will be made for material excavated before such measurements or cross sections have been made.

Where the Owner's Representative instructs that cuts be widened for the purposes of providing borrow, then the demarcation between quantities measured as "Other Material" and "Other Material Borrow", or "Solid Rock" and "Quarried Rock", as the case may be, shall be the theoretical face of cut line given by the cross sections. For rock cuts widened to provide "Quarried Rock", there will be no overbreak allowed for in the measurement of "Solid Rock".

Large rock fragments which are too large to be incorporated into the fill shall be measured and their volumes subtracted from the cross section volumes. Calculations for volume of large rock fragments shall be the product of the three maximum rectilinear dimensions of the fragments.

206.06 BASIS OF PAYMENT

Payment shall be at the contract unit price per cubic metre for either "Solid Rock", "Other Material", or "Unsuitable Material", as the case may be, hauled 1 kilometre or under, except as otherwise provided in Section 206.03.

However should the contract not include quantities for "Muskeg or Bog", then all required excavation of Muskeg or Bog will be paid for at the contract price for "Unsuitable Material".

Should the contract not include quantities for "Unsuitable Material" then all required excavation for Muskeg or Bog will be paid for at the contract price for "Other Material".

Should the contract not include quantities for "Other Material", then all required excavation for Other Material will be paid for at the contract price for "Unsuitable Material".

Should the contract not include quantities for "Ditching Solid Rock", then all required excavation for Ditching Solid Rock will be paid for at the contract price for "Solid Rock", and vice versa.

Should the contract not include quantities for "Ditching Other Material", then all required excavation of Ditching Other Material will be paid for at the contract price for "Other Material", or vice versa.

Such payment shall be full compensation for all work herein described together with the labour and materials required for excavating, handling, hauling up to 1 kilometre and

placing and compacting in a fill as described in Section 204, or placing and shaping up in a disposal area as required.

Where the Owner's Representative requires that excavation material be hauled in excess of 1 kilometre, additional payment for overhaul will be made in accordance with Section 215.

SECTION 207

BORROW

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207.01 SCOPE

This specification concerns borrow where the Department supplies the material source.

However, where the Contractor is required to supply the source of material, as in contract items such as, "Supply Rock Fill in Place" or "Supply Other Material Fill in Place", then the requirements are covered separately in Section 310.

207.02 PERMITS

Approval by the Department of Industry, Energy and Technology is required for the establishment of borrow sites outside of the highway right of way by way of a quarry permit or quarry lease.

207.03 DESCRIPTION

When sufficient quantities of material suitable for highway fills are not obtainable from the various excavations required for the construction of the highway, then the Owner's Representative will authorize the provision of borrow material to be obtained from borrow sites as the Owner's Representative requires.

This work shall include all materials and labour required to excavate borrow materials, hauling up to 1 kilometre, handling and incorporation of the materials into fill construction in accordance with Section 204.

207.03.01 Delays and Provision of Borrow Sites

Where borrow sites are located outside the limits of the right of way, they will be provided and paid for by the Department.

Before the Department directs the Contractor to obtain borrow from a particular area, the Department will make effort to determine the suitability of the material. However, if after borrow operations have begun, the Department determines the material is no longer suitable, the borrow area may no longer be used to obtain material.

In the event the Contractor is delayed while another borrow site is being obtained, the Department will not assume responsibility for the first 30 days of such a delay and the Contractor shall indemnify and save harmless the Minister from all suits and actions for damages resulting from the first 30 days of the delay. The Department will consider extending the Contract Time for such reasonable time as the Owner may decide in consultation with the Contractor.

207.03.02 Siting of Borrow Sites

Borrow pits and quarries shall be located and confined to such limits as the Owner's Representative may direct.

Where borrow sites are necessary outside the highway right of way, the borrow site shall be subject to all terms and conditions of the quarry permit or lease issued by the Department of Industry, Energy and Technology. A buffer strip of 200 metres shall be maintained between the highway right of way and the borrow site. Any trees within the buffer strip shall not be disturbed or damaged.

Upon completion of the borrow operation, the borrow site shall not be subject to ponding of water. The Contractor shall ensure that the borrow site is free draining.

All access roads to the borrow site shall be bridged or culverted where watercourses are crossed.

207.03.03 Operation of Borrow Sites

The Contractor shall clear and grub the borrow site before excavation begins, without causing disturbance or damage to the surrounding trees.

The Contractor shall be responsible for all damages to utility lines and adjoining property caused by blasting or from any cause whatsoever resulting from any of their operations in connection with the work.

All available topsoil or organic matter which overlies the borrow site shall be stockpiled without causing disturbance or damage to the surrounding trees.

Trees cut within the borrow area and not required for Departmental use will become the property of the Contractor.

Any unwatering necessary in the borrow area shall conform to the requirement of Section 180.

207.03.04 Abandonment and Rehabilitation

Before closure, the borrow site shall be trimmed and left neat and regular with side slopes conforming to the requirements set forth in the quarry permit or quarry lease issued by the Department of Industry, Energy and Technology or as directed by the Owner's Representative.

In all borrow operations, excavation faces shall be rehabilitated in accordance with the terms and conditions of the quarry permit or quarry lease, or sloped to the satisfaction of the Owner's Representative, as applicable.

Any available topsoil or organic material stockpiled previously shall be spread over the slopes to assist in revegetation. Where possible, borrow sites shall be hand seeded with a clover and hayseed mixture.

Waste material shall be disposed of in accordance with Division 8.

After completion of the operation or during periods of winter shutdown, the access road shall be ditched or barriers erected to prevent vehicular access unless instructed otherwise by the Owner's Representative. Earth barriers shall be graded and trimmed to slight proportions.

207.04 MATERIAL CLASSIFICATION

Borrow materials will be classified as either "Solid Rock", "Rock Borrow", "Other Material", or "Other Material Borrow" in accordance with Section 205.

207.05 MEASUREMENT FOR PAYMENT

Measurement for payment will only include measurement of quantities that are required by the Owner's Representative to complete the Work.

Large rock fragments too large to be incorporated into the fill shall be measured and their volumes subtracted from the final cross section volumes. Calculations for volume of large rock fragments shall be the product of the three maximum rectilinear dimensions of the fragments.

Payment by Volume

For borrow materials described in Section 207.04, that are to be paid for by the volume of borrow material, then such materials shall be measured in cubic metres rounded to the nearest whole number.

The quantity to be measured shall be the number of cubic metres of excavated material as shown on the cross section sheets between the original position of the ground lines as cross sectioned after grubbing operations have been completed, and the completed and accepted excavation lines. The volume of this excavation will 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.

Payment by Weight

For borrow materials, described in Section 207.04, that are to be paid for in terms of the number of tonnes, then such materials shall be weighed on scales. The weighing of materials shall be in accordance with the requirements of Section 501. Only loads certified by the Department personnel as being placed in the works shall be included in the measurement for payment. The weight shall be computed in tonnes, rounded to one decimal place.

207.06 BASIS OF PAYMENT

Where the contract includes quantities for "Rock Borrow", then all required excavation of solid rock from borrow areas will be paid for at the contract price for "Rock Borrow".

However, should the contract not include quantities for rock borrow, then all required excavation of solid rock from borrow sites will be paid for at the contract price for "Excavation Hauled 1 kilometre or Under, Solid Rock".

Where the contract includes quantities for "Other Material Borrow", then all required excavation of other material from borrow areas will be paid for at the contract price for "Other Material Borrow".

However, should the contract not include quantities for other material borrow, then all required excavation of other material from borrow areas will be paid for at the contract price for "Excavation Hauled 1 kilometre or Under, Other Material".

Payment shall be at the contract unit price per cubic metre, or per tonne, for either "Solid Rock", "Rock Borrow", "Other Material" or "Other Material Borrow", as the case may be, hauled 1 kilometre or under. Such payment shall be full compensation for all work herein described together with all materials, labour, and equipment use required to carry out excavating, handling, provision for weighing (if appropriate), hauling up to 1 kilometre and placing and compacting in a fill as described in Section 204.

However, clearing and grubbing shall be paid for separately in accordance with Section 201. Should the contract not include quantities for "Clearing and Grubbing", then all clearing and grubbing work will be paid for at the contract price for "Clearing" and "Grubbing", as appropriate.

Where the Owner's Representative requires that borrow material be hauled in excess of 1 kilometre, payment for overhaul will be made in accordance with Section 215.

SECTION 208

EXCAVATION OF DITCHES

INDEX

- 208.01 DESCRIPTION**
- 208.02 GENERAL REQUIREMENTS FOR ROCK CUTS**
- 208.03 MATERIAL CLASSIFICATION**
- 208.04 MEASUREMENT FOR PAYMENT**
- 208.05 BASIS OF PAYMENT**

208.01 DESCRIPTION

This work shall include labour and materials required to carry out all excavation required to complete roadside ditches and shall include hauling up to 1 kilometre, handling and incorporation of all suitable materials into fill construction in accordance with Section 204. The Contractor shall excavate the ditches to the grade required by the Owner's Representative.

The width and side slopes of all roadside ditches shall be made true to the required cross sections and trimmed to the satisfaction of the Owner's Representative.

To reduce siltation resulting from roadside drainage, the Contractor shall, where possible, terminate roadside ditches a minimum of 30 metres from any watercourse or waterbody or at a point designated by the Owner's Representative. This will allow roadside drainage water to filter through a vegetated area prior to entering a watercourse or water body.

Where the quantity of excavation exceeds that required to construct the fills, the surplus shall be used to widen the fills or otherwise disposed of as directed by the Owner's Representative.

208.02 GENERAL REQUIREMENTS FOR ROCK CUTS

Overbreak shall be defined as that portion of rock which is excavated, displaced or loosened outside and beyond the back slopes of the ditches as established by the Owner's Representative, with the exception of such material which occurs as slides, regardless of whether any such overbreak is due to blasting, to the inherent character of any formation encountered, or to any other cause.

All overbreak as so defined shall be removed by the Contractor at their own expense. However, at the discretion of the Owner's Representative, overbreak may be used to replace material that would otherwise have to be borrowed. In which case payment to the Contractor for such overbreak used will be the contract price bid per cubic metre for material that would otherwise have to be borrowed.

Excepting that if in the opinion of the Owner's Representative, the Contractor has exercised due care in the performance of their work and due to circumstances beyond their control overbreak has occurred, overbreak within 500 millimetres of the lines of theoretical back slopes and within 300 millimetres of the theoretical ditch bottom will be paid for as solid rock excavation.

The use of large blasts is prohibited unless the Contractor receives written authority of the Owner's Representative. The Contractor will be responsible for all damages to utility lines or to adjoining property caused by blasting or from any cause whatsoever resulting from any of their operations in connection with their work.

When the Department requires that a pole line be moved in order to safeguard it against damage from blasting operations, the Contractor will be required to pay fifty percent of the labour cost. An estimate of costs will be obtained by the Department before any relocation or moving is done. This clause in no way relieves the Contractor from responsibility for damages.

208.03 MATERIAL CLASSIFICATION

Excavated materials will be classified in accordance with Section 205.

208.04 MEASUREMENT FOR PAYMENT

Volumes of all classes of excavation described in Section 208.03 will be measured in excavation and computed in cubic metres rounded to the nearest whole number. Measurements shall be of the actual amount of material moved only, except as otherwise provided in this specification.

The quantity to be measured shall be the number of cubic metres of excavated material as shown on the cross section sheets between the elevation of the edge of the subgrade shoulder and the theoretical neat lines of the ditches as shown on Form 1205.

These quantities shall be calculated from cross sections taken after grubbing operations have been completed.

If the ditches are widened to provide a source of material for fills, then the materials excavated from areas outside of the ditches as shown on typical cross sections will be paid for under Section 207.

For boulders present in Other Material, the three maximum rectilinear dimensions of boulders, actually moved, will be measured and the volume of each so determined. Only individual boulders which are 0.5 cubic metres or greater in volume will be included for payment as "Solid Rock".

Large rock fragments which are too large to be incorporated into the fill shall be measured and their volumes subtracted from the cross section volumes. Calculations for volume of large rock fragments shall be the product of the three maximum rectilinear dimensions of the fragments.

208.05 BASIS OF PAYMENT

Payment shall be at the contract unit price per cubic metre of either "Ditching Solid Rock", or "Ditching Other Material", as the case may be, hauled 1 kilometre or under, except as otherwise provided in Section 208.02.

However, should the contract not include quantities for "Ditching Solid Rock", then all required excavation of "Ditching Solid Rock" will be paid for at the contract price for "Solid Rock".

Should the contract not include quantities for ditching other material, then all required excavation of "Ditching Other Material" will be paid for at the contract price for "Other Material".

However, should the Owner's Representative require that unsuitable material or bog be excavated, then such excavation of unsuitable material or bog shall be paid for at the contract price for excavation hauled 1 kilometre or under "Ditching Other Material".

Payment at the contract price for "Ditching Other Material" or "Ditching Solid Rock", shall be compensation in full for all labour, materials, and equipment use required for all work herein described together with the excavating, handling, hauling up to 1 kilometre and placing and compacting in a fill as described in Section 204, or placing and shaping up in a disposal area as required.

Where the Owner's Representative requires that excavated material be hauled in excess of 1 kilometre, additional payment for over haul will be made in accordance with Section 215.

SECTION 211

EXCAVATION OVERHANGING ROCK AND ROCKSLIDE DEBRIS

INDEX

- 211.01 DESCRIPTION**
- 211.02 MEASUREMENT FOR PAYMENT**
- 211.03 BASIS OF PAYMENT**

211.01 DESCRIPTION

This work shall include labour and materials required to excavate overhanging rock and rockslide debris from the faces of existing rock cuts, the hauling up to 1 kilometre and the placing and compaction of the material in fills.

Overhanging rock shall be excavated to the slope as staked by the Owner's Representative.

Boulders or large rock fragments, from the excavated overhanging rock or from the rockslide debris shall be broken up with explosives, or by other means, such that the resultant pieces may be used as fill material on the job.

Ditches shall be thoroughly cleaned of all excavated overhanging rock and rockslide debris.

The Contractor shall take every precaution to avoid disturbing the existing shoulder of the road during their operations. However, should the shoulder be disturbed during the work, then the Contractor shall, at their own expense, restore the shoulder to its original condition and compact the shoulder.

The excavated material shall be hauled to a fill as directed by the Owner's Representative, and incorporated into the fill and compacted in accordance with Section 204. Should the material not be required for fill construction, then the material shall be trimmed along embankment slopes or elsewhere as directed by the Owner's Representative.

211.02 MEASUREMENT FOR PAYMENT

The volume to be measured shall be the number of cubic metres, rounded to the nearest whole number, actually placed in a fill or other designated area as directed by the Owner's Representative.

Measurement will be made in excavation and will be from the cross section sheets showing the original ground lines and the completed and accepted excavation lines as cross sectioned. The volume of this excavation is 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.

No allowance will be made for material excavated before original cross sections have been made.

Large rock fragments which are too large to be incorporated into the fill shall be measured and their volumes subtracted from the cross section volumes. Calculations for volume of large rock fragments shall be the product of the three maximum rectilinear dimensions of the fragments.

211.03 BASIS OF PAYMENT

Payment shall be at the contract unit price per cubic metre for Excavation Overhanging Rock and Rockslide Debris, hauled 1 kilometre or under, and such payment will be compensation in full for all operations herein described.

However, where the Owner's Representative requires that materials be hauled in excess of the 1 kilometre freehaul before being placed, additional payment for overhaul will be made in accordance with Section 215.

SECTION 212

EXCAVATION OF MUSKEG OR BOG

INDEX

- 212.01 DESCRIPTION**
- 212.02 MEASUREMENT FOR PAYMENT**
- 212.03 BASIS OF PAYMENT**

212.01 DESCRIPTION

This work shall include labour and materials to excavate muskeg or bog from within areas staked on the ground by the Owner's Representative, together with the spreading and trimming of the excavated material.

Whether or not, and to what width, bog is to be excavated will normally be determined in accordance with the spirit of the guidelines on Form 1209.

The Contractor shall ensure that all bog, together with the accompanying pug, if any, is removed from within the designated areas.

The Contractor shall dispose of, within the right of way adjacent to the excavation, as much of the excavated material as is practically possible without the necessity of loading and hauling, by widening embankments, flattening side slopes and constructing such modified cross sections as the Owner's Representative may direct. Excavated material which cannot be accommodated within the right of way adjacent to the excavation shall be loaded and hauled to other disposal areas either within the right of way or in approved waste disposal areas.

The excavated material shall be spread and trimmed to sightly proportions, taking care not to interfere with watercourses.

212.02 MEASUREMENT FOR PAYMENT

Volumes of excavation of muskeg or bog will be measured in excavation and computed in cubic metres rounded to the nearest whole number.

Measurements shall be by means of cross sections, or where wet conditions make the obtaining of after sections impractical, by means of a combination of original sections and bog soundings.

The quantity to be measured shall be the number of cubic metres of excavated material as shown between the original position of the ground lines as cross sectioned beforehand, and the completed and accepted excavation lines measured either by cross sections or bog soundings. Material excavated outside of the required limits will not be included in measurement for payment. No measurement for payment will be made for the removal of materials that slide or slough into the excavation, nor shall separate payment be made for the removal of such material.

The volume of the excavation is 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.

No allowance will be made for material excavated before cross sections have been made.

212.03 BASIS OF PAYMENT

Where the contract includes quantities for "Muskeg or Bog", then all required excavation of Muskeg or Bog will be paid for at the contract price for "Muskeg or Bog".

However, should the contract not include quantities for Muskeg or Bog, then all required excavation of Muskeg or Bog will be paid for at the contract price for "Excavation Hauled 1 kilometre or Under, Unsuitable Material". Should the contract not include quantities for unsuitable material, then all required excavation for Muskeg or Bog will be paid for at the contract price for "Excavation Hauled 1 kilometre or Under, Other Material".

Payment shall be at the contract unit price per cubic metre for "Muskeg or Bog" or "Unsuitable Material" or "Other Material" as the case may be, hauled 1 kilometre or under. Such payment shall be full compensation for labour, materials and equipment use required to carry out the operations herein described. However, where the Owner's Representative requires that excavated muskeg or bog be hauled in excess of the 1 kilometre freehaul before being placed, additional payment for overhaul will be made in accordance with Section 215.

SECTION 213

CLEANING OF EXISTING DITCHES

INDEX

- 213.01 DESCRIPTION**
- 213.02 GENERAL OPERATIONS**
- 213.03 ENVIRONMENTAL CONSIDERATIONS**
- 213.04 MEASUREMENT FOR PAYMENT**
- 213.05 BASIS OF PAYMENT**

213.01 DESCRIPTION

This specification deals with work required to clean, deepen and widen existing ditches to a uniform cross section per the typical road cross section or as established by the Owner's Representative. This work includes the excavation of Other and Unsuitable Material and the transportation and disposal of that material to an approved disposal site, as agreed upon by the Contractor and Owner's Representative. As part of the ditch cleaning operation, work shall also include the removal of disposal of all boulders less than or equal to 0.5 cubic metres and the cleaning of any materials deposited in all culvert ends encountered.

213.02 GENERAL OPERATIONS

Areas where ditching is required will be identified by the Owner's Representative. Cleaning of existing ditches shall consist of removing all vegetal matter and debris up to a maximum depth of 500 millimetres such that the final cross section has a continuously smooth grade providing positive drainage, without ponding, in the specified flow direction. The Contractor is advised that an excavator with a ditching bucket having a minimum capacity of 0.75 cubic metres and a minimum width of 1500 millimetres is required to complete this work, unless otherwise directed by the Owner's Representative.

Cleaning operations must not undermine the existing foreslope and shall maintain a uniform cross section without gouges or ridges evident in the completed work. Existing shoulder widths shall be maintained throughout the ditch cleaning operation and must not be compromised or narrowed by way of over excavation, undermining of foreslope or other construction activities. Should any narrowing of the existing shoulder occur, the Contractor shall re-establish the original shoulder width and design foreslope, as directed

by Owner's Representative. All work required to re-establish shoulders to their original width shall be carried out at the Contractor's expense.

The uniform cross section should carry throughout the entire ditch line, even in places where culverts were removed and not replaced. All back and side slopes of other material shall be finished to a neat condition, suitable for seeding, true to line and grade. Boulders removed as part of the cleaning operation shall not leave cavities in the final ditch slopes, all cavities shall be filled using suitable material from the cleaning operation as required. Any areas that cannot be finished satisfactorily by machine shall be completed by hand. In the event of damage to private property or existing culverts as a result of cleaning operations, the Contractor shall be responsible to rectify the damage in a reasonable timeframe at their own expense.

Material generated from this work shall become the property of the Contractor and shall be disposed of in the following manner:

- Within the contract right-of-way limits as directed by the Owner's Representative where possible, or
- At a site located by the Contractor, off the right-of-way, and approved by the Owner's Representative.

Where the Contractor wishes to dispose of excess materials from the Work onto private lands, the Contractor must:

1. Satisfy themselves that the land is actually owned by the private individual.
2. Shall be responsible to obtain permission from any property owner for use of their land as a disposal area for excess materials from the Work.
3. Dispose of all materials in such a way to conform to all Federal, Provincial and Municipal Regulations including buffer zones around waterbodies, environmentally sensitive areas, etc...
4. Have the property owner sign and date a release form supplied by the Owner's Representative for the approval to use the land as a disposal site.
5. Sign and date the release form and provide a copy of the signed release to the Owner's Representative including a description of the locations being used for disposal.
6. Be responsible for all costs associated with the disposal and rehabilitation of the disposal area.

Release forms hold the Department free from any and all claims related to the placement of excess materials from the Work onto private property. Release forms will be provided

by the Owner's Representative and no disposal activities shall take place until the Owner's Representative has been provided with a copy of the signed release form.

Upon completion, the Contractor must grade and leave all disposal areas or dump sites in a condition acceptable to the Owner's Representative and such that it does not obstruct flow of surface drainage or natural watercourses.

213.03 ENVIRONMENTAL CONSIDERATIONS

Excavations and embankments should be kept dry while work is in progress by draining and pumping as required. All necessary unwatering shall be completed in accordance with Section 180. Material required to grade the ditchline should not be placed in freestanding water. To reduce siltation resulting from ditch cleaning operations, the Owner's Representative may require the installation of silt fence and/or check dam sediment traps in accordance with Section 816 and Section 817. Where instructed, the Contractor shall install silt fence and terminate roadside ditches a minimum of 30 metres from any watercourse or water body to allow drainage water to filter through a vegetated area prior to entering any watercourse or water body.

213.04 MEASUREMENT FOR PAYMENT

Measurement for payment shall be the total number of linear metres, rounded to the nearest whole number, of ditch cleaning carried out in accordance with this specification. No measurement for payment will be made for material excavated beyond theoretical lines. Areas identified by the Owner's Representative as being over-excavated shall be remedied by the Contractor at their own expense.

213.05 BASIS OF PAYMENT

Payment at the contract price for Cleaning of Existing Ditches, shall be compensation in full for all labour, materials and equipment required to complete the work herein described together with the excavating, handling, hauling, placing and shaping up of all waste materials in an approved disposal area as required.

Should solid rock be encountered during ditch clean out operations it shall be removed and paid for as per Section 206.

SECTION 215

OVERHAUL ON EXCAVATION

INDEX

215.01 DESCRIPTION, MEASUREMENT AND BASIS OF PAYMENT

215.01 DESCRIPTION, MEASUREMENT AND BASIS OF PAYMENT

Where indicated in the specifications, additional payment will be made for excavated materials hauled in excess of one kilometre. Clearing and Grubbing, Clearing, Grubbing, Granular Base Courses, Asphaltic Courses, etc., are not considered as excavated materials, and no payment for overhaul will be made in connection with these items.

The overhaul distance will be measured in one kilometre units from the end of the one kilometre freehaul limit. Fractional kilometres will be allowed as full kilometres.

Overhaul payment will be at the Unit Price Bid for each cubic metre for each additional kilometre beyond the one kilometre freehaul limit for rock or other material, as the case may be, or for each tonne for each additional kilometre beyond one kilometre freehaul.

SECTION 250

BACKHOE HOURS

INDEX

- 250.01 SCOPE**
- 250.02 EQUIPMENT**
- 250.03 DESCRIPTION**
- 250.04 MEASUREMENT FOR PAYMENT**
- 250.05 BASIS OF PAYMENT**

250.01 SCOPE

This specification deals with excavation work and disposal or salvage work, usually of a relatively minor nature, where the basis of payment is backhoe hours.

250.02 EQUIPMENT

The equipment shall consist of an excavator and at least **two** tandem axle dump trucks. Should the Owner's Representative determine that additional trucks are required, then the additional trucks shall be compensated for at the Department's rental rates as specified in Division 10.

The excavator shall have a horsepower rating of at least 135, and the bucket shall have a capacity of at least 0.75 cubic metres.

For ditch clean out operations, a ditching bucket must be used. The bucket is to have a minimum capacity of 0.75 cubic metres and a minimum width of 1500 millimetres.

Where a hydraulic breaker is required, it will have a minimum impact energy of 3390 Joules.

250.03 DESCRIPTION

Backhoe hours may be required to excavate ditches in other material including grubbing and small brush, shape other material back slopes, excavate existing culverts or catch basins for disposal or salvage, excavate other material prior to installation of new culverts and extensions, and excavate such other non-solid rock materials as the Owner's Representative may direct. Backhoe hours will not normally be required in connection

with the excavation of solid rock. However, in those cases where small points of rock are encountered in the ditch and their removal is required by the Owner's Representative, the removal will be accomplished by use of a hydraulic breaker attachment on the excavator.

When excavating existing culverts or catch basins or when excavating for new culverts, the excavated other materials shall be stockpiled next to the excavation so that it may be used as backfill. In the case of work in connection with the salvage of culvert, the work shall proceed with caution so as not to damage the culvert to be salvaged.

For excavating an existing culvert, backhoe hours will only be used if there is no contract item for either Disposal of Culvert or Salvage of Culvert.

After the installation of a new culvert, the backfill shall be placed in lifts and compacted to at least 95% of Standard Proctor Density (ASTM D698).

Waste materials including surplus other material, condemned culverts and catch basins, unsuitable material, grubbing, and such other materials as the Owner's Representative may direct, shall be loaded in trucks and hauled away and disposed of at an approved waste disposal area. The waste disposal area shall be provided by the Contractor at their own expense. The debris shall be covered with waste other material and graded and trimmed to sightly proportions.

250.04 MEASUREMENT FOR PAYMENT

Measurement for payment will be by the number of hours, rounded to the nearest quarter hour, that the excavator actually worked excavating or backfilling, as required by the Owner's Representative. Time spent traveling by the excavator for the disposal of excavated materials, truck haulage time by the two trucks to transport the excavated materials, and time spent grading and trimming the waste in the waste disposal area, will not be included in measurement for payment.

250.05 BASIS OF PAYMENT

Payment at the contract price for backhoe hours shall be compensation in full for all labour, materials and equipment use to carry out required excavation, backfill and compact the excavation if required, load, transport and place waste materials from the excavation to the approved disposal area, provide an approved waste disposal area, and grade and trim the waste materials to sightly proportions.

Should the Owner's Representative determine that more than two tandem trucks are required; the additional trucks shall be compensated for at the Department's rental rates as specified in Division 10.

For excavation of points of rock, payment for backhoe hours will include the hydraulic breaker in lieu of the two tandem trucks.

SECTION 260

GRADING OF DRIVEWAYS

Private driveways shall be constructed to provide a finished top width, shoulder to shoulder of 6 metres, or as required by the Owner's Representative.

See Forms 1175 and 1176 for details.