

Fig. 2 - This shows a method of leveling one point with respect to another. It consists of a length of ordinary garden hose with a one-foot length of clear plastic hose attached to each end.

Point $A$ is the reference elevation. All other batter boards must be placed at the same elevation as the batter board at point $A$.

Hold the hose as shown here and fill with water so that the water line may be seen in the clear plastic sections of the hose.
the top of the batter-board that is perpendicular to the board on which the point (A) is marked;
7. Using a steel tape, measure and lay out the dimensions of the building and mark the points on the top edge of the batter-boards (C-D, A-E, G-H, B-F). In this step the important thing is to keep dimensions as accurate as possible. Point G or H can be approximately located for the first layout.
8. Drive nails into the top of the batterboards on the marks (A-B, C-G, E-F, and H-D) and connect these points with builder's twine.

## Double-Check Diagonals

9. Measure the diagonals of the rectangle formed by the building lines. The diagonals must be equal if the building is to be absolutely square. Usually the first measurement will show that the diagonals are not equal. This means that a parallelogram and not a rectangle exists;
10. Never move the base line (A-B or point (C). Check all measurements, and be sure that the line of the building (E-F) is parallel to the base line. The lines that are supposed to be perpendicular to the base line will not be accurately placed unless the diagonals are equal. There are only two points ( G and H ) that can be moved to equalize the diagonals.

Raise or lower the hose at B until the water level at $A$ is even with the top of the batter board at $A$.

The water level at B is the same as at A. Mark the stake at B even with the water level in the hose. The elevation of this mark is at the same elevation as the top of the batter board at A.

Proceed to the other corner stakes in the above manner.

By trial and error, these points can be moved until the diagonals are equal. This should require no more than three or four movings;

## Transpose Corners

11. Use a plumb-bob or a carpenter's level to transpose the corner of the rectangle to the ground level. (See intersection of A-B and C-G in Detail A;
12. Reference the lines that extend beyond the batter-boards by use of the taut line method, explained in Figure 1. We suggest putting in these secondary stakes just in case the batter-board stakes are distributed when the building excavation is made.

If your building is not rectangular in shape but is, say, such as an L-shape structure, the procedure described here can be used by breaking down the overall floor plan into a series of rectangular shapes.

## 18 GCSA Committees

David Moote of Toronto, Can., president of the GSCA, recently appointed 18 committee chairmen to direct various activities of the association. The committees aid in all GCSA activities ranging from internal matters to those dealing with other organizations and groups in golf, turfgrass and related industries.

