

ITEM 2
EXCAVATION

2.1	DESCRIPTION	2
2.2	EQUIPMENT	2
2.3	CONSTRUCTION METHODS	2
	A. Rock Cuts	3
	B. Earth Cuts	3
	C. Subgrade Tolerance	3
2.4	MEASUREMENT	3
2.5	PAYMENT	4

ITEM 2 EXCAVATION

2.1 DESCRIPTION

This Item shall consist of furnishing all materials, equipment, labor and necessary items for the excavation of the required material in the areas shown on the plans and cross sections to the lines, grades and typical sections as specified. Excavation shall include all materials encountered regardless of their nature or of the manner in which they are removed except rock.

2.2 EQUIPMENT

The **CONTRACTOR** shall provide equipment in good operating condition that is specifically designed and manufactured for the purpose of excavating soil and rock. Equipment shall be available to perform the work specified within the time frames needed and to be coordinated with the other work activities. The equipment shall be operated by skilled workman.

Excavating and hauling equipment shall be approved by the **AGENCY**. All equipment and machinery shall be kept in good working order, free of leaks and properly muffled. All taxes, licenses and fees shall have been paid and proper licenses and permits shall be posted as required by law.

2.3 CONSTRUCTION METHODS

All excavation shall be performed as specified herein and the completed excavation shall conform to the alignment, grades and typical sections as shown on the plans or project cross sections or as established by the **AGENCY**.

Unsuitable excavation and excavation in excess of that needed for construction shall be known as "Waste" and shall become the property of the **CONTRACTOR** and shall be disposed of in accordance with local, State and Federal regulations. Unsuitable material encountered below subgrade elevation in roadway cuts, when declared "Waste" by the **AGENCY**, shall be replaced with material from the roadway excavation or with other suitable material as approved by the **AGENCY**. This work shall be done in accordance with the provisions in Item 3, Embankment.

When excavated materials, including topsoil, are utilized in constructing the required roadway sections, payment for placement will be made under the pertinent bid item. The **CONTRACTOR** shall maintain excavation to be used for construction in stockpile over a clean site and prevent contamination.

During construction, the roadbed and ditches shall be maintained in such condition as to ensure proper drainage at all times. Ditches and channels shall be constructed and maintained to avoid damage to the roadway section. Silt protection shall be provided by the **CONTRACTOR** at no additional cost. During construction, channels shall be kept drained. All slopes shall be accurately shaped and care shall be taken that no material is loosened below or outside the required slopes. Exceptions shall be those slopes in rock or other material where, in the judgement of the **AGENCY**, some variation may be

permitted. All breakage and slides shall be removed and disposed of in a manner acceptable to the **AGENCY**, at no cost to the **AGENCY**.

A. Rock Cuts

Rock shall be defined as a substance naturally occurring in the ground which, when struck soundly by a hammer does not fracture and emits a "ping" sound. For neat excavations shown on the plans, the **CONTRACTOR** shall have the following options:

1. Excavate to finish subgrade elevation, manipulate and compact the subgrade in accordance with the method specified under Embankment, Item 3, without removal.
2. Excavate below grade (undercutting) and replace with embankment material approved by the **AGENCY**. Compaction shall be in accordance with the method specified under Embankment, Item 3
3. Homogenous rock may be excavated to finish subgrade elevation. The slopes of all rock cuts shall be scaled and dressed to a safe, stable condition by removing all loose spalls and rock not firmly keyed to the rock slope. Overhanging rock shall be removed when it may be a hazard, in the opinion of the **AGENCY**.

B. Earth Cuts

When base and/or pavement structure is placed within this project, all earth cuts shall be scarified to a uniform depth of at least 12 inches below the required finished subgrade elevation for the entire roadbed width. The material shall be thoroughly mixed, moisture conditioned and compacted in accordance with the method specified under Embankment, Item 3 or as shown on the plans.

C. Subgrade Tolerance

Any deviation in excess of 0.1 feet in cross section and 0.1 feet in 16 feet measured longitudinally shall be corrected by loosening, adding or removing soil, reshaping, moisture conditioning, and recompacting.

2.4 MEASUREMENT

This Item will be measured by the cubic yard in its original position as computed by the method of average end areas with no allowances made for curvature. If for any reason, it is impossible or impractical to measure quantities by average end areas, the **AGENCY** will compute the quantities by a method, which, in the **AGENCY's** opinion, is best suited to obtain an accurate determination.

This is a plan quantity Item and the quantity will be that shown on the plans. When changes are made during construction, measurements for payment shall be made by the **AGENCY**. If no adjustment of quantities is required, additional measurements or calculations will not be required.

Shrinkage or swellage factors will not be considered in determining the calculated quantities. When a slide, not due to the **CONTRACTOR's** negligence or operation, occurs, the **CONTRACTOR** and **AGENCY** shall negotiate in each case the relative difficulty of work and payment for removal and disposal of the slide material. Only those quantities of slide and slipout material, which are authorized and actually removed, will be measured for payment.

2.5 PAYMENT

Excavation to be wasted or otherwise not used on the project shall be paid at a unit rate basis per cubic yard. Only the volume of excavation on the plans shall be paid. No payment shall be made for miscellaneous excavations or any other quantities not specifically noted as excavation on the plans. The quantities of excavation used elsewhere on the project, shall be paid for at the contract unit price bid for Item 3, Embankment.

<u>Item</u>	<u>Description</u>	<u>Payment</u>
2.5-1	Excavation (wasted)	\$/yd ³
	Excavation used as fill complete in place*	
2.5-2	Excavation (rock)	\$/yd ³

* No charge - paid under Item 3