

**SECTION 02230****CHANNEL OR STREAM CHANGE EXCAVATION****02230.01 GENERAL****A. Description**

Channel or stream change excavation shall include, but not necessarily be limited to, excavation for channels and/or stream changes both within and outside of the limits of the highway or site; the removal and proper utilization or disposal of all excavated materials; and constructing, shaping and finishing of all earthwork involved in accordance with the Contract Documents.

**B. Related Work Included Elsewhere**

1. Protection of the environment; Section 01500.
2. General excavation; Section 02210.
3. Erosion Control; Sections 02291, 02292, 02293, 02294, and 02295.

**C. Quality Assurance**

All materials from stream change excavations that are to be incorporated into the work will be subject to test by the Engineer to determine its suitability for the portions of the work in which the material is to be placed. The tests may determine organic content, mechanical properties, bearing capacity, density, stability, or any other properties pertinent to the satisfactory completion of the work indicated.

**D. Submittals**

The Developer, for Developer Projects, shall submit copies of Waterway Construction Permits to the County.

**02230.02 MATERIALS****A. Materials Furnished by the County**

The County will not furnish any materials for channel or stream change excavation other than those materials, which are available within the limits of the project site as designated on the Plans by sections, grade lines, and/or contour lines.

**B. Contractor's Options**

Not used.

**C. Detailed Material Requirements**

Detailed material requirements shall be as specified in Section 02220.02.

**02230.03 EXECUTION**

All suitable materials removed from the excavation shall be used, insofar as practicable, in the formation of embankments or shall be otherwise utilized or satisfactorily disposed of as shown on the Plans or as directed by the Engineer. The completed work shall be in accordance with the established alignment, grades and cross section. During construction, the channel shall be kept drained, insofar as practicable, and the work shall be prosecuted in a neat workmanlike manner and in accordance with Section 02210.03, Article C, Paragraph 1.

**02230.04 METHOD OF MEASUREMENT****A. General**

Excavation will be measured on a volume basis.

**B. Excavation Classification**

1. Work will be measured as Class 5 Excavation, when the flow line of the stream or channel change is in excess of 15 feet in width.
2. When not specified in the Contract Documents, excavation for channel and stream change shall be classified as Class 2 Excavation and the work performed and paid for as described in Section 02210.

**C. Measurement**

Measurement for channel or stream change excavation will be made on the basis of the volume of material actually removed. Material will be measured in its original position and the volume computed by the Method of Average End Area. The cross sectional area measured shall not include water or other liquids but shall include mud, muck, or similar semi-solid material which has not been disturbed by the Contractor and which cannot be drained away. Measurement for channel or stream change excavation shall not include any material removed outside the limits of payment shown on Plans or described in the Contract Documents.

**02230.05 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 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. Channel or Stream Change Excavation**

Payment for channel or stream change excavation will be made at the price bid per cubic yard. The price bid shall include all excavation and hauling; formation and compaction of embankments and backfills; backfilling old channels or otherwise disposing of excess or unsuitable materials.