

**02055 Construction of Streets and Lanes****Index**

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**02055-1      Description of Work**

This specification covers the supply of all labour, equipment and materials necessary for the excavation and compaction of the subgrade to the lines and grades as shown on the drawings and as herein specified.

**02055-2      Equipment**

All tools, machinery, plant and equipment used in handling materials and executing any part of the work, shall be subject to the approval of the Engineer. All such equipment shall be maintained in efficient working order and where any of the machinery, plant or equipment is found to be unsatisfactory, it shall be improved or replaced by the Engineer.

**02055-3      Excavation**

The width of roadway and cross section in cut shall be as shown on the drawings and/or staked or designated by the Engineer. Excavation shall normally be to the finished subgrade as shown on the drawings.

Suitable excavated material shall be used as far as practicable in the formation of fills or for other backfill. Materials obtained from excavation and used as fill in the work will be paid for only as excavation. The Contractor shall shape and form both excavation and embankment to the satisfaction of the Engineer.

All inferior material subject to frost action, soft spongy or yielding spots, or organic material shall be entirely removed and disposed of as directed by the Engineer. Where such materials occur in cut or existing fill sections such that their removal will result in excavation below the subgrade elevation, such excavation shall be authorized by the Engineer. These areas shall be backfilled with material approved by the Engineer with suitable imported material. Such inferior material shall be excavated and disposed for the unit bid price for common excavation. The Engineer will authorize and determine the quantity below the required cross section for the removal of inferior material.

Common excavation shall include the excavation of all earth, loose stones, gravel and all other materials (Refer to Section 02005-1.3) and the disposition of same in accordance with these specifications or as directed by the Engineer.

The unit bid price for common excavation shall include the cost for placement in the roadway and compaction as specified herein, trimming or disposal within the free-haul limit or as directed by the Engineer.

**02055-4      Subgrade Construction****4.1            Description**

Cut sections and embankments or fills shall be constructed in accordance with these specifications and in conformity with the grades and cross sections shown on the plans or as ordered by the Engineer in case of any changes in original plans.

**4.2            Materials**

Embankment or fill sections shall be constructed with soils approved by the Engineer. The material shall be free from objectionable organic matter, frozen soil, stumps, trees or other objectionable material.

Stones having a dimension 150 millimetres or more when measured in any direction shall be excluded from all fill areas. All stones of larger size shall be removed from the grade and disposed of as directed by the Engineer. No extra payment will be made for such stone removal and disposal.

After the black dirt has been removed from the streets and lanes to the depth specified or approved by the Engineer, care must be taken to incorporate the transition material below the topsoil in the bottom of a fill area. At all times the best quality of material within designated balanced cut and fill sections or other areas as designated by the Engineer shall be incorporated near the surface of the fill area.

**4.3            Subgrade Compaction**

Embankment shall be constructed of suitable material placed on successive layers not greater than 150 millimetres in depth, distributed over the full width of the cross section. Each layer shall be spread and bladed evenly by means of a blade grader or other approved equipment before placing another lift. During this procedure, the Contractor shall operate his equipment in such a manner where the entire embankment will be compacted to the same degree.

**4.4            Moisture Content**

When the moisture content of the existing soil is in excess of the amount of moisture required for building a firm embankment, the soil shall be dried to the satisfaction of the Engineer. In order to expedite the project it may be necessary to aerate the soil. The cost of aerating will be considered incidental to excavation with no extra payment.

**4.5            Condition of Subgrade**

The Contractor shall maintain a street or lane, or part of a street or lane, until such is completed and approved to the satisfaction of the Engineer. Should it be found necessary to haul materials over the subgrade, all cuts, ruts and breaks in the surface of the subgrade so resulting shall be repaired in a manner satisfactory to the Engineer.

Cut and embankment areas shall be trimmed and shaped at the end of each working day in such a manner as to eliminate any ponding of water or saturation of the subgrade in the event of rain.

The Contractor shall shape and trim the street or lane or part thereof when such is to correct grade before commencing excavation in a new area.

**02055-5      Haul**

The limit of free-haul for removing topsoil and earth excavation will be specified in the General Requirements. For haul exceeding the specified free-haul distance, the Contractor will be paid for overhaul at a unit bid price per cubic metre-kilometre measured along the centre line of the route travelled or the most economical route.

**02055-6      Clearing and Grubbing**

Clearing and grubbing consists of the removal of all timber, brush, stumps, roots, grain, grass, weeds, rubbish, or other such perishable material from within the limits of the streets and lanes, also from such areas as may be required for off take, ditches, borrow pits, areas for stockpiling topsoil, etc.

All timber, brush, roots, etc. is to be piled at convenient points on the limits of the streets or lanes and disposed of as directed by the Engineer.

The cost of clearing and grubbing will be considered incidental to excavation and must be included within the unit bid price for excavation.

**02055-7      Underground Services**

The Contractor shall be responsible to have all underground services and utilities located. The Contractor is responsible in the event that damage or disturbance does occur to underground structures.

Where existing underground gas, power, telephone or other street improvements are encountered or may be affected by this construction, the Contractor shall proceed under the direction of the respective Utility Company as the case may be. Should any of the above mentioned underground services require to be re-aligned or regraded to avoid interference with construction, then such work shall be done at the expense of the City or on a Force Account basis.

Whenever an underground service has been exposed or damaged, the Contractor shall immediately notify the respective Utility Company and Engineer to make their own inspection and repairs if required. Such repair work will be done at the expense of the Contractor.

**02055-8      Alterations, Damage, Safety Protection, etc.**

All manholes, catch basins, valve boxes or any other sewer and water appurtenances shall be raised, lowered, or otherwise altered to meet the new grade by the Contractor and at the expense of the City. After the above mentioned work is completed, the City shall provide adequate notices, barriers, warning lights and all other means of protection for the safety of the public for a maximum period of twenty-four (24) hours, or whenever possible, the Contractor upon reasonable notice from the City shall provide the adequate protection at the initial time when the work is completed. In the event that the Contractor neglects to place the necessary barricades and warning lights, the City may place these and the costs shall be borne by the Contractor. The minimum charge for each placing of notices, warning lights and barricades by the City shall be fifty dollars (\$50.00).

During the progress of the work, extreme care shall be taken to protect the above mentioned structures against damage of any nature. Any damage shall be immediately repaired by the Contractor at his own expense. The Contractor shall take all necessary

precautions to prevent material from falling into manholes, catch basins, valve boxes, etc., and shall be responsible for thoroughly cleaning same at the completion of the work.

**02055-9      Survey Pins, Stakes, Lines & Levels**

All work to be performed under this Contract shall be laid out by the Engineer by means of stakes or reference stakes and the Contractor is required to make the completed work conform to the lines and levels thus indicated.

The Contractor shall, before commencing work at any point, satisfy himself as to the meaning and correctness of all stakes and no claim will be entertained by the City for any allowances based on inaccuracies, or for any alterations subsequently rendered necessary on account of his failure to read same correctly. Should the Contractor discover or suspect any errors, he shall at once discontinue the work until such errors are investigated and rectified, but no claim shall be made or allowed on account thereof on account of any delay occasioned thereby.

The Contractor shall give the Engineer as early notice as possible whenever additional levels, lines, stakes, etc., are required on any portion of the work, stating the location at which such are needed for immediate use.

The Contractor will be held responsible for the preservation of all stakes and survey pins. If any of them are disturbed or destroyed he shall at once notify the Engineer and if in the opinion of the Engineer, the Contractor has been negligent in their protection, then the entire cost of replacing any stakes, survey pins, etc., so destroyed may be charged against the Contractor and deducted from any payments due him under this Contract.

**02055-10      Public Convenience**

The Contractor shall carry on the said works as to cause the least possible obstruction to streets, lanes or thoroughfares within or adjacent to the construction area, and shall provide temporary access to locations as directed by the Engineer. The Contractor shall provide and maintain all necessary notices, barriers, warning lights or any other means of protection for the safety of the public from the commencement to the completion of his work.

**02055-11     Method of Measurement****11.1            Excavation**

The quantity of common excavation and stripping for which payment will be made, shall be the volume in cubic metre, measured in its original position and computed by the average end area method for materials excavated or as otherwise determined by the Engineer.

**11.2            Overhaul**

As per Clause 02055-5.

**02055-12     Basis of Payment**

Payment for excavation, stripping, overhaul and other items set out in the tender form will be on the basis of unit bid prices as specified in the Tender Form.

The prices tendered for the various classes of excavation shall be full compensation for all hauling within the free-haul limit, formation of embankment or fill, all compaction and subgrade construction as specified herein, trimming of slopes, disposal of surplus material, and the furnishing of all tools, labour, superintendence, equipment and incidentals, necessary to complete the work in a satisfactory and workmanlike manner.

**End of Specification 02055**