

## SECTION 02200

### EXCAVATION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Pavement Removal
- B. Preparation
- C. Excavation
- D. Subgrade Preparation

##### 1.2 REFERENCES

- A. PennDOT Publication 408      Specifications
- B. ANSI/ASTM D1556      Density of Soil in Place by the Sand Cone Method
- C. ANSI/ASTM D1557      Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 Pound Rammer and 18-inch Drop
- D. ANSI/ASTM D2922      Density of Soil and Soil Aggregate in place by Nuclear Methods

##### 1.3 QUALITY ASSURANCE

- A. Blasting will not be permitted.
- B. Subgrade preparation may be laboratory and field tested to verify compaction requirements.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to local code requirements for disposal of debris.
- B. Rules and regulations of the various utility companies and other authorities having jurisdiction over such Work shall be observed in the performance of all earthwork operations.

##### 1.5 PROTECTION

- A. Protect existing monuments, bench marks, structures, fences, sidewalks, paving and curbs and other markers before starting Work. Restore any damaged items to original condition or repair as directed.
- B. Protect and maintain above and below grade utilities that are to remain.
- C. Underpin adjacent utilities which may be damaged by excavation work.
- D. The OWNER and ENGINEER shall be notified immediately if any unexpected subsurface

condition, such as buried structures or utility lines is encountered, and discontinue work in that area until notified to proceed. The ENGINEER will determine the disposition of the obstruction. The CONTRACTOR shall adequately protect and support the obstruction until a determination is made and relocate, realign or dispose of the obstruction as authorized by the ENGINEER.

- E. Erect warning lights or other protection as required for the safety of all persons at the excavations.

## PART 2 PRODUCTS

- 2.1 Subsoil: excavated material, graded free of lumps larger than 6 inches, rocks larger than 3 inches and debris.
- 2.2 Common Fill Materials - subsoil; either reused or imported free of lumps larger than 6 inches, rocks larger than 3 inches, roots, organic material and debris.
- 2.3 Accessories:
  - A. Separation Fabric - PennDOT Class 4.

## PART 3 EXECUTION

### 3.1 PAVEMENT REMOVAL

- A. Remove all pavement, including bituminous layers, concrete pavement and stone base, as applicable, within the lines of excavation.
- B. Cement concrete pavements shall be saw cut at the limits of removal and as needed to not damage adjacent curb or other structures.
- C. Bituminous concrete pavements shall be saw cut or milled to neat straight lines at the limits of removal and as needed to not damage adjacent curb or other structures.
- D. All debris and material resulting from the removal shall be removed from the site and disposed of in an approved manner by the CONTRACTOR.

### 3.2 PREPARATION

- A. Identify required lines, levels and contours.
- B. Note the location of all Identified utilities.
- C. Maintain and protect existing utilities that pass through the work area and are to remain in service.
- D. Notify utility companies to remove and/or relocate utilities as required.
- E. Upon discovery of unknown utility or concealed conditions, discontinue Work in the affected area and notify the ENGINEER.
- F. Implement all procedures required for sediment and erosion control.

### 3.3 EXCAVATION

- A. All excavation shall be unclassified.
- B. The CONTRACTOR shall perform all excavation required to construct proposed improvements. All loose material shall be removed from excavations, and bottoms shall be carefully leveled to grade.
- C. None of the above provisions shall be construed to relieve the bidder of his responsibility to make a careful personal examination of the site in order to satisfy himself as to the nature and location of the Work required.
- D. Do not excavate to full depth when rain or freezing conditions are imminent. Where subgrade soil surfaces are damaged by water, mud, or otherwise disturbed, all loose mud or other materials shall be removed and the surface regraded and restored to plan grade with compacted common fill material as authorized by the ENGINEER.

### 3.4 SUBGRADE PREPARATION

- A. After excavating to subgrade elevation and fine grading the subgrade, the subgrade shall be proof rolled as specified in PennDOT Publication 408 to obtain a firm unyielding subgrade. The CONTRACTOR shall notify the ENGINEER at least twenty-four hours in advance of the proofrolling operation, so that his representative can observe the process.
- B. If during the proof rolling operations any soft, unstable or yielding areas are found, they shall be overexcavated to a depth and width as authorized by the ENGINEER and back-filled with common fill or stone subbase compacted to an in-place density of ninety-eight percent of the maximum dry density or otherwise stabilized or modified as authorized by the ENGINEER.

END OF SECTION