

# Dating Barns in Holland Township, New Jersey with Dendrochronology

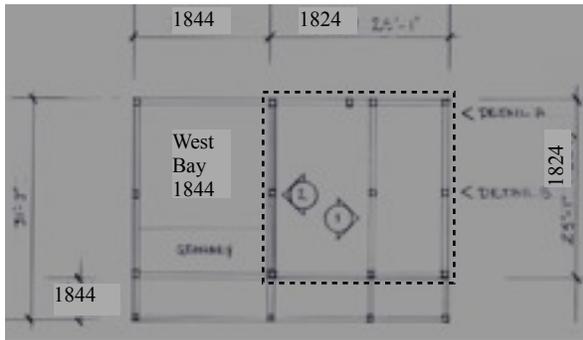
## Part 5 - The Rapp/Phillips Barn

by Carla Cielo, Architectural Historian, Historic Preservation Consultant, Designer,  
in conjunction with the Holland Township Historic Preservation Commission.

The Rapp/Phillips barn is a Pennsylvania forebay bank barn (44' (l) x 31'-3" (w) x 24' (h)) incorporating the frame of an earlier 2-bay bank barn (25' x 25'). It has an asymmetrical roofline and a posted forebay (7'-9" deep) that mimics the appearance of a "Transitional Sweitzer" barn. Dendrochronology dated the forebay frame and the west gable end bent to 1844 at which time the farm was owned by Elias Rapp (1819-1894). The older two-bay frame is from 1824 at which time the farm was owned by Elias's grandfather Phillip H. Rapp but likely occupied by his son Joseph Rapp (Elias's father) and his family (see upper level plan). The Rapps were of German ancestry and were known for being carpenters.



Pre 1953 photograph showing the Pennsylvania forebay bank barn (1844) with posted forebay and asymmetrical roof line.

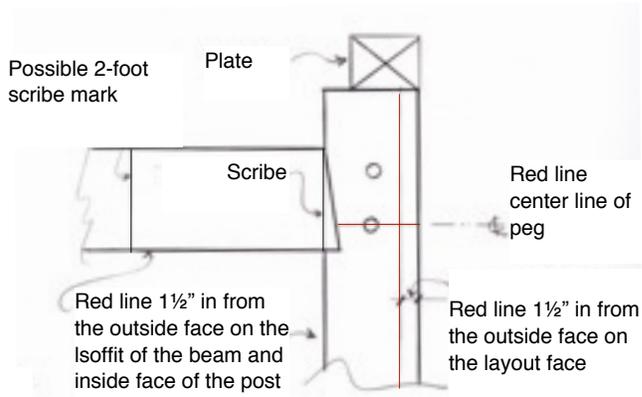


Upper level plan (the west bay and the forebay were added in 1844. The 1824 section is 25' square)

The builder of the 1824 two-bay bank barn combined a form of square rule joinery called "snap line joinery" with more traditional details. This made it very difficult to date without dendrochronology as it is the only barn in Holland Township known to have red snap lines. The three 1824 bents are framed with two end posts, one or two full-width, braced tie beams, a center post below a full-width tie beam and a several interrupted tie beams. Red snap lines are on the posts, tie beams and basement beams.

Red snap lines were found in the following locations:

The south end post of the center bent has a vertical red line on the layout face, 1" in from the outside face in line with the mortise inset.



*Detail B, East gable end bent (outside face)*

The center post in the east gable end bent has four vertical red lines. On the outside face (layout face) there is a centerline and a line approximately 1½” in from the north side of the post. The north and south sides have vertical red lines 1½” in from the layout face aligning with the mortise insets. This post dendro dated to the spring of 1823.

The northeast post in the east gable end bent has a vertical red line on the layout face (east face) 1½” in from the north edge and a second vertical red line on the south face 1½” in from the layout face (aligns with a horizontal line on the soffit of the upper tie beam). It also has a horizontal line running through the center of the peg that secures the tenon at the upper tie beam (Detail B).

A horizontal red line is on the soffit of the upper tie beam in the east gable end bent 1½” in from the layout face. This line aligns with vertical lines on the inside faces of the north end and center posts in this bent. The upper tie beam also has a two-foot scribe mark and a vertical line scribed at the diminished shoulder (Detail B).

One of the basement beams (hewn top and bottom with the sides left round) has a red snap line aligning with mortise for a framed wall beneath it. The snap line stops about 2-feet in from the south end where the beam is hewn square. This beam dendro dated to the spring of 1823.



*Underside of a basement beam with a red snap line*

Several details of construction are more commonly associated with scribe rule joinery. The full-width tie beams are slightly cambered and some have 2-foot scribe marks (with no circles). The shoulders of the mortise pockets are diminished and tapered (deeper on one side). Square or no shoulders are more typically associated with square rule joinery. The rafter plates have double notched rafter seats which fit the existing sawn rafters. In Holland Township double notched rafter seats are rare and were only found in barns that dendro dated to the 1790s. Unfortunately the plates could not be dated due to the lack of growth rings. Posts have raising holes. The rafters are joined with a tongue-and-fork (pegged) connection at the ridge.

In 1840, 21 year old Elias Rapp purchased the associated farm from his mother Dorothy Rapp. Elias evidently used the small 1824 barn for about 4 years before enlarging it. Rapp ingeniously used the Transitional Sweitzer forebay barn form to extend the barn to the south with a 6-foot deep forebay and to the west with an additional hay mow. The west bay is connected to the

former west gable end bent with plates (dated 1844) with flaired ends (looks like a gunstock post on its side). The flair allowed connection to both the plate and the post of the 1824 section.



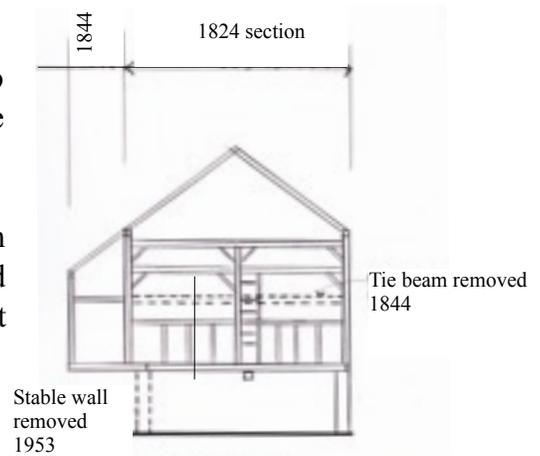
*Filled mortise supporting the rung of a ladder. A red snap line aligns with this mortise.*

The following changes were made to the 1824 frame apparently at the time of the 1844 renovations.

Open and reused mortises (11" high and 6'-8" above the floor) in the end and center posts in the west bent indicate the removal of one interrupted tie beam (elevation 2). The mortises at the end posts were reused for braces. The mortise at the interior posts was filled with a wood block to support the rung of a ladder that was incorporated into the bent framing apparently in 1844. A red snap line aligns with the filled mortise. This confirms that the snap lines predate the 1844 renovations and are thereby original to the 1824 frame.

The framing assembly of the center bent was also fitted with a ladder and was re-configured to slope the floor of the loft (higher on the banked side). According to the current owner, Mr. Bob Phillips who was in his 80s at the time of the discussion, the loft floor was sloped to increase the height under the loft for a threshing machine (Elevation 1). "The engine sat outside."

According to Bob Phillips, 3 horses and 10 cows were housed in the basement which was enlarged and modernized in 1953 to accommodate 10 additional cows. Prior to 1953, there was a milkhouse on the banked side of the barn (predating the 1953 addition) which was where the milk was strained and poured into cans. The strainer got the "dirt" out. Since the cows were milked by hand, straw and other foreign particles could fall into the milk. The evening supply of milk was brought to a nearby farm for chilling in their "springhouse" (remains today as a ruin).



*Elevation 2: west center bent in the existing four bent configuration (originally the west gable end bent)*



*Elevation 1: East center bent in the existing four bent configuration (originally the center bent). The loft floor was slanted to accommodate a threshing machine.*

The 1824 section of this barn illustrates the transition to square rule framing. Snap-line joinery is relatively rare and this is the only barn remaining in Holland Township that illustrates this practice. The 1844 section ingeniously utilized the Transitional Sweitzer barn form to enlarge the earlier bank barn.