

ITEM 607.98 08 – WOOD NOISE BARRIER SYSTEM

DESCRIPTION:

This work shall consist of furnishing and erecting a wood noise barrier with gates, consisting of Plywall Panels manufactured by Hoover Treated Wood Products, Inc., supported by Parallam PSL posts as manufactured by Trus Joint MacMillan. The noise barrier shall be of the type, size, locations and to the heights or elevations shown on the plans or as directed by the engineer. Alternate methods of fabrication may be proposed in writing which retain the basic appearance and function of the standard design. The Department will be sole judge of whether or not any alternative is acceptable and such acceptance must be in writing.

Contractor shall additionally supply engineer with ten (10) 1.22 m x 2.44 m (4' x 8') sound barrier panels, four (4) 175 mm x 302 mm x 7.3 m (7" x 11 7/8" x 24') support posts and ten (10) gallons of stain for future maintenance and repair work to barrier.

The wood noise barrier shall consist of posts, panels, gates and all other associated members, attachments, hardware, and fasteners necessary to fabricate and erect the barrier. Post spacing for panel system shall be as specified in the plans, or as ordered by the engineer. Wood noise barrier shall withstand a wind load of 1.5 kN/m² (30 PSF) and have a design life of 30 years, or more.

MATERIALS:

The material used to construct the wood noise barrier detailed on the plans shall meet the requirements specified in the following subsections of the Standard Specifications:

Wood Preservative – Water Borne (additionally in conformance with American Wood Preserver's Association Standards (AWPA) C9 and C33)	708-31
Stress Graded Timber and Lumber	712-14
Paints – General	708-01
Painting Timber & Lumber	740-02

SOUND BARRIER PANELS

Panels shall be fabricated as (one, two, three or four) piece "Plywall" panels 0.91m to 4.27m (3 ft. to 14 ft.) high by typically 1.22 m to 2.44 m (4 ft. to 8 ft.), wide or as shown on the plans, as manufactured by Hoover Treated Wood Products, Inc. Panels design shall have been tested in accordance with ASTM E-90 and ASTM E-413 and shall result in a sound transmission class of 31 or better. Panels shall consist of a structurally sound frame of 38 mm x 89 mm (2" x 4", nominal) Southern Yellow Pine lumber, surfaced four sides, covered on both panel faces by shiplap-jointed, APA-303 specialty siding, Southern Pine, exposure durability classification Exterior, Texture 1-11, 5-ply, 15 mm (19/32") thick, grooves 200 mm (8") o.c., wood patches. All wood used in panel construction shall be pressure preservatives treated with an arsenic – and chromium free Alkaline Copper Quaternary (ACQ) preservative to a minimum net retention of 9.6 kg/m³ (0.60 pcf) in accordance with §708.31 and additional AWP standards. All plywood siding and 38 mm (2", nominal) lumber shall be kiln dried after treatment to a moisture

ITEM 607.98 08 – WOOD NOISE BARRIER SYSTEM

content of 19% or less. All panel sections shall be fabricated prior to shipment. All panels shall have two nylon lifting webs, securely attached along the top.

SUPPORT POSTS

Wood posts shall be as dimensioned and at lengths as determined from the plans, Parallam PSL Southern Pine Parallel Strand Lumber, 2.0 E, as manufactured by Trus Joist MacMillan. Minimum net retention of preservative shall be 9.6kg/m^3 (0.60 pcf) ACQ. Posts shall be bundled so that each layer is separated by wood spacers to allow air drying after treatment.

CAPS

Post and Panel Caps shall be constructed of 19 mm (1", nominal) Southern Pine, surfaced four sides. Minimum net retention shall be 9.6 kg/m^3 (0.60 pcf) of ACQ preservative. Cap assembly and attachment shall be as shown in contract plans.

CLEATS

Vertical cleats for attaching panels to wood posts shall be 89 mm x 89 mm (4" x 4", nominal) or 89 mm x 140 mm (4" x 6", nominal) Southern Pine timber, surfaced four sides. Minimum net retention shall be 9.6 kg/m^3 (0.60 pcf) of ACQ preservative. Cleats shall be spiked to posts. Holes in cleats shall be predrilled for fasteners prior to shipment.

FASTNERS

All nails, spikes, nuts, washers, lag bolts and hardware shall be stainless steel or as indicated on the contract plans.

GATES

Gates shall be fabricated with the material identified under "Materials – Sound Barrier Panels" and in accordance with the contract plans.

SOURCING

All Wood Noise Barrier System Materials, including posts, panels, gates and cleats shall be treated and fabricated at one location. The following is a list of known suppliers: Hoover Treated Wood Products, Inc., 1-800-983-9997.

ITEM 607.98 08 – WOOD NOISE BARRIER SYSTEM

CONSTRUCTION:

MATERIAL UNLOADING AND STORAGE

Contractor shall provide suitable unloading equipment and storage space for Noise Barrier Materials. Noise Barrier Materials shall be kept off the ground and shall be protected from mud splatter staining, vandalism or physical damage. Unload and store in accordance with manufacturers recommendations.

POST HOLES

Post holes shall be excavated to the require diameter and depth, as determined by the contract plans or as ordered by the engineer.

POST SETTING

Posts shall be set plumb and in precise position to accept panels and shall be braced in such a manner as to remain plumb and in the required lateral position during backfilling. Post spacing shall allow clear spans between posts equal to the panel width plus a maximum 16 mm (5/8") each side of panel, tolerance. In no case shall the erection tolerance between posts exceed 32 mm (1¼ inches).

STAINING

Contractor shall apply 100% coverage of a solid-color acrylic-latex stain to noise barrier system, minor touch-up field staining shall be made as ordered by the engineer after final placement of the noise barrier. Stain color shall be Federal Standard Color 30108, or equal as approved by Regional Landscape Architect. Contractor shall provide stain manufacturer's brochure with color schedule and manufacturers recommended procedures application to the engineer and Regional Landscape Architect for approval. Staining shall be applied only to dry wood which is free from surface deposits. Apply staining in accordance with Section 740-02, or in a manner approved by the engineer.

BACKFILLING

Backfill in accordance with material and manner indicated in the contract plans.

ATTACHMENT OF REAR CLEATS

Attachment of cleats shall be as shown on the plans, if no procedure for attachment is shown, then the contractor shall use these following procedures. Prior to setting panels, the rear cleats shall be fully attached to each post to support the Noise Barrier panels during placement. Cleats shall be placed at an elevation that will insure support of the panel over the entire height. The rear edge of the cleat shall be flush with the rear face of the post. The cleats shall be attached with stainless steel spikes, as shown on the contract plans or as directed in the installation procedures for Plywall Barriers.

ITEM 607.98 08 – WOOD NOISE BARRIER SYSTEM

SETTING PANELS

Noise Barrier panels shall be lifted by the provided lift straps and seated firmly against the prefixed rear cleats in a manner which maintains panel plumb and level while providing a maximum tolerance of 16 mm (5/8”) each side of posts. The panel will then be secured by attaching the front cleats to the posts along the unsecured panel face. Nails shall not be driven into the panel. Note: Front cleats shall be firmly and securely fixed to the post at both ends before releasing lifting straps.

PANEL BOTTOM EMBEDMENT

Bottom of panels shall be embedded in bermed and cut areas to prevent the passage of sound and to provide drainage. There shall be no visible voids between bottom of panel and final grade.

FIELD TRIMMING OF POST TOPS

After panels have been set, the post tops shall be rough trimmed with a square cut as shown on the plans.

FIELD MODIFICATIONS/END CUTS

Treat all cuts of ACQ preservative – treated wood members with field-applied ACQ coating prior to installation. ACQ field coating shall be applied in accordance with ACQ product manufacturer’s recommended procedures. Touch-up field staining as ordered by the engineer.

DISPOSAL OF TREATED WOOD SCRAPS

Contractor is responsible for disposal of treated wood scraps in accordance with Federal, State, and Local regulations.

CERTIFICATION WARRANTY

The contractor shall submit a certificate stating his compliance with these specifications and the plans. Contractor shall submit to the engineer the manufacturer product warranty document for the Wood Noise Barrier System.

METHOD OF MEASUREMENT

The Noise Barrier System will be measured by the total number of square meters of the noise barrier measured from the top to the bottom of the wall panels and from center to center of posts. Only one side of the barrier will be measure for payment.

ITEM 607.98 08 – WOOD NOISE BARRIER SYSTEM

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, material (including “additional” material identified under item description), equipment, tools, and field modifications necessary to perform the work, and any costs incurred in obtaining approval for alternate designs. WOOD NOISE BARRIER SYSTEM is eligible for partial payment in accordance with 109-04, PARTIAL PAYMENT. No additional payment shall be made for samples required by the engineer.

Spec DisApproved - Delamination Problems