

**SECTION 02240**  
**BORROW EXCAVATION**

**02240.01 GENERAL**

**A. Description**

Borrow excavation shall include, but not necessarily be limited to, furnishing, excavating, hauling, and depositing of approved materials for embankments and backfills as directed, when sufficient quantities of suitable materials are not available from other onsite excavations, and shall include all work prescribed for backfills, embankments, subgrade and earth shoulders in accordance with the Contract Documents.

**B. Related Work Included Elsewhere**

1. Protection of the environment; Section 01500.
2. Clearing and grubbing; Section 02110.
3. Trench excavation, backfill, and compaction; Section 02250.
4. Embankment construction; Section 02260.
5. Turf establishment; Section 02820.

**C. Quality Assurance**

All borrow materials will be subject to test by the Engineer to determine compliance with these Specifications. When specific materials tests are called for in the referenced standards and specifications, the Engineer will have the option of requiring that any or all of these tests be performed for materials furnished for a specific project. When testing is required, it will be specified herein or in the "Special Provisions".

**D. Submittals**

1. Materials Tests

Materials test results shall be submitted for all materials furnished from other than a licensed commercial operating supplier. The tests shall demonstrate that the material meets all the requirements specified herein.

2. Certificates of Compliance

Certificates of compliance shall be submitted in accordance with the "General Provisions" for materials furnished from a licensed commercial operating supplier. The certificate shall state that the material meets the requirements specified herein.

**02240.02 MATERIALS****A. Materials Furnished by the County**

The County will not furnish any borrow material.

**B. Contractor's Options**

The Contractor may furnish borrow material by one of the following methods:

1. Acquire material from a licensed commercial operating supplier;
2. Make application to the Department of Natural Resources under the Maryland Annotated Code, Article 7, Subtitle 6A, entitled "Surface Mining";
3. Make application to the County to operate under the standard adopted in accordance with the Maryland Annotated Code, Article 7, Subtitle 6A31, entitled "Exemptions" and approved by the Maryland Department of Natural Resources.

A Contractor who elects the use of Option 3 above must submit an application to the County. An exemption under Option 3 will require approval of a reclamation and excavating plan along with the drainage patterns and methods of attaining satisfactory drainage and soil conservation as the work progresses. The plan shall also provide for surface restoration suitable for the proposed subsequent land use after reclamation is completed and the proposed method of accomplishment. Additional information may be deemed necessary which the applicant shall furnish upon request.

The Contractor shall be responsible for obtaining any other state or local permits, which may be required in connection with furnishing, borrow material.

**C. Detailed Material Requirements**

1. Type I Borrow Excavation shall be in accordance with all the requirements of Section 02260.02.
2. Type II Borrow Excavation shall comply with AASHTO M 145, groups A-3, A-2, A-2-4 or A-2-6. A-3 material shall only be used when the backfill can be contained. (e.g. trench backfill).
3. Type III Borrow Excavation shall be a material which has a minimum 25% retained on the No. 10 sieve and a maximum 10% passing the #200 sieve, a liquid limit determined by AASHTO T 89 no greater than 30 and a plasticity index determined by AASHTO T 90 not greater than 9.

**02240.03 EXECUTION****A. General**

Borrow material shall not be used until provisions have been made for utilization of all available suitable material meeting the requirements specified herein obtained from on-site excavations.

**B. Borrow Pits**

## 1. Clearing and Grubbing

Clearing and grubbing shall be performed in accordance with Section 02110.03.

## 2. Borrow Pit Material

The Contractor shall notify the Engineer 10 days in advance of the opening of any borrow pit so that soil analysis, elevations, and measurements of the ground may be made. Unless written permission from the Engineer is given to the Contractor to do otherwise, it is to be understood that after a pit is once opened the material excavated is to be used only for the project intended. Not until a final survey is made of the pit may the Contractor excavate additional material for other purposes.

## 3. Overburden Material

Overburden meeting the requirements of Section 02813.02 may be disposed of as set forth therein when estimated quantities are included in the Proposal for this item. In this event, payment for materials incorporated in the work will be made only under the item Furnished Topsoil. Unsuitable materials and overburden shall be disposed of and shall be placed, trimmed, shaped, or sloped as directed by the Engineer.

## 4. Approved Materials

Approved materials provided and paid for under this item shall be incorporated in the work in accordance with the requirements of Sections 02250.03, 02260.03, and 02280.03 for the completion of embankment, backfill, sub-grade, and earth shoulders.

## 5. Borrow Pit After Excavation

After the necessary quantity of materials has been removed, the borrow pit shall be trimmed and shaped to blend into the general topography of the area so as to present a neat appearance and have all parts effectively drained. Steep slopes and sheer faces shall be avoided. All disturbed areas shall be seeded and mulched at the Contractor's expense in accordance with the approved sediment control plan. These shaping and seeding requirements do not apply to commercial pits.

**C. Borrow Excavation Beyond Specified Limits**

If, after the Contractor has substantially completed the excavations on site, the Engineer directs the Contractor to excavate beyond the limits of the Project as originally proposed, then all material removed beyond the limits of the typical cross section, or as indicated by contours or elevations, shall be classified as borrow excavation. All work and payment therefore will be in accordance with the requirements for borrow excavation.

**D. Blending Materials**

The Contractor will be permitted to mix or blend two or more appropriate materials so as to produce a finished in-place product meeting the specified physical characteristics.

**E. Compaction of Borrow Excavation Material**

Compaction requirements and the method of determining densities for the above types of borrow excavation shall be in accordance with Sections 02260.01 and 02260.03.

**02240.04 METHOD OF MEASUREMENT****A. Original Position Method**

The Engineer may elect to use the original position method for measurement for the various types of borrow excavation. This method shall consist of measuring the volume of borrow excavation, excluding overburden or other unsuitable spoil material, acceptably excavated as above prescribed, measured in its original position by the method of cross sections and computed by the Method of Average End Area.

**B. Contingent Borrow**

When, as a supplement to a specified excavation item, a proposal quantity is provided for an item of Contingent Borrow, then measurement for the contingent item will be based on the quantity in excess of 125 percent of the applicable proposal item for Borrow Excavation as specified in Section 02954.04.

**C. Delivery Ticket Method**

The Engineer may elect to use the delivery ticket method of measurement for the computation of Borrow Excavation quantities. This method shall consist of measuring the volume of borrow excavation in approved hauling vehicles in the following manner:

1. The Contractor shall designate, prior to the start of hauling operations, the identification number of the vehicles to be used. The Engineer will determine the water level capacity of each vehicle so designated. The measured capacity shall be multiplied by a factor of 0.85 to determine the pay volume.

2. The Contractor shall furnish a delivery ticket to the Engineer for each load of borrow material delivered to the Project. Any ticket not signed by the Engineer to acknowledge receipt, will not be used in the computation of the borrow quantity. The ticket shall include the following information:
  - a. The supplier's name
  - b. The County contract number
  - c. The date
  - d. Vehicle identification number
  - e. Type of material delivered
3. If the Contractor requests that the volume of borrow be estimated based upon certified weights shown on the delivery ticket, the Engineer will periodically obtain a loose sample from the material being delivered and determine an appropriate unit weight factor. Where more than one sample is obtained, the average unit weight of all samples will be used to determine the payment volume.

**D. In-Place Method for Utility Trench Backfill**

Measurement for the various types of borrow excavation, when used for utility trench backfill, will be made on the basis of the in-place volume. The in-place volume will be determined based on the trench width as shown on the Standard Details or as noted in the Contract Documents, and the measured depth and length of backfill satisfactorily placed.

**02240.05 BASIS OF PAYMENT**

**A. General**

1. Payment will be made at the unit price bid. The price bid shall include furnishing all labor, tools, equipment, and materials necessary to complete the work as shown and specified in strict accordance with the Contract Documents, and accepted by the Engineer.
2. Payment for borrow excavation will include clearing and grubbing as specified in Section 02110.
3. Payment will be made for contingent items when ordered by the Engineer. Payment will be as specified in Sections 02951, 02952, 02953, 02954, 02955, 02956, and 02957.

**B. Borrow**

Payment for furnishing and placing borrow will be made at the price bid per cubic yard for the types of borrow material furnished and placed. The price bid shall include furnishing, excavating and hauling; clearing, grubbing, sloping, draining, and reclamation of pits (if Method A is selected); the formation and compaction of embankments, backfills, subgrade, and all work and materials for earth except as otherwise specified; and disposing of overburden or other unsuitable spoil material.

When, as a supplement to a specified excavation item, a proposal quantity is provided for an item of Contingent Borrow, then the Basis of Payment for the contingent item will be that quantity which is in excess of 125% of the applicable proposal item for Borrow Excavation as specified in Section 02954.05.