Important: Warranty Disclaimer for Plans

For the convenience of our clientele, this website makes available conceptual plans that can be helpful in planning buildings, facilities, or other structures. They were developed over many years by engineers at Land Grant universities through the former USDA Cooperative Farm Buildings Plan Exchange. Regardless of the original intent, these are older plans that provide conceptual information only, and are not to be considered or used as construction plans.

These plans do not claim to represent the most current technology or the most recent construction techniques, standards, or codes. For example, over the years there have been changes in the National Design Specifications for Wood Construction, changes in the strengths and types of building materials, and changes in fasteners, among other things. Those changes, along with variations in climate, building codes, and other factors, make it imperative that professional services be utilized for your specific project. Suggested services include, but are not limited to, structural design, assurance of compliance with codes and regulations, site selection, construction supervision, and provision for utilities, waste management, and access. These plans do not replace the need for competent design assistance in developing safe, legal, and well-functioning agricultural buildings and systems.

Neither the University of Kentucky, the Midwest Plan Service, the United States Department of Agriculture, nor any of the cooperating Land Grant universities, warranty these plans. They are for conceptual use only and are not for use as construction plans.
**TYPE I**

**TOP VIEW**
SHELVES CUT AWAY

See Detail A

- Plywood gusset, notched for 1 3/8" diameter uprights and drilled for 3/8" bolts
- Top shelf is held in place by fixed pins set in the uprights
- Lower shelves are secured by fixed or loose pins
- Glue and pin all joints
- Pin holes 50° apart
- 1" x 8" stiffener glued and screwed to bottom shelf
- 1/2" plywood shelves

**SECTION**
At frame

- 3/8" diam gusset
- 2 1/2" x 4" carriage bolt
- 3" x 16" carriage bolt
- Base 2 x 4" taper from center then cut off point

**DETAIL A**
Scale: 1" = 1'-0"

**MATERIALS**

<table>
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<tr>
<th>ITEM</th>
<th>SIZE</th>
<th>NO.</th>
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<td>Wood</td>
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<td>Four</td>
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<td></td>
<td>1 1/4&quot; x 8&quot; x 8&quot; - 0&quot;</td>
<td>Four</td>
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<td></td>
<td>1&quot; x 8&quot; x 8&quot; - 0&quot;</td>
<td>One</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; x 6&quot; x 0&quot;</td>
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(Fastenings not included)

**TYPE II**

**TOP VIEW**
SHELVES CUT AWAY

See Detail B

- 2" notches 50° apart
- 3/4" plywood frame panels
- 1/2" plywood shelves

**SECTION**
At frame panel

- 5/8" x 1 1/4" carriage bolts
- 1/2" x 1" steel strap bent to form eye for pin as shown

**DETAIL B**
Scale: 1" = 1'-0"

**MATERIALS**

<table>
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<tr>
<td>Wood</td>
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</table>

(Fastenings not included)

**USE EXTERIOR GRADE PLYWOOD**
SAND ALL EDGES AND SEAL WITH A WATERPROOF PENETRATING SEALER.
WATERPROOF GLUE IS REQUIRED.

**HEIGHT OF TYPE I MAY BE AS DESIRED, BUT HEIGHT OF TYPE II IS PLANNED TO PERMIT CUTTING THE FOUR FRAME PANELS FROM ONE SHEET OF PLYWOOD.**

**SHELVES FOR TYPE II MAY BE OF 1/2" PLYWOOD IF 1"x8" STIFFENERS ARE FASTENED UNDER THE BOTTOM SHELF, AS SHOWN FOR TYPE I.**

**SCALE 1" = 1'-0", EXCEPT AS NOTED**