

Division 1: Regular Excavation

1.01 SCOPE: Regular Excavation shall consist of the removal and satisfactory disposal of material located within the limits of construction, including widening of cuts and shaping of slopes necessary for the preparation of the roadbed, (i.e., scarify and compact to a depth of six inches (6") as per 1.02M) removal of root mat, stripping of topsoil, cutting of any ditches, channels, waterways, intersections, approaches, entrances and other incidental work. In addition, it shall consist of constructing roadway embankments, including preparation of the area upon which they are placed.

1.02 EXECUTION:

A. Slopes for the roadway, intersections, and entrances shall be graded to conform to the lines, grades, and typical cross-section shown on the plans within the following tolerances:

1. Finished Grade: 0.10 foot above or below plan grade.

2. Earth Excavation Slopes:

a. Slopes less than or equal to 3:1 shall be grooved and shall not deviate from the plan surface by more than 0.5'.

b. Slopes greater than 3:1 shall be constructed to within an average deviation of 0.5' from the cross-sections for the side slopes.

c. All ditches must be graded to within 0.2' of its proposed invert as shown on the construction plans.

B. Topsoil stockpiled for later use in the work shall be stored within the right-of-way unless the working area is such that the presence of the material within the right-of-way will interfere with the orderly prosecution of the work. Stockpile areas which are outside of the right-of-way shall be located by the Contractor at his expense and approved by the Engineer. Topsoil used in the work shall be removed first from any stockpiles located on private property.

The stripping of topsoil shall be confined to the area over which excavation is to be actively prosecuted within 15 days following the stripping operation. Excavation and embankment construction shall be confined to the minimum area necessary to accommodate the Contractor's equipment and work force engaged in earth moving.

C. The Contractor is expected to schedule his excavation and embankment work in such a manner as to minimize the quantity of unsuitable material for which more than one handling is required prior to final placement. Placement and compaction of suitable on-site material will not be paid as an extra, but considered incidental to the costs of regular excavation. Select Borrow II shall not be used until all suitable material generated by regular excavation has been utilized.

D. The grade shown on the profile will represent the center of the crown on the finished surface, unless otherwise indicated. All center and slope stakes will be set by the Contractor with reference to the finished grade E. It shall be understood that "surplus material" referred to herein and elsewhere in these Specifications is material which occurs on a project as a result of unbalanced earthwork quantities, excessive swell, slides, undercut or for other reasons beyond the control of the Contractor. Surplus material will be disposed of by the contractor at off-site locations. The Contractor shall be responsible for obtaining the necessary rights and permits to property upon which to deposit the unsuitable or surplus material.

E. Unsuitable Materials for roadway construction within the right-of-way shall be those soils that fall within Classes IV and V under USCS Soil Classification as set forth in ASTM D-2487 within the limits of regular excavation.

F. Material secured by widening the cuts beyond the slope stakes will be designated as regular excavation.

G. Embankment shall be constructed with approved material and placed so as to provide uniform compaction throughout. Embankment shall contain no muck, frozen material, roots sod or other deleterious matter, nor shall it be placed on frozen ground or other areas covered with snow or ice. Unsuitable material may be used only in the widening and/or

flattening of embankment slopes and shall be placed in uniform layers not to exceed eighteen inches in thickness.

- H. The surface area directly beneath the pavement and shoulders on which embankments are to be constructed shall be denuded of all vegetation and those areas which will support the compacting equipment shall be scarified and compacted to a depth of 6 inches to the same degree as the material which is to be placed thereon, unless otherwise permitted in writing and if the properties of the materials in place are less than those represented by the boring logs.
- I. Sod not required to be removed shall be thoroughly disked before construction of embankments. Areas which contain material unsuitable as foundations for embankments shall be undercut and backfilled in accordance with Division 2.
- J. Embankments to be placed over swampy areas which will not support the weight of the hauling equipment may be constructed by end-dumping successive loads in a uniformly distributed layer of a thickness capable of supporting the hauling equipment while placing subsequent layers. The nose or leading edge of the embankment shall be maintained in a wedge shape to facilitate mud displacement in such a manner as to prevent its entrapment in the fill. The front or end slope of the embankment shall be maintained no steeper than 2:1. The use of compacting equipment will not be required on the original course; however, the remainder of the embankment shall be constructed in layers and compacted in accordance with the referenced Specifications.
- K. When embankment is to be placed and compacted upon an existing road, the surface shall be scarified to such a degree as will provide ample bond between old and new material. Cement concrete and bituminous concrete pavement structures within the proposed roadway prism shall be demolished in accordance with Division 24. Cement stabilized courses underlying existing pavement, not designated for demolition and located 3 feet or less below the proposed subgrade shall be removed. Such stabilized courses within the proposed roadway prism and located more than 3 feet below the proposed subgrade shall be either removed or broken into particles not to exceed 18 inches in any dimension, sufficiently displaced from their existing position to allow for adequate drainage and left in the roadway prism.
- L. When the excavated material consists predominantly of earth, regular excavation embankment shall be placed in successive uniform layers not exceeding 8 inches in thickness, loose measurement, over the entire roadbed area. Each layer shall be compacted at optimum moisture, within a tolerance of plus or minus 20 percent of optimum, at a minimum density of ninety-five percent (95%) of the theoretical maximum density as per the plans and VTM-1.
- M. As the compaction of each layer progresses, continuous leveling and manipulating will be required to insure uniform density. Construction equipment shall be either routed uniformly over the entire surface of each layer or the layer shall be scarified to its full depth in the area where the equipment is routed prior to placing subsequent layers.
- N. Compaction Tests: The City, or its authorized representatives, reserve the right to perform compaction tests on any or all portion(s) of backfill placed at no costs to the Contractor. However, in the event the compaction of this backfill is not in compliance with the above requirements, the Contractor shall take corrective measures at no costs to the City to bring the backfill within the limits of these Specifications. The Contractor shall then be responsible for reimbursing the City all costs associated with the performance of compaction test(s) in those sections of the backfill that failed the compaction test(s).

1.03 MEASUREMENT AND PAYMENT:

- A. Excavation will not be measured in the field. Total cubic yards of excavation shown result from the Engineer's best estimate from the quantities of the cross sections as they appear in the plans. It shall be the bidder's responsibility to make his own determination of the quantity of regular excavation, and to include full compensation for all regular excavation in the Lump Sum Price Bid.
- B. Excavation of existing roadways having surface treated or untreated pavement structures, within and outside construction limits, required to incorporate the old roadway into the new roadway or to remove salvageable materials for use in maintenance of traffic will be considered as regular excavation.
- C. Excavation of roadside ditches specified or otherwise required by the Engineer will be paid for as regular excavation,

during performance of a roadway project in which regular excavation is specified in the Unit Price Table. All ditches must be constructed within 0.2' of the proposed inverts shown on the construction plans. In other projects when ditch regrading is shown on the plans it will be measured and paid at the lump sum price specified in the Unit Price Table.

- D. The cost of embankment will not be measured nor paid for as a separate bid item but will be considered incidental to the lump sum contract price for regular excavation.
- E. Regular excavation shall be paid for at the contract lump sum price as specified in the Unit Price Table. The lump sum price shall be full compensation for all materials, labor and equipment necessary to complete this work.

