

A PROBLEM IN DEGREES OF PITCH.

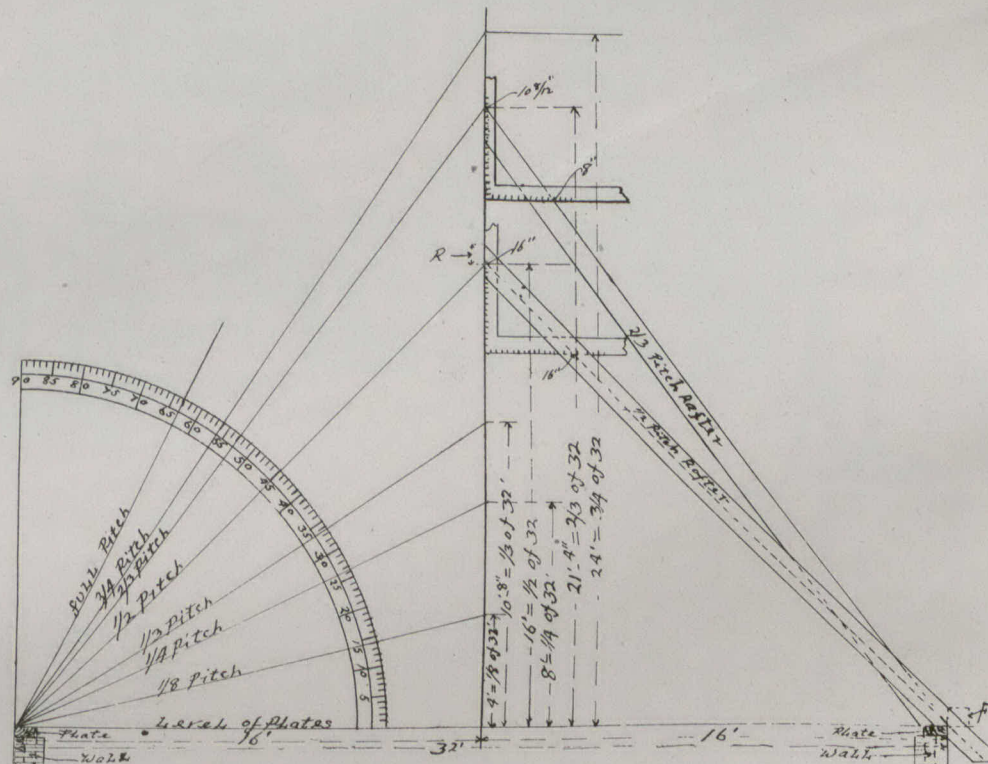
By W. C. A. STEVENSON.

The pitch of a roof in degrees is based on the angle the incline of the roof forms with a line drawn across the plates on the level, and is also based on the proportion of the rise to the width of the building.

I will try to make this plain if you will follow me on the diagram. We see that the outside of the walls here shown are 32 feet, making the half width 16 feet, which establishes the centre of the roof ridge. A one-quarter pitch roof would rise above the plate line just 8 feet or the quarter of 32 feet, a one-half pitch, half the width, or 16 feet; a one-third pitch, 10 feet 8 inches, or one-third of 32 feet, etc.

I have shown the half, and two-third pitch rafters laid out in position, with the square applied. It will be seen that the half pitch is cut to allow for it projecting over the plates, the dotted lines showing the pitch line to which the square will be applied so as to find the proper length, 16 inches by 16 inches on the square, and the distance across the square from these figures giving 1-12 the length of the rafter, as this is 1 inch to the foot.

The figures used for the 2-3 pitch are 8 inches by 10 8-12 inches, or 16 inches and 21 feet 4 inches divided by two. On measuring across the square from these figures you get 1-24 of the length as it represents 1-2 inch



As for the number of degrees this is based on the circle which contains 360 degrees. Each degree is again subdivided into 60 minutes, which again is divided into 60 seconds. We will not go into the minutes and seconds, as our diagram is too small.

We have here laid out the quarter circle divided into 90 degrees, the 5, 10, 15 and 20, etc., being marked. We have also shown 1-8, 1-4, 1-3, 1-2, 2-3, 3-4 and full pitches, showing where each cuts the circle and the number of degrees each forms with the plate line.

The one-half pitch roof is most commonly used. It forms a 45 degree rise, which cuts the quarter circle in half. The common error is made that as the one-half pitch cuts the circle in half, the one-quarter would cut it in quarter or 22 1-2 degrees, and the one-third or 30 degrees, while the two-third would be 60 degrees. This is not the case, as a moment's study of the diagram will prove. Each pitch is dimensioned to the proper proportion with the width of building as will be seen.

to the foot. It will be seen that this rafter does not project over the plate, so that the square will be applied to the top edge of rafter. The letters F and R show the portion that stands above the pitch line.

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