Hewing the Meetinghouse Timbers

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A couple of coincidences: an article in the Summer 2018 issue of *Northern Woodlands*, *The Art Of Hewing,* by Brett McLeod, and a scramble under the narthex floor to check the condition of the posts for the Capital Campaign Team, re-ignited my curiosity about how our massive meetinghouse was built.

How was it possible with only hand tools and human and animal power, that men in colonial settlements could construct massive structures the size of our meetinghouse?? Obviously, the settlers brought with them the skills of the old world, and perhaps tools and mechanical devices too. The combination of practically free, yet astonishingly strong virgin lumber, coupled with the desire and requirement to provide a safe meeting place for the residents of the town, and perhaps a bit of competiveness to build the biggest structure in the area, did result in the biggest and strongest meetinghouse with the tallest steeple in the region.

The very first task in the winter of 1770-71, after the meetinghouse was approved, was to find the trees for the required timbers. This is conveniently explained by Eva Speare in her book *Colonial Meeting-Houses of NH* [pg. 26], where she describes the construction of the Amherst church. Church member Deacon Barker, the master-builder, needed four straight timbers 70' long for the two sills, and two plates. Other hewn timbers needed were four 50-foot-long by 13" square timbers for the for the corner posts, four more for the tower posts, plus 50 foot sleepers to support the floor and the tie-beams that crossed the ceiling to hold the walls. The weight of these green logs was staggering! "The probable average was sixty-five pounds per cubic foot of the entire frame." [Speare, pg.27]. Our 13" diameter timbers weighed even more – maybe 75 pounds per cubic foot. The 70' lone timbers could weigh over 5,000 pounds—over 2 tons!

That is why discovering the hewing article was *'eureka'* for me. Hewing is the process of squaring round logs to make them into building lumber. Green logs are easier to hew than dry ones, which explains how the lumbermen were able to prepare all the timbers for the framing so quickly during the winter of 1771. "Historically, hewing rough timbers was a process that was done in the forest. To make the work easier, lumberjacks would typically leave the hinge attached to the stump when felling, in order to keep the tree elevated and to prevent it from rolling when hewed. Additionally, hewing in the woods also leaves the chips, bark and slabs behind, meaning there is less material to haul out." [*Northern Woodlands*, Summer 2018, Pg. 75.] Mathematically subtracting the area of the square timber hewed from the round log leaves 36% of the wood as scrap. But adding in the weight of the bark and the allowance for the unevenness of the logs, plus the taper of the trees, (more was hewed off at the wider bottom of the trunk) more likely at least half of the wood and weight was left behind in the forest.

Crawling under the narthex, I saw a cross beam that looked to be hand hewn. After examining the Allen Hill Architect's drawings of the building structure, I realized that this is the original 1771 front sill with the tower extending out in front of it. Similar hewing marks made by the broad ax are visible on posts and beams in the attic too.

Photos of drawings of Broad Ax from *Eric Sloane's America,* pg. 34.