

SECTION 02314

CHANNEL EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Excavate open channels within the limits shown on the plans, regardless of the type of material encountered, and dispose of any unused excavated materials. Construct, shape and finish all earthwork involved in conformance with the required lines, grades and cross sections, and in accordance with the plans and specification requirements.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Prices.
  - 1. Accepted channel excavation for open channels will be measured in its original position and the volume computed in cubic yards by the method of average end areas in accordance with the lines, grades and cross sections shown on the plans.
  - 2. Refer to Section 01270 - Measurement and Payment for unit price procedures.
- B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

- A. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12.44 ft-lb f/ft<sup>3</sup>).
- B. ASTM D 2216 - Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.
- C. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D 3017 - Standard Test Method for Water content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- E. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.04 MATERIALS:

- A. All excavation shall be unclassified and shall include all materials encountered regardless of their nature or the manner in which they are removed, except those covered by other pay items.
- B. Hazardous Materials. If the Contractor encounters hazardous substances, industrial waste, other environmental pollutants, underground storage tanks, or conditions conducive to environmental damage, Contractor shall immediately stop work in the area affected and report the condition to the Owner's representative in writing. Contractor shall not be responsible for or required to conduct any investigation, site monitoring, containment, cleanup, removal, restoration or other remedial work of any kind or nature (the "remedial work") under any applicable level, state or federal law, regulation or ordinance, or any judicial order. If the Contractor agrees in writing to commence and/or prosecute some or all of the remedial work, all costs and expenses, to include any extension of the contract time, of such remedial work shall be paid by Owner to Contractor as additional compensation.
- C. Existing Structures/Obstructions. Removal of structures and other obstructions prior to excavation and finishing of all other earthwork described herein shall be completed and paid for in accordance with Item 101, "Preparing Right-of-Way" unless otherwise stated on the plans.
- D. Existing Asphaltic Materials. All asphaltic material shall be disposed of or recycled at a facility authorized to accept the material for such purposes.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Provide applicable equipment to conduct work as described in this specification or as specified on the plans.

PART 3 EXECUTION

3.01 CONSTRUCTION

- A. All channel excavation shall be performed as shown on the plans, or specified herein if not denote on the plans, and shall conform to the established alignment, grades and cross sections. Suitable excavated materials shall be utilized, insofar as practicable, in constructing required embankments, or backfilling around drainage structures. Unsuitable excavation or excavation in excess of that needed for construction shall be known as "Waste" and shall become the property of the Contractor and it shall become his sole responsibility to dispose of this material off the limits of the right-of-way. Proper disposal shall be in conformance with, but not limited to, the following provisions:
  - 1. Do not deposit excavated material within jurisdictional wetlands, and

2. Obtain appropriate permits and apply provisions pertaining to soil erosion and stream pollution, when necessary, to meet federal and/or local regulations, rules, and procedures.
- B. Temporary Construction Access. Any temporary construction access that crosses a channel will be constructed so as to allow a continuous flow at all times. The channel flow line will not be blocked or raised at any temporary construction access.
- C. Channel Side Slope (Fill). When the plans indicate fill of a channel side slope, the fill material shall be placed in layers not to exceed 12 inches and shall be benched or notched into existing slopes. Each lift of fill shall be compacted to the required density and moisture content as shown below, unless otherwise shown on the plans:

| SUBGRADE MATERIAL | DENSITY                  | MOISTURE CONTENT        |
|-------------------|--------------------------|-------------------------|
| PI ≤ 20           | ≥ 95% of Max Dry Density | - 2% of Opt. or greater |
| PI > 20           | ≥ 95% of Max Dry Density | ≥ Opt. Moisture         |

The maximum dry density and optimum moisture content shall be determined in accordance with TxDOT Test Method Tex-114-E. Tests for in place density shall be made in accordance with TxDOT Test Method Tex-115-E and within 24 hours after compacting operations are completed. If the material fails to meet the density specified, it shall be re-worked as necessary to obtain the density required.

The fill material shall be free from roots, trash, silt and objectionable debris and shall be approved by the Engineer. The channel side slopes, in fill areas, shall be cut to the finished dimensions after completion of the fill process.

- D. Lateral Ditches. At locations where lateral ditches enter the channel, the Contractor shall perform grading as may be required to maintain lateral ditch side slopes within the easement area. The cost of all grading shall be considered incidental to the unit price bid and no extra payment will be made.
- E. Channel Completion. Prior to final acceptance by the Engineer, the Contractor shall remove all sediment from the bottom of the channel and dispose of this material off site. The cost of sediment removal and grading shall be incidental to the unit price bid, and no extra payment will be made. Revegetation is not required on channels primarily composed of rock.

END OF SECTION

