

SECTION 452
SHEET PILE RETAINING WALLS

452-1 DESCRIPTION

Construct sheet pile retaining walls consisting of steel sheet piles for permanent applications. Provide cast-in-place reinforced concrete coping as required. Construct sheet pile retaining walls with the required embedment below bottom of wall elevations in accordance with the contract and accepted submittals. Define a "sheet pile wall" as a sheet pile retaining wall.

452-2 MATERIALS

Refer to Division 10.

Item	Section
Curing Agents	1026
Joint Materials	1028
Portland Cement Concrete, Class A	1000
Reinforcing Steel	1070
Steel Sheet Piles	1084-2

452-3 CONSTRUCTION METHODS**(A) Sheet Pile Wall Surveys**

The plans typically show a plan view, typical sections, details, notes and an elevation or profile view (wall envelope) for each sheet pile wall. Before beginning sheet pile wall construction, survey existing ground elevations along wall face locations and other elevations in the vicinity of sheet pile wall locations as needed. Use the accepted wall envelopes for construction.

(B) Sheet Pile Installation

Install sheet piles with tolerances that meet Subarticles 450-3(B)(1) and 450-3(B)(2). Install sheet piles with the minimum required pile tip elevations in accordance with Subarticle 450-3(D).

(C) Concrete Coping

Construct concrete coping in accordance with the plans and Section 420. Do not remove forms until concrete attains a compressive strength of at least 2,400 psi. Provide a Class 2 surface finish for coping that meets Subarticle 420-17(F).

Construct coping joints at a maximum spacing of 10 ft. Make a 1/2" thick expansion joints that meet Article 420-10 for every third joint and 1/2" deep grooved contraction joints that meet Subarticle 825-10(B) for the remaining joints. Stop coping sheet pile 2" on either side of expansion joints.

(D) Backfilling and Sealing Joints

When concrete coping is required, do not backfill until concrete attains a compressive strength of at least 3,000 psi. Backfill behind sheet pile walls in accordance with Article 410-8.

Seal joints above and behind sheet pile walls between coping and ditches with joint sealer.

Section 454

1 **452-4 MEASUREMENT AND PAYMENT**

2 *Sheet Pile Retaining Walls* will be measured and paid in square feet. Sheet pile walls will be
3 measured as the square feet of exposed wall face area with the wall height equal to the
4 difference between the top and bottom of wall elevation. Define “top of wall” elevation as the
5 top of coping or top of piles for sheet pile walls without coping. Define “bottom of wall”
6 elevation as shown in the plans and no measurement will be made for portions of sheet pile
7 walls below bottom of wall elevations.

8 The contract unit price for *Sheet Pile Retaining Walls* will be full compensation for providing
9 submittals, labor, tools, equipment and sheet pile wall materials, installing sheet piles,
10 excavating, backfilling, hauling and removing excavated materials and supplying sheet piles,
11 backfill, coping and any incidentals necessary to construct sheet pile walls.

12 The contract unit price for *Sheet Pile Retaining Walls* does not include the cost for fences,
13 handrails, ditches, guardrail and barriers associated with sheet pile walls as these items will be
14 paid for elsewhere in the contract.

15 Where it is necessary to provide backfill material from sources other than excavated areas or
16 borrow sources used in connection with other work in the contract, payment for furnishing
17 and hauling such backfill material will be paid as extra work in accordance with
18 Article 104-7. Placing and compacting such backfill material is not considered extra work but
19 is incidental to the work being performed.

20 Payment will be made under:

Pay Item	Pay Unit
Sheet Pile Retaining Walls	Square Foot

21 **SECTION 454**
22 **WATERPROOFING AND DAMPPROOFING**

23 **454-1 DESCRIPTION**

24 Waterproof or dampproof concrete surfaces in accordance with these specifications for the
25 particular method of waterproofing or dampproofing called for in the plans. Furnish and
26 apply all asphalt, tar, fabric, asphalt plank and any other materials.

27 **454-2 MATERIALS**

28 Refer to Division 10.

Item	Section
Asphalt Binder	1020-7(B)
Asphalt Primer	1020-7(A)
Tar	1020-7(C)
Woven Cotton Fabric	1020-7(D)

29 **454-3 METHOD A WATERPROOFING**

30 **(A) General**

31 Method A waterproofing consists of one coat of asphalt primer, and 3 mop coats of hot
32 asphalt cement with 2 layers of cotton fabric alternating between the mop coats.

33 **(B) Preparation of Surface**

34 Ensure that concrete surfaces are dry, reasonably smooth and free from projections or
35 holes which are capable of puncturing the membrane. Immediately before applying the
36 waterproofing, thoroughly clean the surface of dust and loose materials.

37 Make sure that the concrete is at least 14 days old for Class A concrete, at least 10 days
38 old for Class AA concrete, or at least 7 days old for high early strength concrete, before