

## PART 1 GENERAL

### 1.01 SUMMARY

- A. Section includes site grading and excavating for site improvements and utility trenching.

### 1.02 REFERENCES

- A. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18 inch Drop.
- C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
- E. Utility location standards when working in the vicinity of utility lines.

### 1.03 SUBMITTALS

- A. Identify and describe in as-built drawings all unexpected variations to subsoil conditions or discovery of uncharted utilities, including perforated drain lines and irrigation lines.

### 1.04 COORDINATION WITH CITY FOR POWERLINE RELOCATION

- A. The lump sum base bid shall include five days of coordination with the City for power line relocations. One day shall be defined as when the City is working on-site for more than two hours on the power line relocation. Contact Jonathan Schilk at 360.676.6985 for scheduling and coordination.

## PART 2 PRODUCTS

NOT USED.

## PART 3 EXECUTION

### 3.01 UNCLASSIFIED EXCAVATION

- A. All Excavation is unclassified and includes excavation to subgrade elevations indicated on the plans, or as required to construct the work, regardless of character or materials and obstructions encountered, except as allowed in the provisions for unsuitable excavation.
- B. Excavate as necessary for work shown on drawings or specified. Leave bearing surfaces undisturbed, level and true. Obtain Engineer acceptance of subgrade.

- C. Grade top perimeter of excavation and all work areas to prevent surface water from draining into excavation. All work required to maintain positive drainage is incidental to the work.
- D. Notify Engineer immediately of subsurface conditions that are not as noted in the Geotechnical Report and discontinue affected work in area until notified to resume work.
- E. Unauthorized excavations consist of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of the Engineer. Unauthorized excavation, as well as remedial work required as a result of unauthorized excavation as directed by Engineer, shall be at Contractor's sole expense. Correct areas over excavated with gravel base and compact suitable replacement material as specified for authorized excavation as directed by Engineer.
- F. Remove excavated material from site in a timely manner.

### 3.02 TRENCHING

- A. Do not advance open trench more than 200 feet ahead of installed pipe. All open trenches, regardless of depth shall be covered at the end of the day except as allowed by the Engineer. Exceptions will only be allowed if the trenches are barricaded, provided with lighting, signed, and protected from pedestrian traffic
- B. Provide uniform and continuous bearing and support for bedding material and pipe utilities.
- C. When subsurface materials at bottom of trench are loose or soft, notify Owner's Representative and request instructions.
- D. Remove excavated material from site and deliver to a Contractor provided, permitted disposal site.

### 3.03 UNSUITABLE EXCAVATION

- A. Unsuitable excavation shall be limited to the excavation of material below the grades established by the requirements of the Contract Documents due to encountering unstable or unsuitable earthen subgrades. Determination of the existence and quantity of unsuitable material shall be at the sole discretion of the Engineer.
- B. If it becomes apparent that a change order will be necessary due to encountering unstable or unsuitable earth the following procedure will be followed:
  - 1. A quantity survey shall be made by the Contractor with review by the Owner's Representative.
  - 2. The Engineer will determine if the survey is accurate and will determine if adequate dewatering measures have been established by the Contractor.
  - 3. The total estimated cost based on the Unit Price provisions of this Contract will be determined for additional excavation or material supplied.
  - 4. Excavation or backfill will proceed after agreement is reached by Owner's Representative and Contractor.

### 3.04 SHEETING AND SHORING

- A. The Contractor is solely responsible for all excavation safety systems.
- B. Support trench side walls more than 4 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of the work.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

### 3.05 PROTECTION

- A. Carefully maintain bench marks, monuments, property corners, and other reference points that do not need to be disturbed by the work. The Contractor shall be responsible for establishing the existing coordinate position of any monuments, bench marks or property corners that may be disturbed by the work prior to disturbance. Replacement of said monuments and/or property corners shall be in accordance with professional standards of practice for land survey and applicable City standards.
- B. Prevent loose soil from falling into excavation; maintain soil stability.
- C. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- D. Protect structures, utilities, landscaping, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- E. Identify required lines, levels, contours, and datum locations.

END OF SECTION