



Dallas Area  
**Habitat**  
for Humanity®

# Framing Basics 1

Dave Hermon

Russ Root

Stephen Seybold

Stephen Capuyan

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# Overview of Framing Day

- 🏠 Major tasks of the day
  - 🏠 Stand walls
  - 🏠 Brace walls
  - 🏠 Build and install porches
  - 🏠 String walls
  - 🏠 Install cap plate
  - 🏠 Start sheathing exterior walls

# Safety First

- 🏠 Hearing protection required for Ramset operator
- 🏠 Ramset can only be used by people who are certified
  - 🏠 <http://www.ramset.com/patlicensing>
- 🏠 Lift with legs not back
- 🏠 Leave unattended walls flat on slab → Do not lean against wall

# PPE

## 🏠 Required



## 🏠 Recommended



\*Remove when using power tools



\*\* required for prolonged exposure to saws and Ramset

# To lean or not to lean.....?

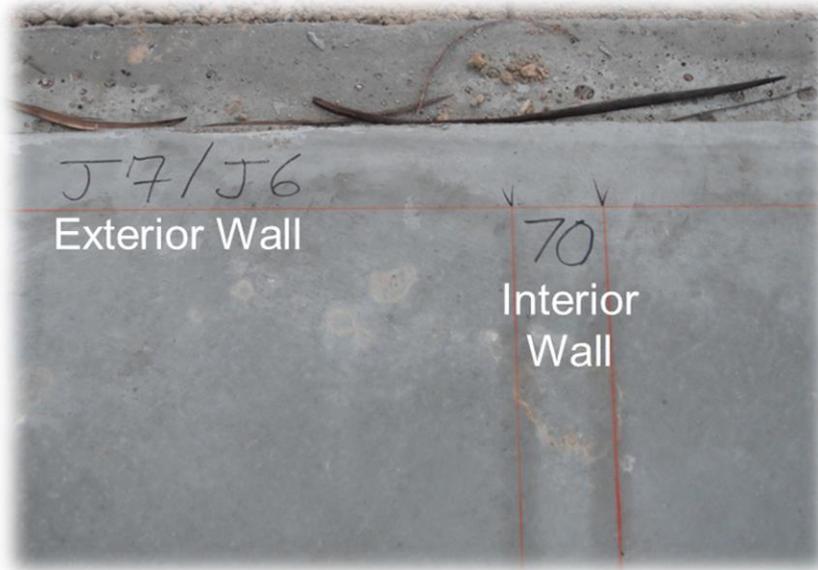


# Tools of the trade

- 🏠 Hammer
- 🏠 12d and 8d nails
- 🏠 Speed square
- 🏠 Measuring tape
- 🏠 Nail Puller (Cat's paw)
- 🏠 Chisel
- 🏠 Chalk box
- 🏠 Tool belt/apron
- 🏠 8ft level
- 🏠 String line
- 🏠 Circular Saw
- 🏠 Miter Saw (chop saw)
- 🏠 Reciprocating Saw



# Framing Overview of Build Day

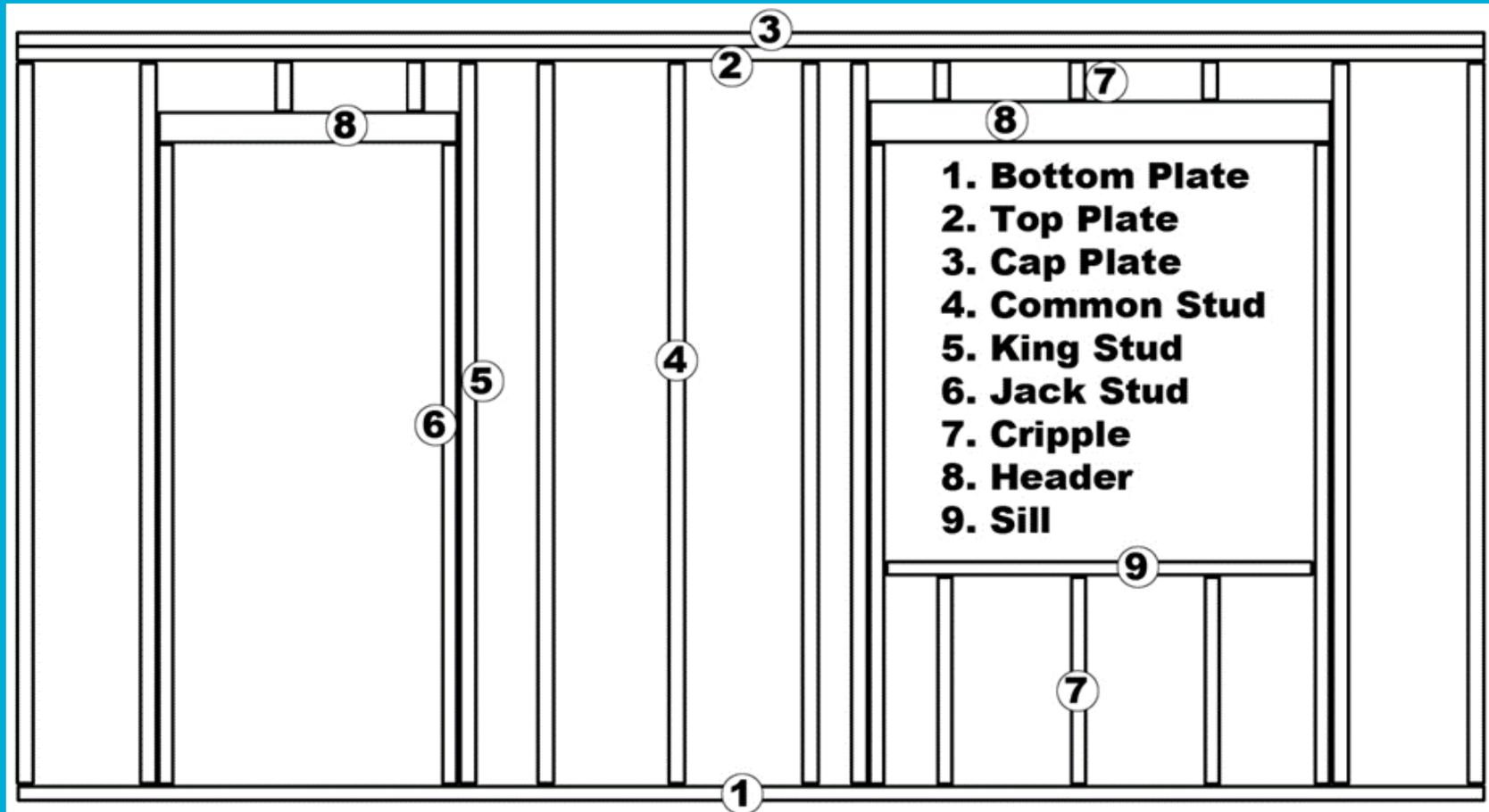


- 🏠 Exterior – Letter + Number
- 🏠 Interior – Number only



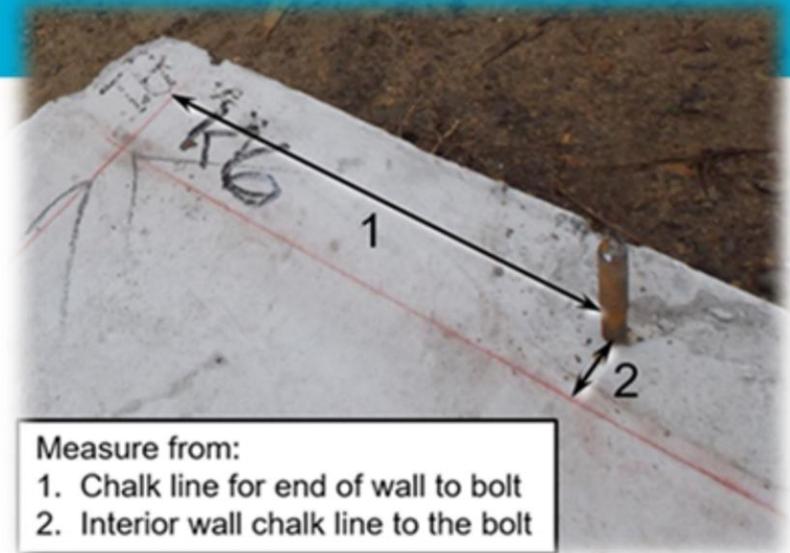


# Common wall components



# Anchor Bolts

- 🏠 Align wall
- 🏠 Measure for bolt location
- 🏠 Lay wall down



# Anchor Bolts cont.

- 🏠 Drill hole with  $\frac{3}{4}$ " bit
- 🏠 Add/replace Sill Seal
- 🏠 Lift wall onto bolt(s)
- 🏠 Lock in wall



# Ramset (MUST be Certified)

- 🏠 Walls should align on one line (stay consistent)
- 🏠 Exterior walls – set nail toward the inside edge of bottom plate
- 🏠 Place
  - 🏠 w/in 6in of each end of the wall
  - 🏠 Every 2<sup>nd</sup> bay or w/in 4ft of anchor bolt
- 🏠 Announce (loudly) “Noise!” prior to activating shot
  - 🏠 Ear plugs are mandatory
- 🏠 NEVER nail doorway



# Standing Back Walls

## 🏠 Long wall

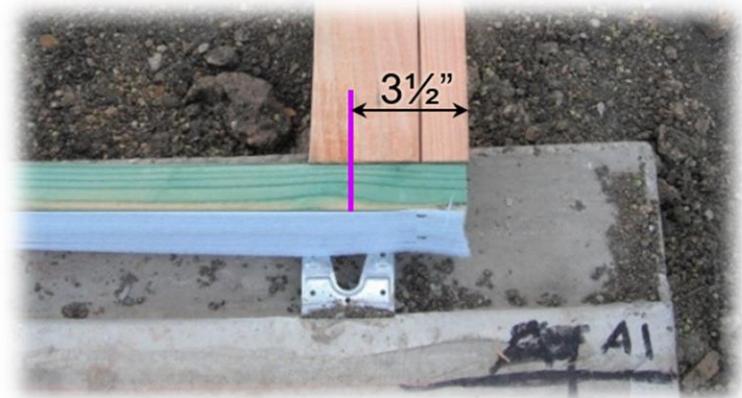
- 🏠 mark 3½in from end
- 🏠 Align mark to inside snap line of short wall
- 🏠 It's okay if the wall overhangs the slab

## 🏠 Squaring walls

- 🏠 Stand walls
- 🏠 Plumb walls w/ 8ft level
- 🏠 Brace w/ longest lumber necessary

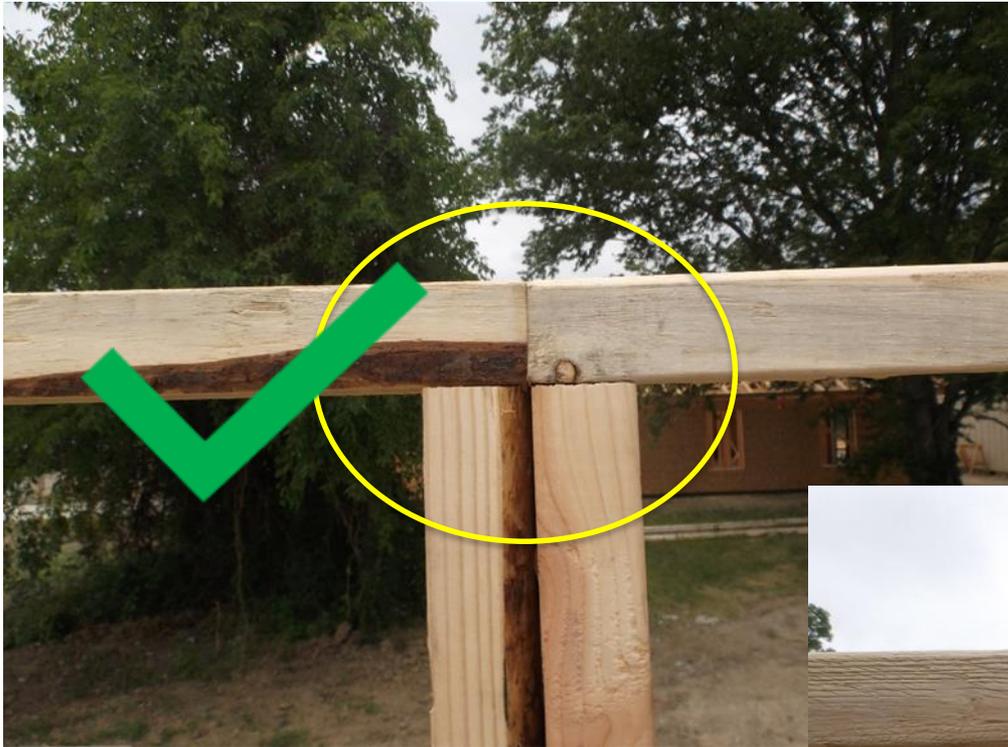
\*plumb = perpendicular to ground

\*\*Check level for accuracy at the beginning of the day



## Standing walls (tips)

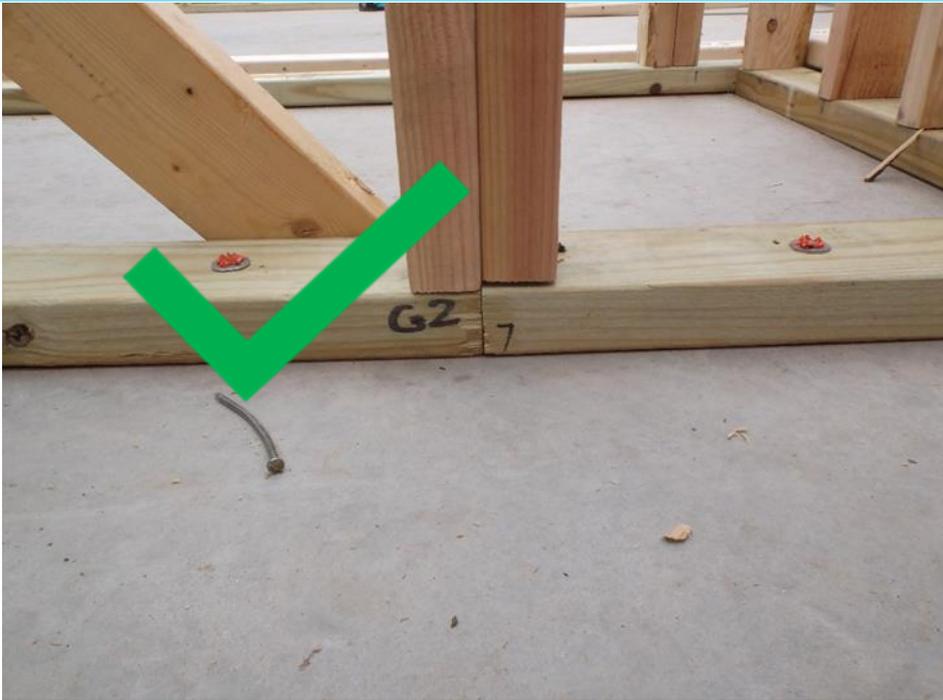
- 🏠 Green = BOTTOM
- 🏠 Use cleats to clamp walls together
- 🏠 Nail off all exterior walls
- 🏠 'Tack' interior walls to exterior walls and interior to interior walls
- 🏠 Be sure not to stand exterior walls too far ahead of interior wall → bracing
- 🏠 New short jacks



- **No gaps between plates!!**
- Be sure bottom plates and top plates are nailed securely to all studs.

- Check top plates are flush with each other





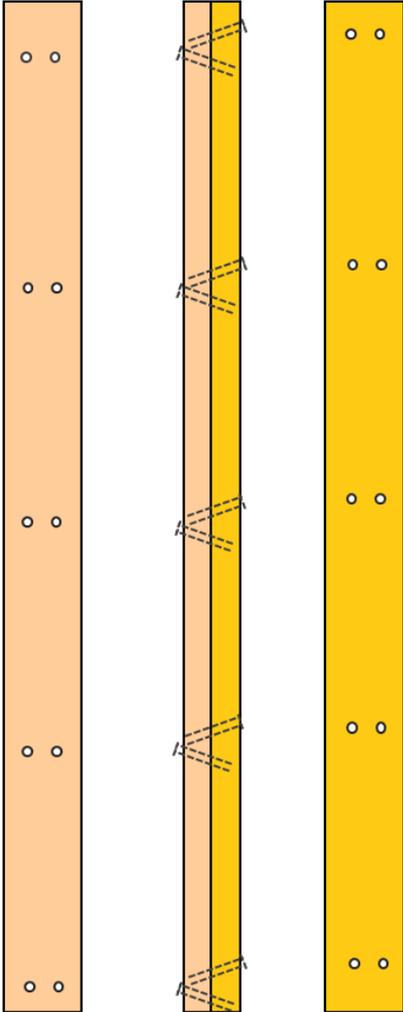
- **No gaps between plates!!**
- Be sure bottom plates and top plates are nailed securely to all studs.



Side  
View

Front  
View

Side  
View



**Nailing Pattern**



**Cleats**





- Corners need to be flush with each other
- Use clamp to close gap

# \*\*NEW\*\* Short Jacks

1.



2.



3.



4.



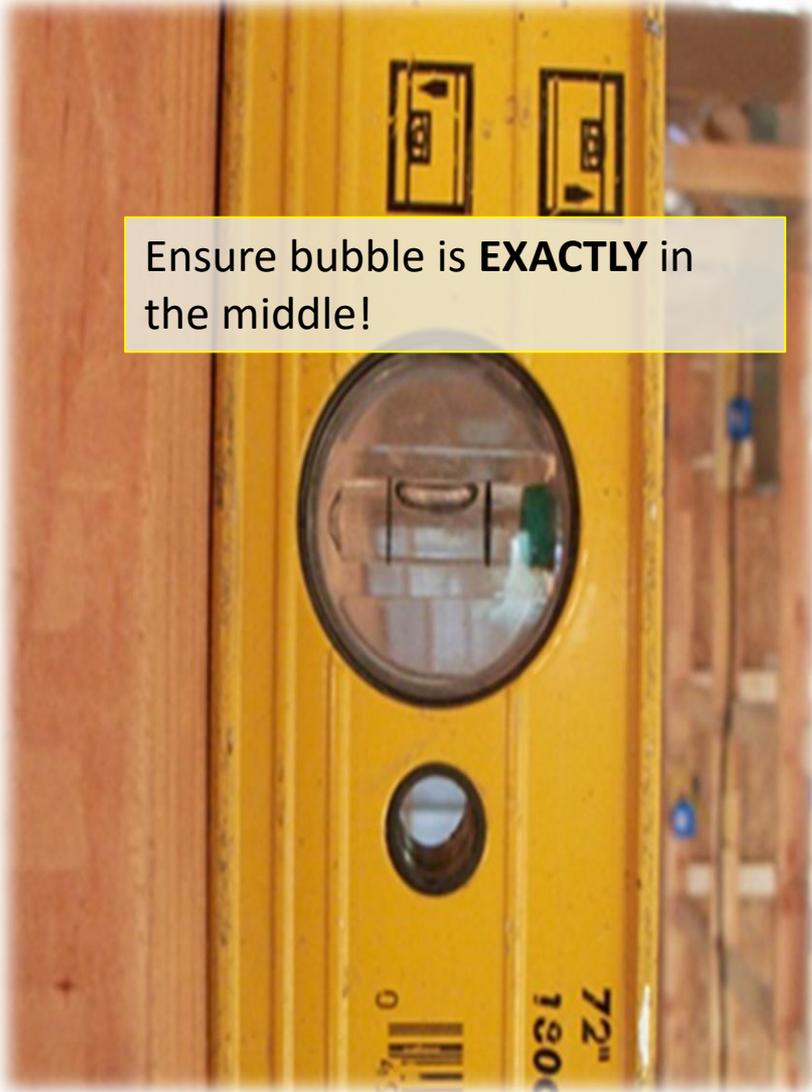
5.



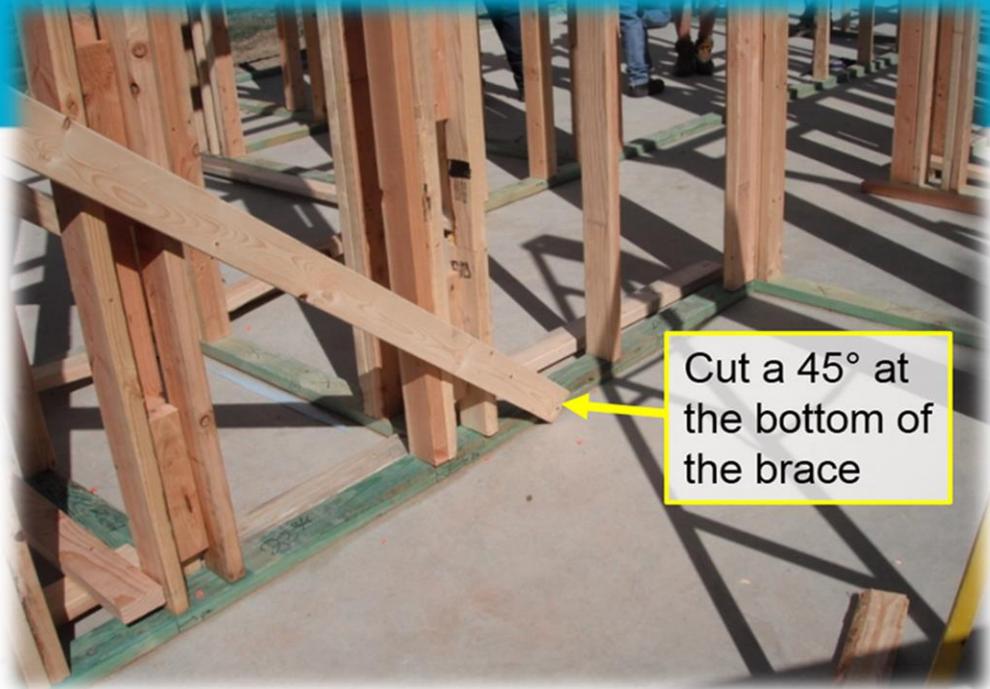
\*Indicate somehow that door frame is shot and short jack is reinstalled and nailed-off

# Plumbing/Bracing walls:

- 🏠 8' level only (verify accuracy before use)
- 🏠 Check for plumb using only top and bottom plates
- 🏠 Tack interior walls
  - 🏠 Use **ONLY** 2 12d-nails near each plate when tacking interior walls
- 🏠 Brace at points where exterior walls meet
- 🏠 Minimize use of anchor blocks/cleats
- 🏠 Never attach blocks on garage floor for bracing
- 🏠 **DO NOT** remove wall bracing until roof is 80% decked.



Ensure bubble is **EXACTLY** in the middle!



Cut a 45° at the bottom of the brace



# Polybarrier

- 🏠 Once all exterior are installed and braced
  - 🏠 Add 18" polybarrier to all exterior walls.
  - 🏠 Measure 16" from the bottom of plate and snap a line. Let the remaining plastic hang. (for siding walls)
  - 🏠 Measure 12" for brick walls
- 🏠 Cover exterior corners with 18" polybarrier.
  - 🏠 Crease corner with 2x4



# Cut Plumbing Walls

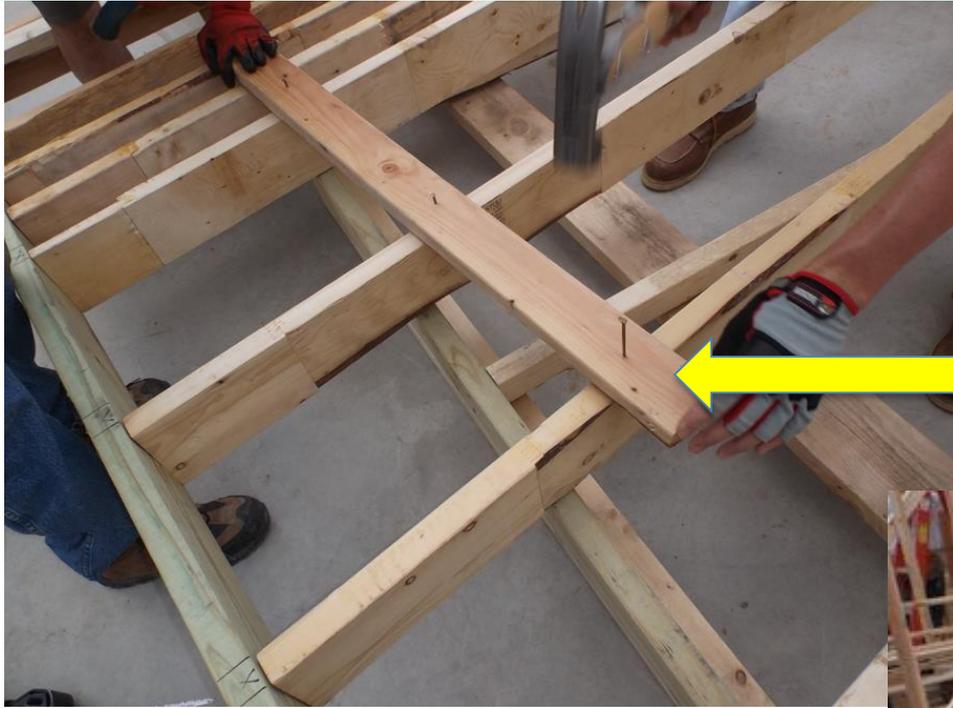
- 🏠 Accommodates kitchen/bathroom plumbing
- 🏠 Cut bottom plate(s) at appropriate locations
- 🏠 Bathtub
  - 🏠 Must be 60" minimum



- Mark plumbing location to be cut

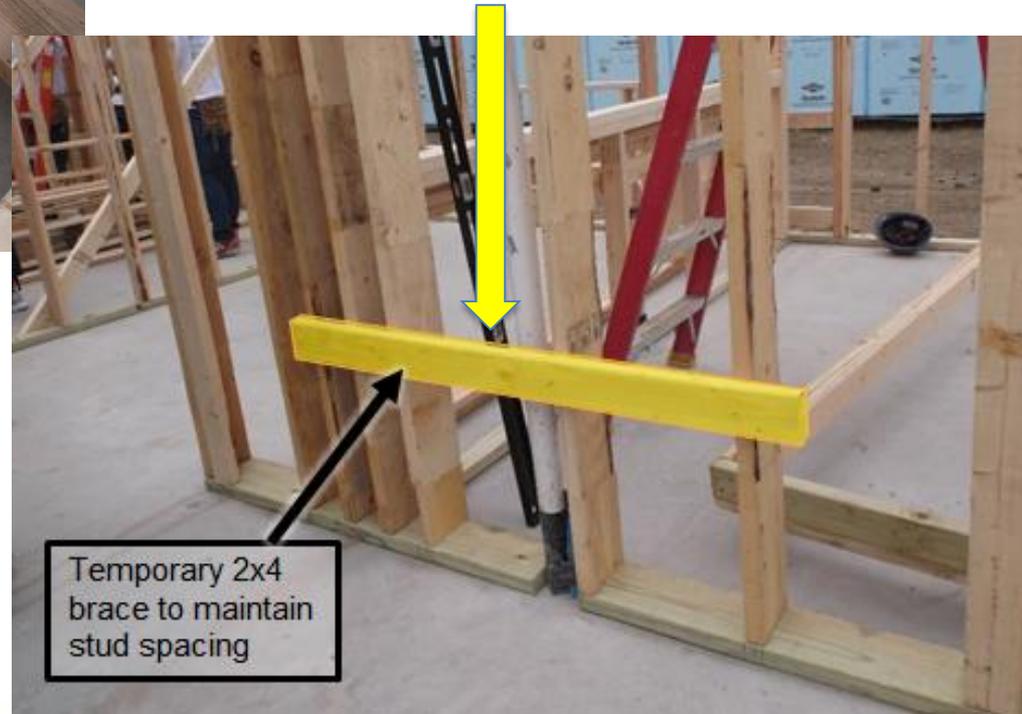
- Measure from one end of the wall
- Transfer measurement to plate





- Move stud(s) if necessary
- Add a horizontal brace with scrap 2x4

- Support wall under location of cut(s)





# Stringing Walls

- 🏠 Straightens all exterior walls
- 🏠 Aids in properly aligning trusses
- 🏠 Telegraphs directly to siding



- Minimum 3 nails to anchor 2x4 post

- 2x4 on outer corner
- String taut, outside edge of 2x4
- Line is 1½ - 2in above top plate



- Only use straight 2x4's for checking against string



- 🏠 Brace where 2 exterior walls meet
- 🏠 Avoid over-bracing
- 🏠 However brace wherever necessary

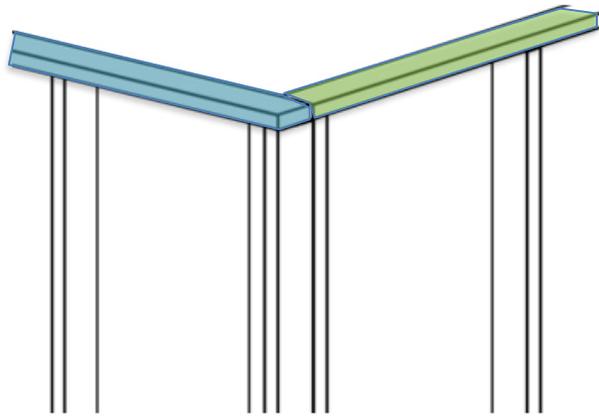


# Stringing walls cont.

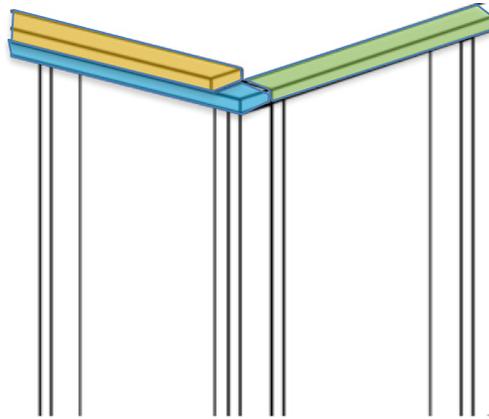
- 🏠 After stringing and bracing walls, plumb all interior walls with 8' level and nail off
  - 🏠 Center of bubble is essential
  - 🏠 Only check level against top and bottom plate

# Cap plate

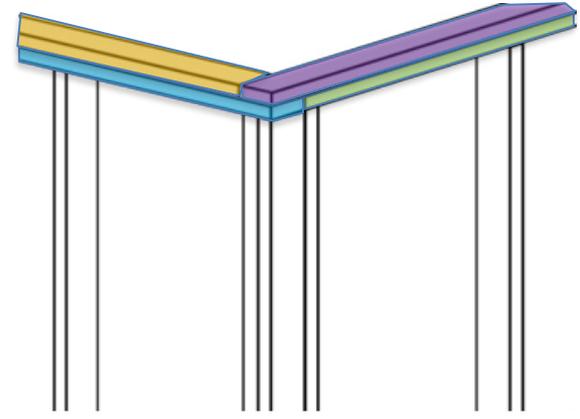
- 🏠 Cap plate only when walls are plumb, strung, and nailed off
- 🏠 Measure using bottom plates
  - 🏠 Mark measurements on bottom plate and cap plate
- 🏠 “Walk” cap plate (work from one end to the next)
- 🏠 Overlap at least 4’ from where walls join/intersect
- 🏠 2 nails over every stud
- 🏠 5 nails on intersecting walls



Without Cap Plate



With First Piece



With Both Pieces

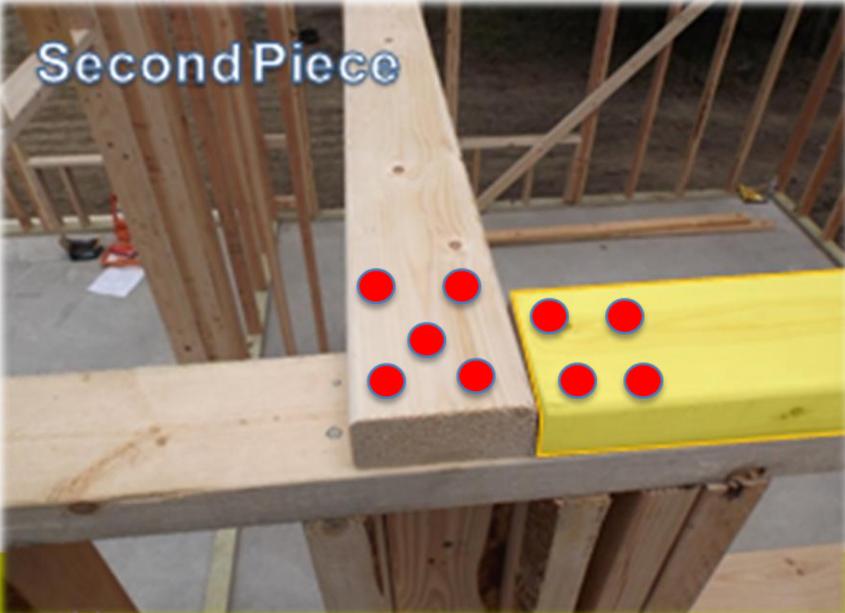
No Cap Plate



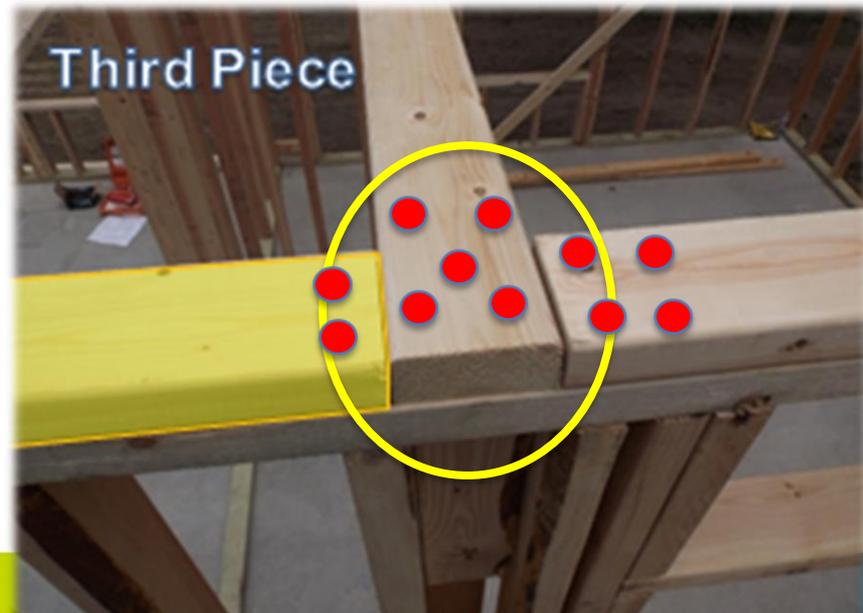
First Piece



Second Piece



Third Piece



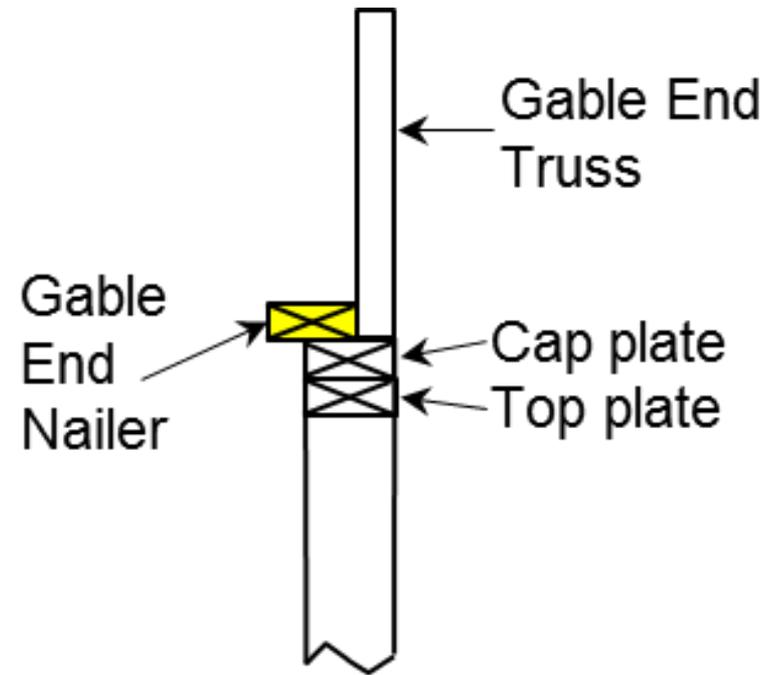
# Temporary Truss Support

- 🏠 Located in the front of the house where there is a dearth of interior walls
- 🏠 Use wall pallet to make temporary wall
- 🏠 **Move into house before last exterior wall is stood**
- 🏠 Adjust to fit space
- 🏠 Nail securely to other walls
- 🏠 **DO NOT** attach to slab



# Gable End Nailers/Truss Nailers

(front)



# Questions?