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as Type C if it cannot be loosened under such an applied load.

The test will be conducted at the Contractor's expense unless the test indicates, to the satisfaction of the Ministry Representative, that the material is Type C. In that case, the cost of the equipment (including mobilization if the equipment is brought in solely for the purpose of the test) and the operator will be paid as Extra Work.

**201.11.04 Type D - All Other Materials** – Type D shall include all other materials of a nature not included in the foregoing definitions of Type A, Type B, or Type C; regardless of the nature or condition of the material or the method used to excavate or remove.

Type D shall also include any unsuitable materials of an organic nature, unless such materials have been specifically set apart in the Contract Special Provisions.

**201.12 Unsuitable Material** – Only material acceptable to the Ministry Representative shall be used in the construction of embankments.

Material deemed unsuitable for the construction may be wasted between the toe of the embankment and the right-of-way boundary or in other areas as designated by the Ministry Representative. If no on-site waste areas are designated then the unsuitable material shall be removed and disposed offsite at the Contractor's expense. Any such material subsequently placed in an embankment, without the approval of the Ministry Representative, shall be removed and disposed of, as directed by the Ministry Representative, and no payment will be made for the removal or haul of such unsuitable material from the embankment.

Where required in the contract all topsoil and organic material shall be stripped over the entire excavation and fill areas and placed in the area between the toe of the embankment and the right-of-way boundary, or on any other area as designated by the Ministry Representative. Topsoil shall meet the requirements of SS 751.16. Organics shall be considered unsuitable material and managed in accordance with SS 201.12. Topsoil shall be stockpiled for later use or disposed of as designated by the Ministry Representative.

All material above or below subgrade in an excavation or in the foundation of an embankment, which in the opinion of the Ministry Representative is unsuitable, shall be removed and paid for as excavation, as classified by the Ministry Representative. Soft clays and peats are typical examples of unsuitable materials.

## ROADWAY AND DRAINAGE EXCAVATION

Where removal of unsuitable material requires backfilling this work shall be carried out with approved fill materials, as directed by the Ministry Representative. Payment for such backfilling and haul will be made at the Unit Price bid for "Roadway and Drainage Excavation".

Upon completion of the road grade, all topsoil and material suitable for growth of ground cover shall be spread to a nominal depth of 150mm on the cleared right-of-way and up the fill slopes to generally blend in with the cross-section. Care shall be taken that proper drainage is maintained. This material shall be placed, compacted and trimmed to a neat appearance in a manner to facilitate growth of revegetation. No additional payment will be made for replacing and trimming topsoil except that haul in excess of 300 m will be paid in accordance with SS 201.45, SS 201.83 and SS 201.93.

### **201.13 (not used)**

**201.14 Surplus Material** – All suitable excavation material shall, if required, be taken or hauled into the nearest embankment and to any embankment on the project to be constructed out to the extreme distance required by the Ministry Representative.

The surplus beyond what is necessary to form the nearest embankment shall be disposed of by widening embankments uniformly within the limits of right of way, shall be hauled to form or widen any embankment on the road to be constructed, stockpiled on Site or in Ministry pits, or lastly removed from Site for disposal by the Contractor subject to the approval by the Ministry Representative where hauling and placing shall be performed in the most efficient manner. No material shall be wasted without the approval of the Ministry Representative, all surplus material shall be used as much as possible.

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**201.31 Rock Cuts** – See SS 204.

**201.32 Overhanging Rock and Boulders** – The Contractor shall remove overhanging rock or boulders within the excavation limits, as ordered by the Ministry Representative, and shall backfill and compact all resulting cavities to allow the safe passage of construction and support vehicles generally in accordance with the requirements of SS 135. Such work will be paid at the Unit Price bid for "Roadway and Drainage Excavation."

**201.33 Overbreak in Solid Rock** - Overbreak in solid rock excavation encountered in the contract is that portion of any such material which is excavated, displaced or loosened outside and beyond the slopes or grades as staked or re-established (with the exception of slides as

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described in Subsection 201.42).

Any overbreak that occurs due to the inherent character of any formation encountered, as determined by the Ministry Representative in consultation with the Qualified Professional will be classified as allowable overbreak as described in subsection 201.33.01.

All other overbreak, as so defined, shall be removed by the Contractor at the Contractor's expense, and shall be disposed of by the Contractor, in the same manner as provided for "Surplus Material", but at the Contractor's expense without any allowance for overhaul, except as hereinafter stated.

The Qualified Professional is defined as the Ministry's Geotechnical Engineer, Rockwork Engineer, or consultant engineer working for the Ministry whose discipline is in geotechnical engineering.

### **201.33.01 Allowable Overbreak –**

If, and only where directed by the Ministry Representative, use is made of the overbreak to replace material which would otherwise have to be borrowed for the construction of the roadway, then such overbreak will be classed as allowable overbreak.

### **201.33.02 Contractor's Negligence –**

Overbreak resulting from fault or negligence of the Contractor shall be removed and disposed of, as directed by the Ministry Representative, at no cost to the Ministry.

Definition of negligence will be deemed to be lack of following the sequence of operations, lack of a blast design, lack of preblast survey, and lack of as-built blast design as described in 204.04.06, 204.04.07, and 204.04.08 and 204.04.09. Also, definition of negligence will be deemed to mean lack of cut-off holes on the back slope, excessive spacing of drill holes and overloading of same.

### **201.34 (Not used)**

**201.35 Enlargement of Excavation** – In cases where the quantity of material taken from a regular excavation will not be sufficient to form the required embankment, the deficiency shall be supplied by taking material from excavation within or outside the right-of-way, at such places as the Ministry Representative may direct, or from enlargement of the regular excavations made uniformly on one or both sides. The sides of the excavation in all cases shall be dressed to such slopes as the Ministry Representative may require, provided that if the Contractor shall have sloped or scaled such excavation by direction of the Ministry Representative before widening the same, payment for sloping or scaling the second time will be made by Order for Extra Work.

## ROADWAY AND DRAINAGE EXCAVATION

**201.36 Rock Embankments** – This section applies to embankments constructed from material containing more than 15% by volume of rock larger than 150 mm.

Embankments shall be constructed in layers equal in thickness to the largest size of the material but not exceeding 0.7 m. Greater lift thicknesses will be permitted by the Ministry Representative under special conditions provided the Contractor can spread the larger material satisfactorily and attain a degree of compaction no less than attained for layers less than 0.7m in thickness. Regardless of layer thickness and material particle size all material shall be well compacted to the satisfaction of the Ministry Representative.

The material shall be deposited and spread so that the larger rocks are well distributed and the intervening spaces are filled with smaller sizes as may be available to form a stable embankment. The finer portion of excavated rock shall be retained for the top transition layer. Each layer shall be compacted by routing the loading construction equipment over the entire width supplemented with additional compaction equipment, as necessary to ensure compaction is uniform and to the satisfaction of the Ministry Representative.

When a rock embankment is overlain by an earth embankment or by sub-base or base course materials, the top 0.5 m of the rock fill shall be sealed with smaller rock particles and suitable soil materials, if necessary, to prevent the uppermost layers penetrating into voids in this rock embankment.

Where permitted by the Ministry Representative, and where the width is too narrow to accommodate equipment, material for the toe of the side hill rock fills may be placed by end dumping until sufficient width of the embankment has been formed to carry equipment, after which the remainder shall be placed in layers and compacted as specified. Any loose material left on the slopes by end dumping shall be incorporated in the fill and compacted according to these standards.

When embankments are made on hillsides or where a new fill is to be applied upon an existing embankment, the slopes of the embankment or original ground (except rock) shall be terraced in a continuous series of steps a minimum of 1.5 m wide as the embankment rises.

The material from step excavation shall be spread and compacted into the adjoining embankment. No additional payment will be made for excavation or for placing step material in the adjoining fill.

**201.37 Earth Embankments** – This section applies to embankments constructed from material containing less