SECTION 02260 – EXCAVATION SUPPORT AND PROTECTION

GENERAL

A. Description of Work:

1. Work included:
   a. Shoring and bracing necessary to protect existing buildings, utilities, all existing improvements, and excavation against movement due to caving, to meet OSHA safety requirements of shoring and bracing, and to provide cofferdams.
   b. Maintenance of shoring and bracing.
   c. Removal of shoring and bracing, as required.
2. Shoring and bracing systems include, but are not limited to, permanent and temporary measures.
3. Steel sheet piling: Provide steel sheet piling, to be removed following completion of Work, where shown on the Drawings, or where otherwise required. Payment will be incidental to earthwork necessary to construct the Work. Piling shall remain in place when directed by the RESIDENT. Payment for piling requested by RESIDENT to remain in place will be made by Contract Modification.
   Steel sheet piling may be left in place at the CONTRACTOR'S option if approved by the RESIDENT. No additional payment will be made for this piling.
   No payment will be made for steel sheet piling used for the CONTRACTOR'S convenience.
4. Movable box: Provide where a shoring system is required but sheet piling is not called for. Cost of movable box system is incidental to other work items.
5. Related Work Specified Elsewhere Includes:
   Earthwork: – Section 02300
   Water Distribution: - Section 02510
   Sanitary Sewerage: - Section 02530
   Natural Gas Distribution: - Section 02551
   Underdrain: - Section 02620
   Storm Drainage: - Section 02630
   Stormwater Treatment: - Section 02631

B. Quality Assurance

1. Design: Assign design of shoring and bracing to a Professional Engineer registered in the state of Maine.
2. Regulations: Comply with all applicable local codes and OSHA requirements.

C. Submittals:

1. Certificate of Design: Submit certification of design for shoring and bracing system signed by a Professional Engineer registered in the state of Maine.

D. Job Conditions:

1. Before starting work, check and verify governing dimensions and elevations. Survey condition of adjoining properties with RESIDENT. Take photographs, recording any prior settlement or cracking of structures, pavements, and other improvements. Prepare a list of such damages, verified by dated photographs, and signed by CONTRACTOR, RESIDENT and others conducting the investigation.

2. Survey adjacent structures and improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations. Locate datum level used to establish benchmark elevations sufficiently distant so as not to be affected by excavation operations.
3. During excavation, re-survey benchmarks weekly, employing Registered Land Surveyor or registered Professional Engineer. Maintain accurate log of surveyed elevations for comparison with original elevations. Notify RESIDENT if changes in elevations occur or if cracks, sags or other damage is evident.

PRODUCTS

A Materials:

1. General: Provide suitable shoring and bracing materials which will support loads imposed. Materials need not be new, but should be in serviceable condition and adequate for the intended purpose.
2. Steel sheet piling and shapes (corners, etc.): Utilize continuous interlocking type; section modulus and type of section as required by design.
3. Bracing members: Wood timbers or A36 steel members.
4. Bolts: ASTM A307.

EXECUTION

A. General:

1. Provide system adequately anchored and braced to resist earth and hydrostatic pressures, including surcharges from surface loads.
2. Locate shoring and bracing to clear permanent construction and to permit forming and finishing of concrete.
3. Maintain shoring and bracing while excavation is open.
4. Removal of systems: Remove systems in stages to prevent disturbance of soils and damage to structures and improvements. Fill voids as soon as sheeting is withdrawn.

B. Steel Sheet Piling and Bracing:

1. Drive sheet piling prior to excavation where possible. Fill and compact voids outside sheeting to hold sides of excavation in place.
2. Brace as required to prevent distortion of piling and other bracing members. If necessary to move a brace, install new bracing prior to removal of original brace.
3. As approved by RESIDENT, cut off sheet piling to be left in place at least two feet below finish grade. Indicate location of any sheet piling cut off and left in place on as-built drawings, as required by DEPARTMENT.

*** END OF SECTION ***