

ITEM 408

STEEL SHEET PILING

408.1 Description. This item shall govern for the furnishing of steel sheet piling with interlocking joints, in place, of the type and weight and in the locations shown on the plans.

The length of piling shall be as shown on the plans, or as necessary to obtain the required bearing resistance and required minimum penetration.

408.2 Materials.

A. All ferrous metals furnished for use under these specifications shall be manufactured by one of the following processes only:

1. Open-hearth
2. Basic Oxygen
3. Electric Furnace

B. Sheet piling shall conform to one of the following specifications:

1. ASTM A328, Grade A
2. ASTM A572, Grade 50
3. ASTM A690
4. ASTM A857

C. Structural steel for wales, cap and ballast stops shall conform to the requirements of ASTM A588.

D. Bolt and blind fasteners shall be of carbon steel, shall be of the size and grip shown on the plans and shall conform to the requirements of ASTM A325.

E. Other ferrous metals shall conform to the requirements of ASTM A325, with corrosion and coloring characteristics of ASTM A588.

F. Anchor rods shall conform to the requirements of ASTM A36, with upset screw ends conforming to the AISC "Steel Construction Manual".

G. Turnbuckles shall conform to the requirements of the AISC "Steel Construction Manual".

H. Sheet piling, corners, connections and wyes shall be furnished from a single manufacturer. Furnished sheet piling shall be manufactured to assure a continuous interlock throughout the entire length. Sheet piling and interlocks shall be free from excessive kinks, camber or twist that prevent free sliding of pile.

Piling may be provided with standard-size handling holes, located 4-inches from one end and removed at cut-off. Additional length beyond that indicated on plans may be required to provide for trimming of pile tops and removal of handling holes at no additional cost to Harris County.

408.3 Storing & Handling. Materials shall be delivered to the job site free from dirt, loose scale and rust, oil or other foreign material and in accordance with ASTM Designation A6.

Piling shall be stored above the surface of the ground on platforms, skids or other supports to prevent sagging. Piling shall be protected from mechanical damage and surface deterioration caused by exposure to conditions producing rust and corrosion.

The methods of handling shall be such that no bending or warping occurs before and during placement.

408.4 Installation. Steel sheet piling shall be driven at the location and to the elevation shown on the plans or as designated by the Engineer. Piling shall be driven to within 0.5 foot of the founding elevation shown on the plans and shall be driven within 2 inches of plumb. When using ball and socket piling, drive the socket end over the ball end. Sheet piling shall be driven in accordance with the Item, "Driving Steel Piling". Jetting is prohibited. The pile driving equipment shall include a helmet compatible with the shape of the sheet pile. Any piling damaged during the course of construction shall be replaced at no additional cost to Harris County.

408.5 Cut-Offs. After the pile has been driven to the approximate penetration and to the bearing resistance required, it shall be cut-off square at plan grade, or to the grade established by the Engineer. The top of piling shall be straight and true with the lip metal removed and shall be within 0.08 foot of the plan elevation.

408.6 Anchor Rods & Turnbuckles. Anchor rods shall be installed in the minimum width and depth of trench, located as shown on the plans. Clear threads of burrs and foreign matter and lubricate rod threads with suitable material immediately before installing nut or turnbuckle. No less than three full thread shall extend beyond the outside face of nuts

and inside face of turnbuckles, at time of final project acceptance. Rod material extending more than 2-inches beyond the face of exposed nut shall be removed.

408.7 Field Welding. Welding of sheet piling, if required, shall be with low hydrogen type electrode in accordance with the Structural Welding Code, AWS D1.1. Splices shall only be butt welded. No butt welds shall be visible (exposed) at the completion of the project. Deposited material for welds of sheet piling shall have a similar atmospheric corrosion resistance as the sheet piling. Splicing of two consecutive piles will not be permitted.

408.8 Final Surface Treatment. Contractor shall brush blast visibly exposed surfaces of sheet piling to remove mill scale, oil, rust, or other blemishes. Brush blast shall produce a uniform color and texture throughout entire wall surface.

Sheet piling shall not be painted before driving. After driving and capping, all exposed portions of the piling shall be cleaned and painted, if required, in accordance with the Item, "Cleaning, Paint and Painting".

408.9 Measurement. Steel sheet piling shall be measured by the horizontal linear foot of acceptable piling, in place, driven to the depth shown on the plans. Sheet piling driven below the elevation required by the plans or as directed by the Engineer, will not be measured for payment. No measurement will be made for cut-offs or splices.

408.10 Payment. Payment for steel sheet piling shall be made at the contract unit price bid per horizontal linear foot complete in place, which price is full compensation for furnishing all materials, driving, equipment, labor, tools and incidentals necessary to complete the work.

Anchor rods, wales, caps and fasteners, when shown on the plans, shall be included in the contract unit price bid per horizontal liner foot of steel sheet piling.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 408

SUMMARY SHEET

ITEM 408 - STEEL SHEET PILING

Other Specifications Required

Item 443 - Cleaning, Paint and Painting
Item 404 - Driving Steel Piling

Reference Standards

1. AISC "Steel Construction Manual"
2. ASTM Standards
 - A6
 - A36
 - A325
 - A328
 - A572
 - A588
 - A690
3. Structural Welding Code AWS D1.1

Description:

Describes furnishing and the installation of new rolled steel sheet piling with interlocking joints.

Plans indicate nominal and upset diameters of anchor bolts and locations and elevations of pilings. Plans also indicate location of anchor rods.

Payment:

Steel sheet piling will be paid by the contract unit price per horizontal linear foot for the size shown on the plans and driven to the depth shown on the plans. Includes anchor rods, wales, caps and fasteners. Sheet piling driven below elevations on plans, will not to be measured for payment.

DO NOT INCLUDE THIS SHEET IN THE CONTRACT SPECIFICATIONS