ITEM 10594.10 M - TREATED TIMBER FOR FENDER SYSTEM

DESCRIPTION

This work shall consist of furnishing and placing treated timber and associated steel and stainless steel hardware for the fender system, including the navigation clearance gauges, as indicated on the Plans and in accordance with these specifications.

MATERIALS

1. Treated Timber

   The treated timber shall conform to the requirements of Subsection 712 - 14, except that it shall be Southern Yellow Pine Dense Structural Grade 65 in accordance with ASTM D245. The timber shall be S4S square edged and grade marked.

   All timber, except walkway and railing timber, shall be impregnated with creosote oil by the full cell process, and shall comply with the current American Wood Preservers Association Standard No. C18 for Standard for Pressure Treated Piles and Timbers in Marine Construction. The amount of preservative retained shall not be less than 400.5 kg per cubic meter of timber.

   Walkway and railing timber shall be Copper Chromium Arsenate (CCA) treated to a retention of 40 kg per cubic meter as specified by AWPA Standard No. C18 for Pressure Treated Piles and Timbers in Marine Construction.

2. Fasteners and Hardware

   Fasteners for timber fender system shall include tie rods, bolts, nuts and washers, and lag screws. Type 316 stainless steel. Fasteners shall be as follows:

   A. Bolts shall be machine type bolts and nuts shall be regular type nuts. Machine bolts and regular nuts shall be of Type 316 stainless steel, square head type.

   B. For the type of washers to be used, see the Plans.

   C. Lag screws shall conform to Federal Specifications FF-B-561.

   D. Splice plates shall be 15.9 mm thick Type 316 stainless steel plate.

   E. Tie and anchor rods shall conform to the requirements of ASTM A276, Type 316 Stainless Steel.

CONSTRUCTION DETAILS

1. All treated timber shall be carefully handled, and properly stored so as to avoid damaging the pile. Any tool that will break the surface of the pile, i.e. Canthooks,

pikepoles, etc., shall not be used.

2. The Contractor shall attach timber walers and blocking to timber piles as shown on the Plans.

3. The Contractor shall accurately cut and frame all timber in such a manner that the joints will have a close, tight fit over the entire contact surfaces. The Contractor shall secure the timbers in their proper alignment. No shimming will be permitted in making joints nor will open joints be accepted. Only full length timbers shall be used.

4. All cutting, framing, and borings of creosoted timber shall be done before treatment whenever practicable. All cut surfaces, bolt holes and all surface breaks that do not warrant the rejection of the timber shall be thoroughly brush coated with three successive applications of a mixture of 60% creosote oil and 40% roofing pitch. Any unfilled bolt holes, after being treated, shall be plugged with creosoted plugs.

5. Holes for round drift-bolts and dowels shall be bored with a bit 1.5 mm less in diameter than the bolt or dowel to be used. The diameter of holes for square drift-bolts or dowels shall be equal to the least dimension of the bolt or dowel. Holes for machine bolts shall be bored with a bit of the same diameter as the bolt. Holes for rods shall be bored with a bit 1.5 mm greater in diameter than the rod. Holes for lag screws shall be bored with a bit no larger than the body of the screw at the base of the thread.

6. Bolt heads, washers, and plates on the channel faces of fenders shall be countersunk in timber or metal. Recesses formed for countersinking shall be painted with hot creosote oil and after the bolt or screw is in place, shall be filled with hot roofing pitch.

7. Before driving bolts, hot creosote oil; shall be poured into all bolt holes in such a manner that the entire surface of the hole shall be thoroughly coated with the oil. Any unfilled holes, after being treated with creosote oils, shall be plugged with creosoted plugs.

8. The minimum distance from the heads of all bolts to the end or edge of the timbers shall be 50 mm.

9. Washers of the various types indicated and specified shall be used under bolt heads and nuts. The Contractor shall check all bolts by burring the threads after the nuts have been finally tightened. Vertical bolts shall have the nuts on the lower ends.

10. Navigation clearance gauges shall be Marine plywood sealed , primed and finished painted (2 coats) in accordance to current U.S. Coast Guard requirements. Reflective sheeting for navigation clearance gauges shall consist of spherical lens elements embedded with a transparent plastic having a smooth, flat outer surface. The sheeting shall be weather resistant and shall have a protected, pre-coated adhesive backing. The background shall be a silver-white color and the applied copy shall be black. The

numerals shall be sized according to the Standard Alphabet for Highway Signs of the Federal Highway Administration. The height of the lettering is as shown on the Plans.

METHOD OF MEASUREMENT

The quantity to be paid for treated timber will be the actual number of cubic meters placed in the completed work, based on the nominal dimensions and actual lengths without deduction for bevels, notches, cuts and splices. No allowance will be made for waste.

The Engineer may require that the measurement for payment of the treated timber be performed prior to installation.

BASIS OF PAYMENT

The unit price bid per cubic meter shall include the cost of furnishing all labor, materials including timber and hardware, and equipment necessary to satisfactory complete the work as indicated on the Plans and as directed by the Engineer.