

CONSTRUCTION AND MATERIAL SPECIFICATIONS

SECTION V SITE GRADING

1. Scope

The work covered by this Section of the Specifications includes clearing the grubbing, stripping and stockpiling of topsoil, the excavation of subsoil and placement and compaction of fill, and rough grading to subgrade.

2. Construction Methods

A. Pennsylvania Department of Transportation Specifications

Except as modified herein, all site grading shall conform to Form 408, latest revision, Pennsylvania Department of Transportation Specifications for the following items.

Clearing and Grubbing
Class I Excavation
Borrow and Foreign Borrow Excavation
Embankment

As used in Form 408, "Class I Excavation" shall mean "Site Excavation", and "Embankment" shall mean, "Fill", as used herein.

B. Clearing and Grubbing

This items shall consist of the removal of all objectionable material within the limits of grading, including trees, stumps, brush, roots, fences, rubbish and any vegetation. It shall also include the removal of designated buildings, foundations, culverts and drainage structures, curbs, sidewalks, old paving and all other obstructions interfering with the proposed work. Unless specifically marked for salvage, all materials shall be disposed of by the Contractor outside the Limits of Work.

Within areas where fill is to be made 5 feet or more in depth, trees and stumps shall be cut off as close to the ground as is practicable, but not to exceed 12 inches above the ground surface. Where fill is less than 5 feet in depth, tree root masses shall be removed.

C. Topsoil

After clearing and grubbing is completed, all topsoil within the limits of grading, except as hereinafter provided shall be stripped and stockpiled at locations to be designated by the Township Engineer. Stockpiles shall be confined to such designated areas, and kept neat. Material other than topsoil, which is unsuitable for fill, will be known as waste, and shall be removed and disposed of outside the limits of grading. Where fill is to be placed at a depth in excess of 5 feet, removal of topsoil will not be required.

D. Site Excavation and Fill

This item consists of the excavation of subsoil and placement and compaction of fill to the required density, and rough grading to within two inches of proper subgrade.

All fill required shall be made from suitable material excavated from cut areas within the site, unless a specific item for Borrow Excavation or Foreign Borrow Excavation is included in the proposal. Suitable material shall include subsoil, granular material, shale, and rock or inorganic random material, all of which can be readily incorporated into an 8-inch loose layer. Rock, boulders, old concrete, etc. which cannot be incorporated into an 8 inch loose layer may, upon specific approval of the Engineer, be incorporated into the bottom layer of fill, provided care is taken by the Contractor to insure the proper fulfilling of voids, and provided such material is not placed where future utilities or building excavation will take place. Frozen material shall not be placed in fill, nor shall fill be placed on material frozen to a depth of over 8 inches. Frozen or wet material, which will be suitable when dry, may be thawed and/or dried and then used in fill.

After removal of topsoil, areas to receive fill shall be thoroughly rolled, and any soft spots disclosed by rolling shall be excavated and the unsuitable material replaced and re-rolled. Suitable fill material shall be spread in horizontal layers of not more than 8 inches loose over the full area of fill, and compacted to the required density by the use of tamping or pneumatic-tired or smooth-wheel rollers, or by tractor and scoop. Unless otherwise specified, compaction density in areas to receive flexible-type pavement shall not be less than 90%, and in building areas, not less than 95%, of the maximum dry density as determined by the standard compaction test, ASTM Designation D698-66T. Fill materials which do not contain sufficient moisture to obtain the required compaction density will require the incorporation of additional water; material containing an excess of moisture shall not be used for fill until it has been allowed to dry prior to compaction to proper moisture content.

After all necessary excavation and fills have been made, the entire graded area shall be brought to within 2 inches of proper subgrade.

E. Protection of Public and Adjoining Lands

The contractor shall take special care in excavation along and within the right-of-way of adjacent streets and State Highways and along property lines to prevent the spilling of any excavated material onto the slopes or shoulders of the highway, or onto adjoining property. Loose material, which may wash or slide down upon highway areas, shall not be permitted to remain overnight. No power equipment shall be operated beyond the limits of the property, nor within street or highway right-of-way.

F. Erosion and Sedimentation Control Plan

All earthmoving activities shall be conducted in such a manner as to prevent accelerated erosion and the resulting sedimentation. To accomplish this, the Contractor shall implement and maintain the erosion and sedimentation control measures shown on the Contract Drawings and/or described elsewhere within these Specifications.

The Contractor shall comply with all applicable provisions of Chapter 102 of Title 25; Rules and Regulations, Pennsylvania Department of Environmental Resources.

It shall be the Contractor's responsibility to have a copy of the erosion control plan available at all times on the site. In the event that a permit is required for the subject earthmoving activity, it shall be the owner's responsibility to obtain said permit.

G. Blasting

The use of explosives shall be governed by the "Regulations for the Storage, Handling and Use of Explosives" of the Pennsylvania Department of Labor and Industry and "Blasting and Use of Explosives" of the "Safety and Health Regulations for Construction" by the U.S. Department of Labor. If blasting is required, the Contractor shall place such operations in charge of experienced persons only and they shall be carried out in strict accordance with the existing Federal, State, County or Municipal laws or regulations governing the same. Care shall be taken to protect from injury all persons, new pipes, railway tracks, all underground structures encountered, and all structures and highways along the lines of the work. The qualification of personnel charged with the use, handling, transportation and storage of explosives; the selection of type of explosives and detonating devices; the use, handling, transportation and storage of explosive including, but limited to, drilling patterns, depths and sizes of charges, adequacy

of protective cover (mats) and warning devices, seismographic monitoring, precautions against accidental and unauthorized detonation; and adequacy of storage facilities are the sole responsibility of the Contractor. Blasting is a technique of construction which is the Contractor's responsibility as a function of control and direction of the work. The Township Engineer and/or Resident Project Representative in their on-site observation of the progress and quality of the executed work may recommend that blasting operations be stopped when deemed necessary for the public safety, for the safety of the workmen, for protection of public and private property and of the work or for any reason deemed to be in the best interest of the Owner, but the Township Engineer and/or Resident Project Representatives shall have no responsibility to stop or require the alteration of blasting operations.

When blasting is anticipated within one hundred feet (100') of a structure within a Pennsylvania Department of Transportation Highway Right-of-Way, the Contractor shall furnish the Owner and State District Engineer a detailed plan of excavation, shoring, blasting and backfilling procedures. It is advisable that this submission be made as early as possible, so that it may be reviewed and returned before construction in these areas will be permitted to begin. Highway structures are defined on Page 11, Paragraph 101.62, Form 408, published by the Pennsylvania Department of Transportation.

H. Borrow and Foreign Borrow Excavation

This item consists of excavation, placement and compaction in fill areas of satisfactory material obtained from sources on the site, call Borrow Excavation, or the furnishing, excavation, hauling, and placement and compaction of satisfactory material obtained from sources outside the site, call Foreign Borrow Excavation, where the amount of the fill exceeds the amount of excavation within the Limits of Work. Sources of borrow material and material itself shall be approved by the Township Engineer before incorporating it into the work.