

CONSTRUCTION PLANS & BILL OF MATERIALS FOR METAL ROOF POST-ROW TOBACCO CURING STRUCTURE¹

This plan shows a post-row type tobacco curing structure with a metal roof. Refer to U.K. Coop. Extension Service publication ID-116 for further information on wood species data, tobacco hanging and management details.

1. CONSTRUCTION:

Due to differences in strength of full dimension saw mill lumber (2" actual thickness) and dressed lumber (1 1/2" actual thickness), the metal-roof design uses a 13'-9" post spacing for full dimension lumber and 11'-9" post spacing for dressed lumber for suitable support of the metal covering and strength against strong winds. Proper joint fabrication and use of pole-barn type nails as shown is necessary for the required strength. Side plastic protection can be added by nailing a 2 x 4 at the eave and attaching 7' wide plastic with a lath strip or other fastener, and using twine to hold the plastic against tobacco.

2. CAPACITY:

The capacity of a 96 ft structure (using 7 sections of 13'-9") or 94 ft structure (using 8 sections of 11'-9") is as follows:

Table 1. Sticks per 13'-9" Section
(13'-3" Actual Clear Space)

<u>Stick Spacing</u>	<u>No. of Sticks</u>
5.5 inch	58
5.0 inch	64
4.5 inch	71
4.0 inch	79

Table 2. Sticks per 11'-9" Section
(11'-3" Actual Clear Space)

<u>Stick Spacing</u>	<u>No. of Sticks</u>
5.5 inch	50
5.0 inch	54
4.5 inch	60
4.0 inch	68

NOTE: The 5.0-5.5-inch spacing should be used for large barely-wilted tobacco with potential yields over 3,000 lbs per acre. The 4-inch and any closer spacings should be used only for smaller well-wilted tobacco that may yield less than 2,500 lbs per acre. Weather conditions during the cure will affect the quality of the cure with any spacing.

Table 3. Capacity of a 96 ft. Framework
(Based on seven 13'-9" Sections)

<u>Stick Spacing</u>	<u># Sticks</u>	<u>Acre</u>
5.5 inch	405	0.35
5.0 inch	445	0.39
4.5 inch	495	0.43
4.0 inch	557	0.48

Table 4. Capacity of a 94 ft. Framework
(Based on eight 11'-9" Sections)

<u>Stick Spacing</u>	<u># Sticks</u>	<u>Acre</u>
5.5 inch	393	0.34
5.0 inch	432	0.38
4.5 inch	480	0.42
4.0 inch	540	0.47

NOTE: Acreage capacity based on about 6915 plants per acre, 6 plants per stick (40" x 22" plant spacing at 97% stand).

¹ by George Duncan, Ext. Spec., Biosystems & Agric. Engr. Dept., Coll. Of Agric., Univ. of Ky. April 27, 2001

3. BILL OF MATERIALS:

Table 5. Materials for a 13'-9" Section

<u>Item</u>	<u>Quantity</u>	<u>Size</u>
Posts (When Hanging from Wagon Bed)	1*	5.5-6.0" x 14'
Posts (When Hanging from Ground Level)	1*	5.5-6.0" x 12'-6"
Tier-rails	3	2 x 6 x 14'
Rafters	4*	2 x 4 x 8'
Mid-span spt	1	2 x 6 x 4'
Mid-span spt	1	1 x 6 x 15"
Purlins	6	2 x 4 x 14'
Metal Roof	14	26" x 54"*** **(or 126 sq. ft. for 54" length) **(or 140 sq. ft. for 60" length)
Plastic Nailing Member	2	2 x 4 x 14'
Lath Strip	2	½ x 1 ½ x 14'
Nails	Assorted	As required

*Note: for last end section add one post and two 2 x 4 x 8' for rafters.

Posts in ground contact should be rot resistant species, or preservative treated. All above ground lumber can be pressure treated for longer life.

Table 6. Materials for a 11'-9" Section

<u>Item</u>	<u>Quantity</u>	<u>Size</u>
Posts (When Hanging from Wagon Bed)	1*	5.5-6.0" x 14'
Posts (When Hanging from Ground Level)	1*	5.5-6.0" x 12'-6"
Tier-Rails	3	2 x 6 x 12'
Rafters	4*	2 x 4 x 8'
Mid-span spt	1	2 x 6 x 4'
Mid-span spt	1	1 x 6 x 15"
Purlins	6	1 x 4 x 12'
Metal Roof	14	26" x 54"*** **(or 126 sq. ft. for 54" length) **(or 140 sq. ft. for 60" length)
Plastic Nailing Member	2	2 x 4 x 12'
Lath Strip	2	½ x 1 ½ x 12'
Nails	Assorted	As required

*Note: for last end section add one post and two 2 x 4 x 8' for rafters.

Posts in ground contact should be rot resistant species, or preservative treated. All above ground lumber can be pressure treated for longer life.

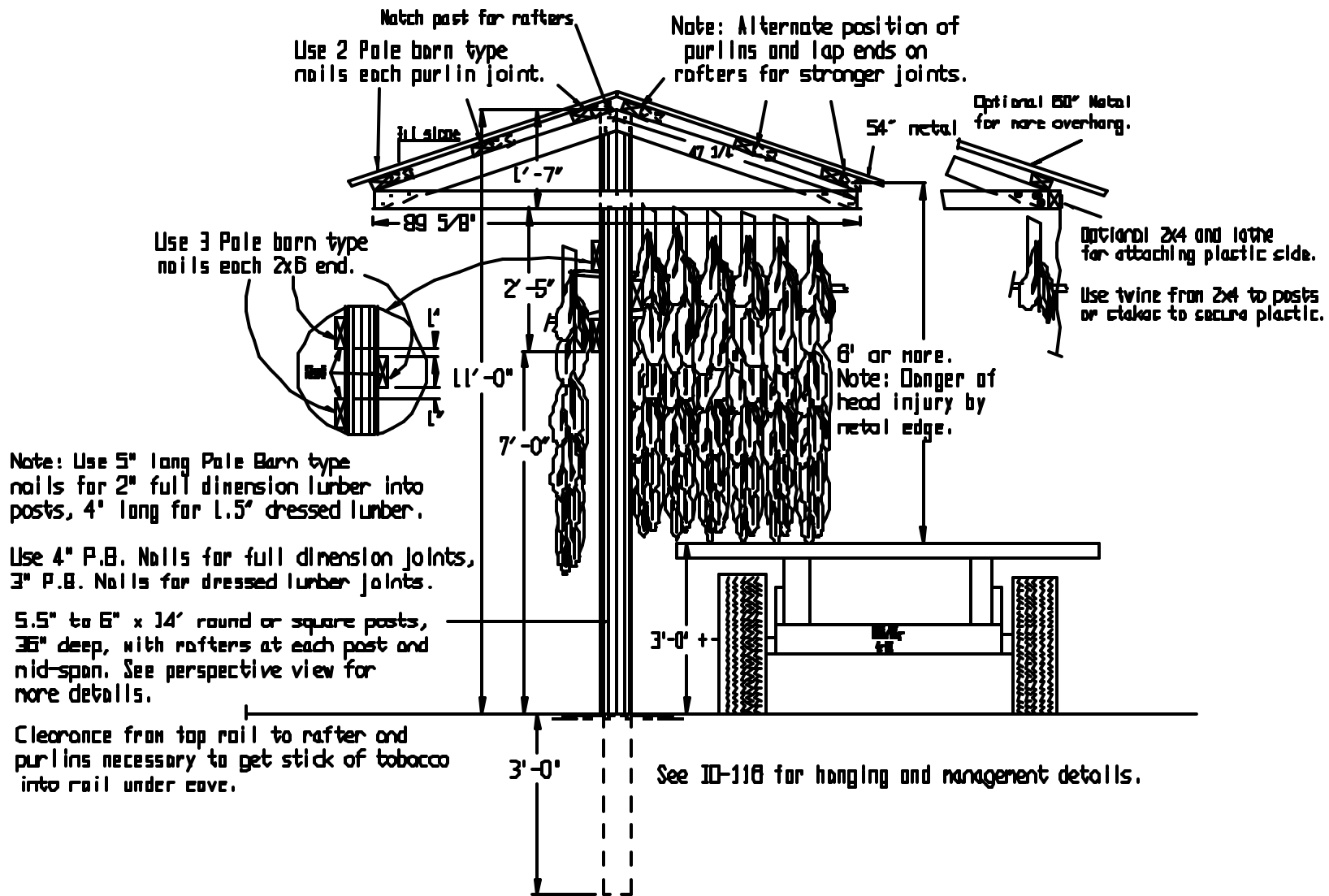


Fig. 1. Post-Row Metal-Roof Construction for hanging directly from wagon bed.

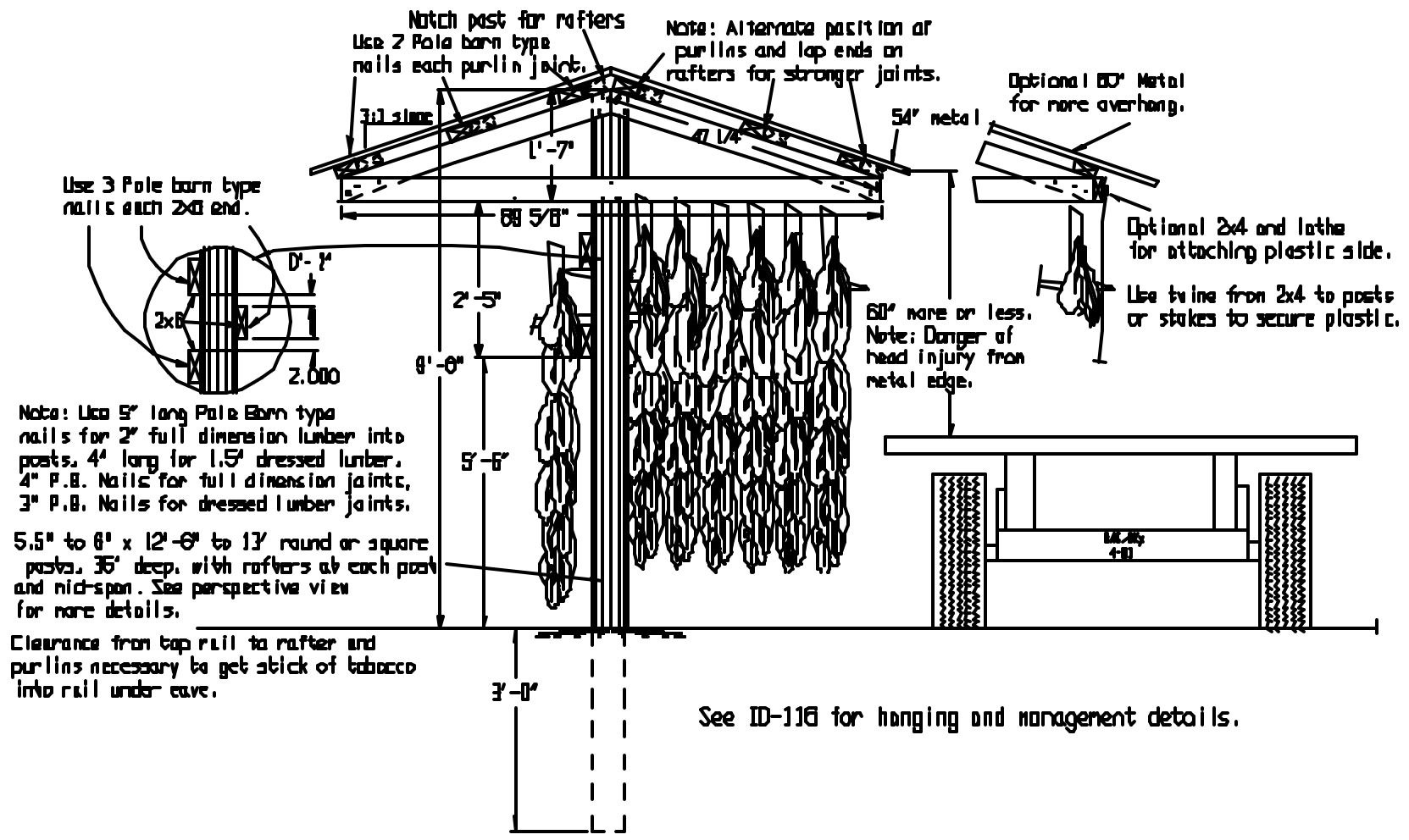


Fig. 2. Post-Rail Metal-Roof Construction for hanging from ground level.

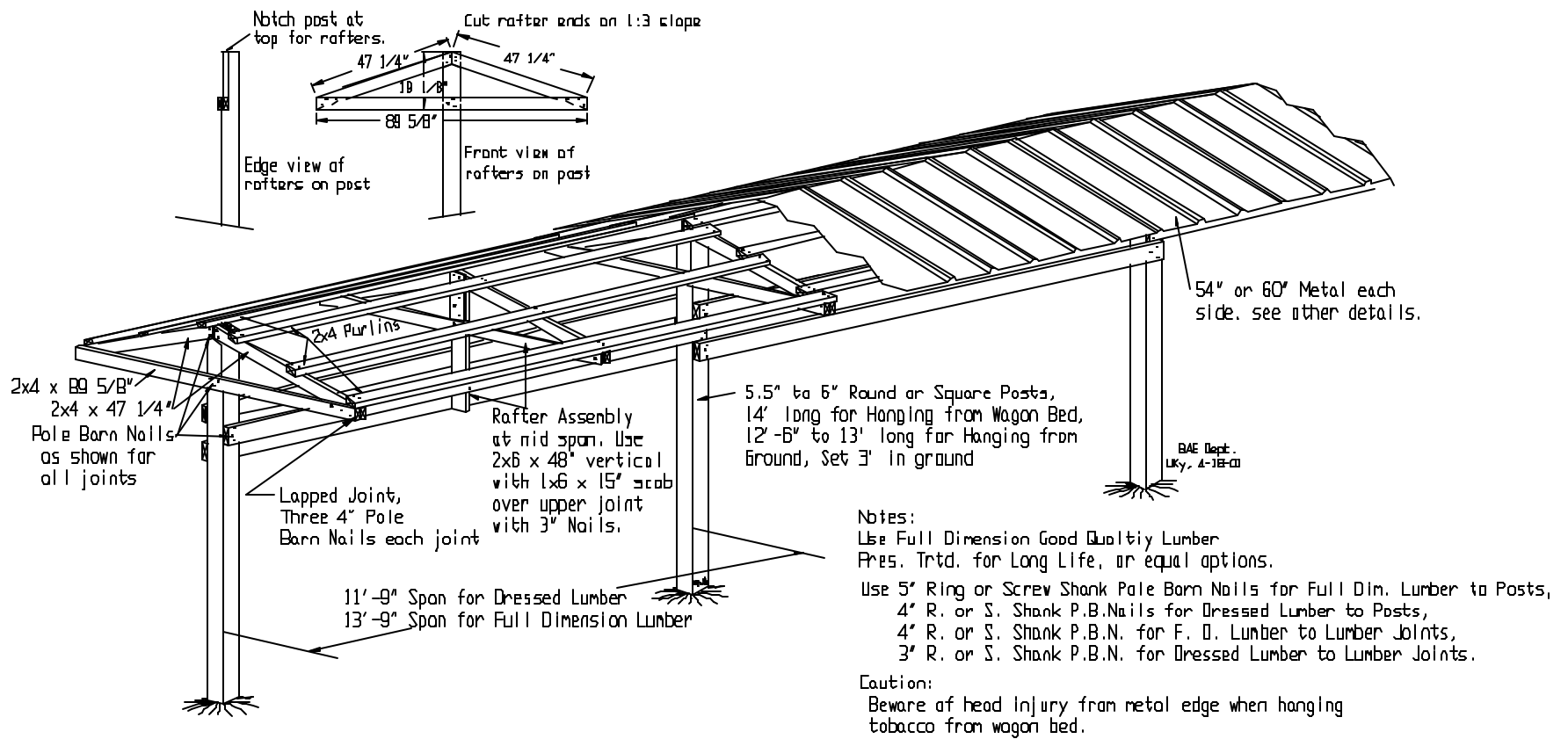


Fig. 3. Perspective of Past-Row Field Curing Structure with Metal Roof