Chapter 6: Nailing Right the First Time

Most Common Mistakes:

1. Using non-galvanized nails.
2. Not using proper quantities of nails.
3. Creating splits.

ALMOST TIME TO USE NAILS! !

The building plans have specified 10d common (3" long, 0.148" diameter) framing nails. Proper nailing technique use is essential for ideal results and adequate building performance. **See Figure 6-1.**

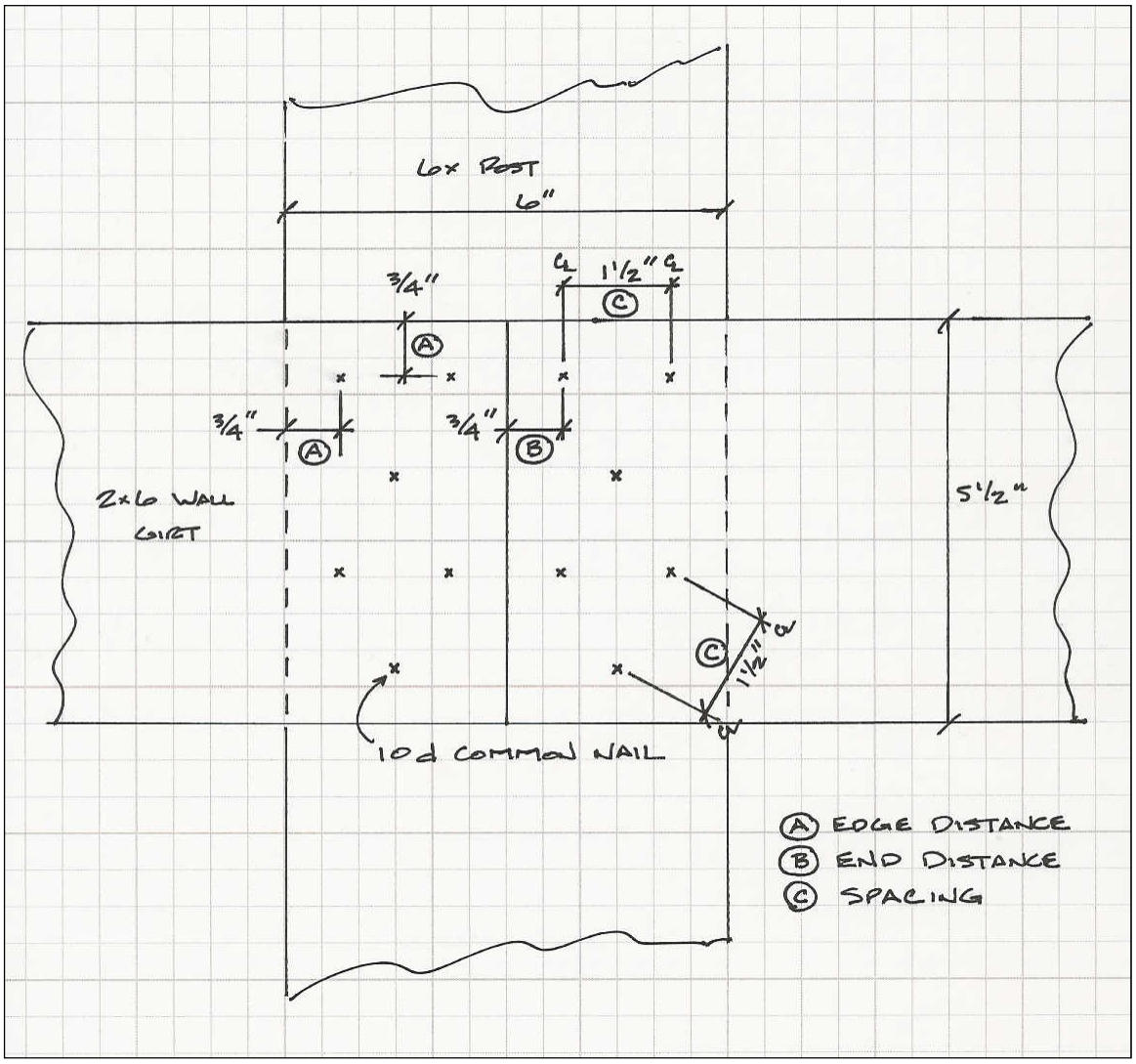

Figure 6-1

Nails distances are measured in several ways:

- "Edge distance" is the distance from member edge to nearest fastener center, measured perpendicular to wood grain.

- "End distance" is the distance measured parallel to grain from the square-cut member end to nearest fastener center.

In photo below, board "end" has white tag stapled to it. "Edge" would be either of the long sides.

- "Spacing" is the distance between fastener centers measured along a line joining their centers.
- For ideal results, install 10d common nails so no nail edge or end distance is less than 3/4".
- Space nails no less than five times the nail diameter (with 10d common nails 5 X diameter is roughly ¾") while 1-1/2" is preferred.
- In any case, edge distances, end distances and spacings shall be sufficient to prevent wood splitting.
- When a bored hole is desired: To prevent wood splitting, bored hole diameter shall not exceed 75% of nail diameter.

EXAMPLE: For a 10d common nail, maximum bore hole would be 0.111" (7/64" bit would be safe).

EXAMPLE: For 20d or 40d threaded hardened nails, maximum bore hole would be 0.132" (1/8" bit would be ideal).

- Install nails perpendicular to member surface.
- In the event a "toe-nailed" connection is used, toe-nails shall be driven at an angle of approximately 30 degrees with member and started approximately 1/3 nail length from member end. **See Figure 6-2.**

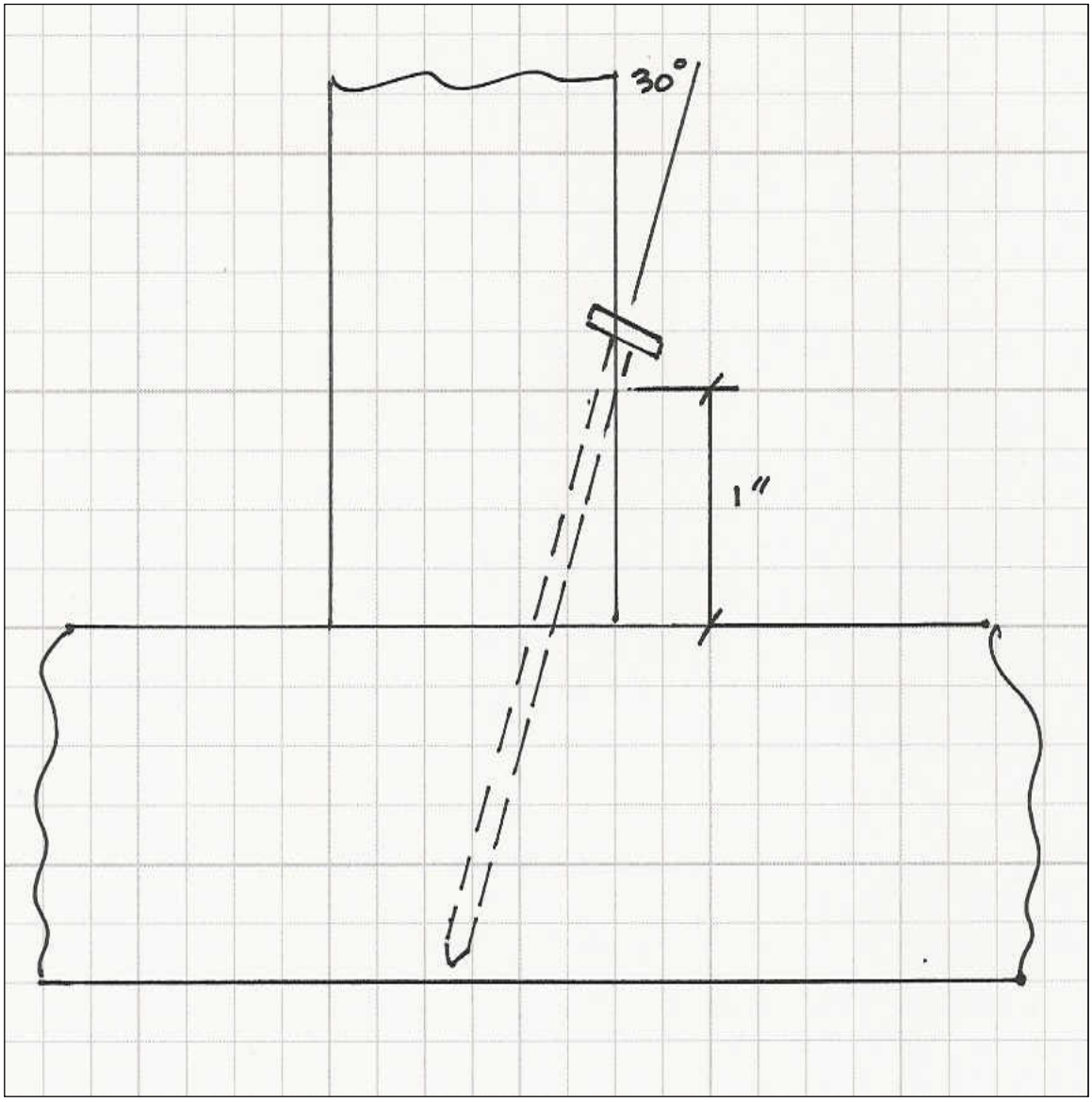

Figure 6-2

Toe nailing with a nail gun.

WARNING: Failure to use adequately sized nails, properly installed and in correct number, can lead to devastating results. Most building failures are the resultant of inadequate fastening procedures and can cause injury or death.