

# Reduce Framing Costs with Advanced Framing Techniques

## Builder Guide



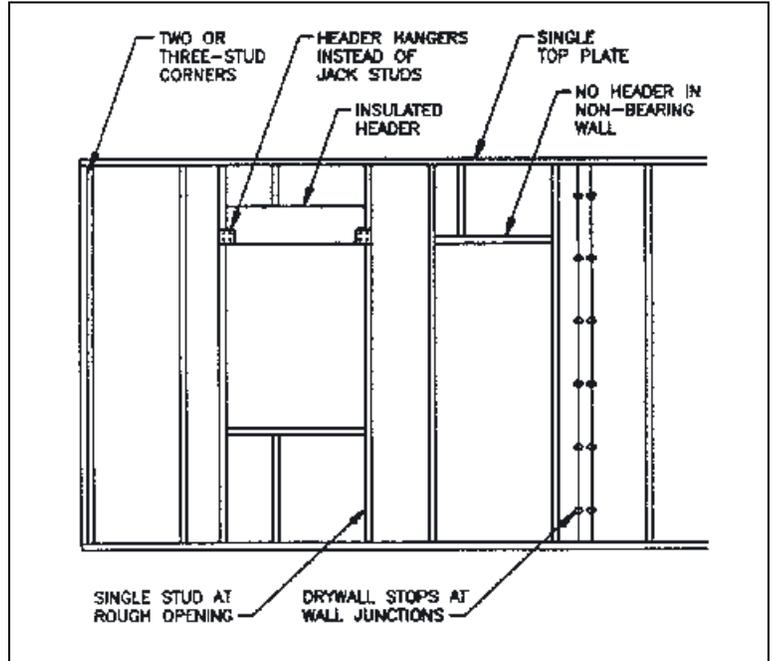
### DESCRIPTION

Advanced framing methods may reduce wood use up to 25% and improve wall thermal resistance values from 5 to 10% (see “Advanced Wall Insulation Techniques” fact sheet.) Just the corner and wall intersections of typical homes can add up to 10 or more feet of wall that is not insulated. Advanced framing techniques are accepted by building departments nationwide, and the National Association of Homebuilders.

Where lumber prices are high, optimizing the use of lumber can save significant cost. For example, the Uniform Building Code allows 2 feet on center stud spacing in one-story dwellings and on the top floor of multistory dwellings instead of the conventional 16 inches on center. Also, using two-stud corners can save as many as 40 to 50 studs in a house. Similarly, eliminating studs at intersections of interior and exterior walls can save another 20 to 40 studs in a house. Instead of adding extra studs for attaching the drywall, use drywall clips or ladder blocking. In addition, as much as 4% of the building envelope consists of window and door headers. Often these are constructed with 2x10 or 2x12 pieces of lumber attached together with no insulation. While 2x12 headers are required in some locations in the house, 2x6 headers may be fine in other locations. Contractors should consider replacing solid wood headers with plywood box-beam headers and adding a layer of rigid insulation between the plywood headers. Alternately, rigid insulation can be sandwiched between conventional 2x10 or 2x12 lumber.

Window and door placement offer more opportunities for material savings during the design phase. Moving windows and doors only 2 inches can save as many as 20 studs per house depending on the number of openings.

### Advanced Framing Techniques



All of these advanced framing techniques reduce lumber costs by eliminating wood framing that add nothing to the strength, durability, and marketability of the house.

Using advanced framing also allows installation of insulation in areas that typical framing practices neglect. These include corners and door and window headers.



### BENEFITS

- Advanced framing can reduce lumber and labor costs.**

Advanced framing reduces the amount of lumber needed to install studs. For instance, placing studs 2 feet o.c. instead of the standard 16 inches o.c. can

save a significant amount of lumber and labor costs without compromising the structural integrity of the home. These reductions in framing costs provides an opportunity for the installation of other energy efficiency measures that have higher first costs.

**Advanced framing can increase energy efficiency.**

“Thermal bridging” occurs in every stud and header in a wood framed house because the wood framing members have significantly lower R-values than insulation. Framing members “short-circuit” the insulation by allowing the heat inside to bypass the insulation and flow directly through the wood. By eliminating unnecessary wood in frame construction, advanced framing techniques allow for a reduction of this thermal bridging effect and increased insulation levels in walls, corners, and headers. These techniques significantly improve energy efficiency.



## INTEGRATION

**Planning is important when using advanced framing.**

More time will definitely be needed to plan an advanced framed house. This involves up-front coordination between construction managers and designers to optimize both the design and the construction details of the house.

**24" on-center wall framing may not be possible with Stucco siding.**

Houses with stucco siding may not allow for 24" on-center framing in exterior walls. This is due to concern about cracks developing in the stucco finish with wider spacing. Advanced framed corners and headers can still be incorporated into a house with stucco siding.



## RESOURCES

- NY-Star Builder's Field Guide, 1994 Available at 518-465-3115.
- "Economical Framing" Fisher, E.L., Fine Home Building, October/November 1993.
- See also “Advanced insulation Techniques” Fact Sheets