

Furnishing and placing backfill will be included in the price for structure excavation and will not be measured for separate payment unless specific material is required by the Engineer and no suitable material is available within the construction limits. When specific material is required for backfill by the Engineer, measurement and payment will be in accordance with the requirements of Section 104.03.

Porous backfill, when a pay item, will be measured in cubic yards of material within the limits shown on the plans or as otherwise directed by the Engineer and will be paid for at the contract unit price per cubic yard.

Pipe underdrains, when a pay item, will be measured in linear feet and will be paid for at the contract unit price per linear foot.

Unsuitable materials removed below the plan foundation will be measured and paid for as structure excavation.

Foundation seals required by the Engineer and that are properly placed for structural adequacy as a part of the planned footing will be accepted as part of the permanent footing. Measurement and payment will be in accordance with the requirements of Section 404.08. Foundation seals that are not required by the Engineer will be included in the price for structure excavation.

Clearing and grubbing within the area defined by lines connecting the extremities of the substructure units, regardless of whether excavation is involved, shall be included in the price for structure excavation unless otherwise specified in the Contract.

Cofferdams will be measured in units of each per foundation and will be paid for at the contract unit price per each. This price shall include furnishing, erecting, maintaining, and removing.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Structure excavation	Cubic yard
Drilled holes	Linear foot
Porous backfill	Cubic yard
Pipe underdrain (Size)	Linear foot
Cofferdams	Each

SECTION 402—SHEET PILES

402.01—Description.

This work shall consist of furnishing and installing the type of sheet piles shown on the plans or specified by the Engineer to be left in place or removed as part of the

finished structure. Other sheet piles used by the Contractor shall be considered incidental nonpay items.

402.02—Materials.

- (a) **Timber sheet piles** shall conform to the requirements of Section 236 and may be of any species of wood that can be driven satisfactorily. Piles shall be free from worm holes, loose knots, wind shakes, decayed or unsound portions, or other defects that might impair their strength or tightness.
- (b) **Concrete and reinforcing steel for concrete sheet piles** shall conform to the requirements of Sections 217 and 223.
- (c) **Steel sheet piles** shall conform to the requirements of Section 228.

402.03—Procedures.

- (a) **Timber Sheet Piles:** Piles shall be sawed with square corners and provided with tongues and grooves of ample proportions, either cut from the solid material or made with three planks securely fastened together. Piles shall be drift sharpened at the lower ends to wedge the adjacent piles tightly together.

The top of piles shall be cut off to a straight line. Piles shall be braced with waling strips that are lapped and joined at splices and corners. Wales shall be in one length between corners and bolted near the top of the piles.

- (b) **Concrete Sheet Piles:** Concrete sheet piles shall be manufactured in accordance with the requirements of Section 403, 404, or 405, as applicable. Installation shall be in accordance with the requirements of Section 403.
- (c) **Steel Sheet Piles:** When assembled in place, pile sections shall be practically watertight at the joints. Painting of steel sheet piles shall be performed in accordance with the requirements of Section 403. Piles shall be provided with tongues and grooves of ample proportions for securely fastening together. Wales and structural supports shall be provided as necessary to ensure structural integrity.
- (d) **Temporary Sheet Piling:** When shown on the plans or directed by the Engineer will be measured in square feet. The horizontal dimensions will be measured continuously along the outer face of the sheet piling. The bottom limit will be the bottom of the excavation shown on the plans or as authorized. The top limit will be original ground line or in areas adjacent to traffic, three feet above original ground line, or as otherwise shown on the plans.

402.04—Measurement and Payment.

Sheet piles will be measured in square feet of piles remaining in place and will be paid for at the contract unit price per square foot. The horizontal dimensions will be measured continuously along the outer face of the piling. For steel sheet piles, the horizontal dimension used shall be not more than the sum of the laying widths or driving dimensions of the individual piles.

Payment for temporary sheet piling will be made at the contract unit price per square foot which price shall be full compensation for furnishing, driving and removing the piling.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Sheet piles (Type)	Square foot
Temporary sheet piling	Square Foot

SECTION 403—BEARING PILES**403.01—Description.**

This work shall consist of furnishing, driving, cutting off, and, when required, load-testing piles of the type and dimensions specified on the plans.

403.02—Materials.

- (a) **Timber piles** shall conform to the requirements of Section 236.
- (b) **Steel piles** shall conform to the requirements of Section 228.
- (c) **Steel shells for cast-in-place piles** shall conform to the requirements of Section 228.
- (d) **Concrete** shall conform to the requirements of Section 217. Concrete exposed to tidal water shall contain slag or silica fume.
- (e) **Reinforcing steel**, Grade 40 or 60, for use in precast or cast-in-place piles, shall conform to the requirements of Section 223.

403.03—Pile Types.

- (a) **Timber Piles:**
 1. **Storing and handling:** Care shall be taken to avoid breaking the surface of treated piles. Cant hooks, dogs, or pike poles shall not be