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Directions for Laying Out the Foundation for a Building

South Dakota State University Cooperative Extension

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*DIRECTIONS FOR LAYING OUT THE FOUNDATION FOR A BUILDING.

Set stake at A for permanent corner of the building. (Fig. 4.)
Construct right angle as shown in either Fig. 1 or Fig. 2 and set temporary stakes. Extend the sides and measure off the proper length of the two sides and set stakes at B & D. Using a heavy non-stretching cord and a sharp stake strike an arc at C from the center "D" using the length of AB for the cord length. (See Fig. 3.)
From "B" as a center and with a cord length equal to "AD" strike another arc on the ground at C. If accurately done the point of intersection for these two arcs will be correct. (In striking the arc the cord must be level.)
Check the above rectangle by comparing the diagonals. The diagonals must be exactly equal in length. (See Fig. 3.)
Drive the double corner stakes so that a cord when stretched as shown in Fig. 1 will fall along the outer edge of the foundation line.
Stretch the cord beginning at stake 9 giving it a turn around each stake and about 2" or 3" above the ground.
Pull stakes at A,B,C,D and set them inside at 1,2,3,4 allowing for the width of the foundation. Stretch the cord 1,2,3, and 4. In digging the foundation trench cut the line of the foundation 4" deep under each cord with a garden spade. Dig foundation trench on down 2" narrower than desired and then dress sides to proper width.

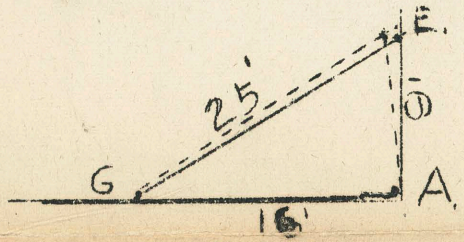

FIG. 1 - "3-4-5" METHOD.
With line AG as one side locate E for a rt. corner at A. Drive stake G 16' from A. Stretch a 50' flexible tape measure around the three stakes with the ends of the tape at G and with stake E (spike nail) free to move. Move stake E until AG is exactly 25' and AE is 9'. Drive E. Use spikes for temporary stakes and replace with square stakes carefully.

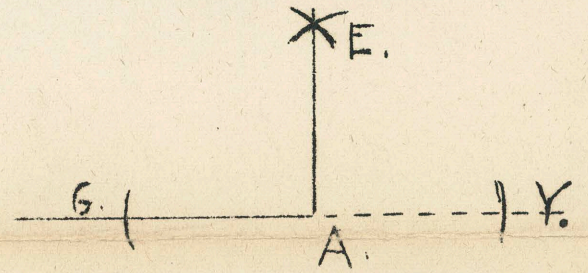

FIG. 2 - COMPASS METHOD.
With line AG as one side cut an arc at G with a long cord and sharp pin (spike nail), with A as center. Swing around to Y from same point making AG and AY equal. With G & Y as centers swing arcs at E. Drive a stake at the intersection. Use spikes for temporary stakes.

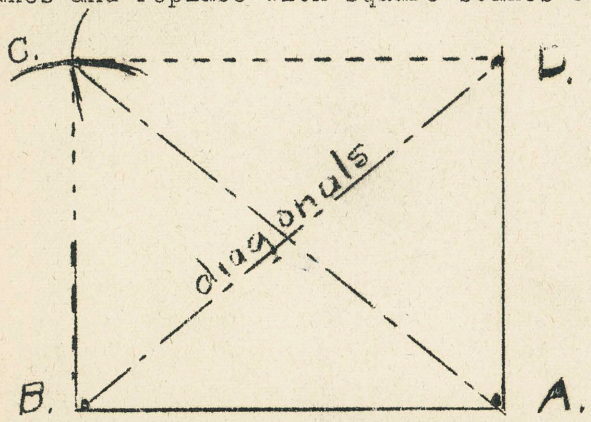

FIG. 3 - TO COMPLETE RECTANGLE.
From D as center and length of line equal to AB strike arc at C. With B as center and line equal to AD strike arc at E. The intersection will be corner C.

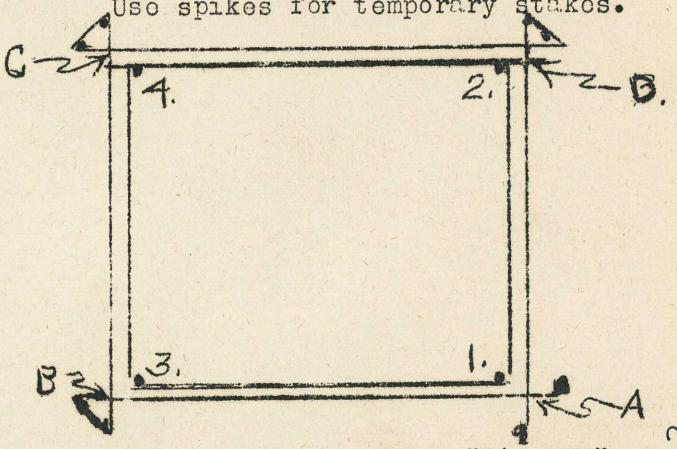

FIG. 4 - THE COMPLETED "LAY-OUT".
The diagonals should be rechecked after permanent stakes are driven at A,B,C and D.

(Agricultural Extension Service of South Dakota State College, Brookings, A. M. Eberl Director. United States Department of Agriculture Cooperating.)

In laying-out the foundation for a farm building the first thing to consider is the position that will correspond with the other buildings and properly fit in with them. In practically all cases this position will be parallel if not in line with certain other buildings. One corner of the building should first be located and a stake driven corresponding to stake "A" in the directions on the preceding page. The direction of the line AG should next be determined by measuring accurately in parallel lines from the side of an adjacent building or property line. After the direction of this line is established then one side of the building foundation is permanently located and the other sides are then laid-out. Buildings do not necessarily need to stand "square with the world". It is much more important that their "setting" correspond to adjacent buildings. In no case should an attempt be made to orientate a building by means of a magnetic needle or compass, as the magnetic deflection varies too greatly in South Dakota. A true north and south line can be established only by delicate readings and calculations made on the sun or the north star with necessary instruments.

After the foundation is laid out according to the directions, grade stakes marked for the exact elevation of the corners facilitate the work of the carpenter or contractor. The engineer's transit or architect's level may be used for this purpose very handily if available.

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