

Before You Start...

Allow 24-48 hours for delivery
Confirm wall heights
Provide delivery contact name & phone #
Arrange for at least 2 people to unload blocks from 5 ton truck
Ensure good access to excavation
Provide 2x4s, electric drill, stakes & #8 wood deck screws
Rebar, 7" zip ties

Any Questions?
Contact

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VANCOUVER ICF

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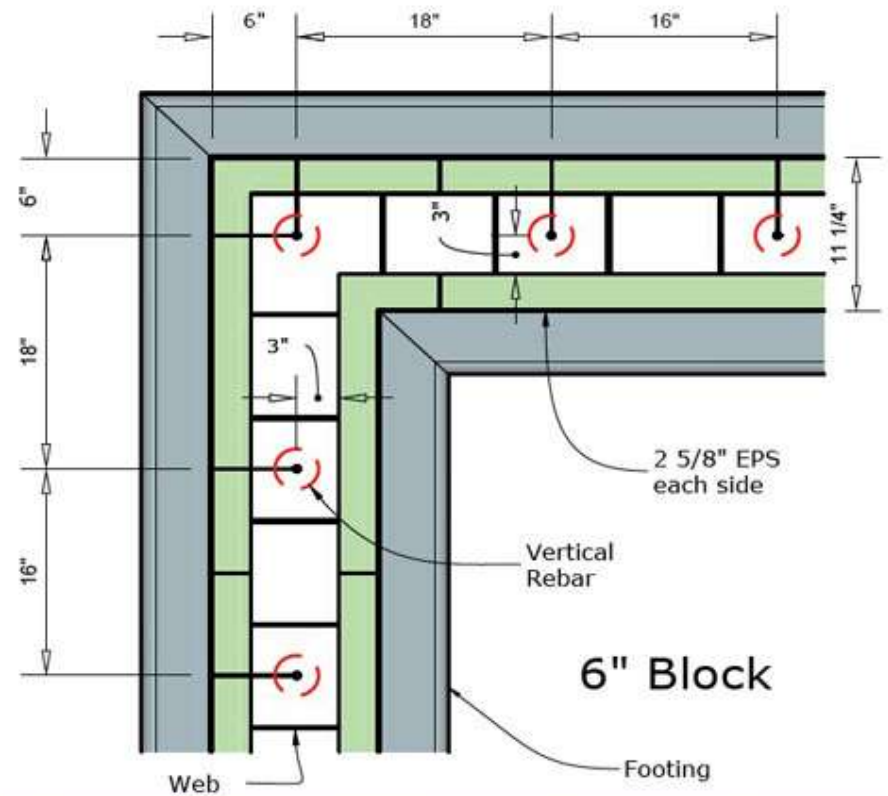
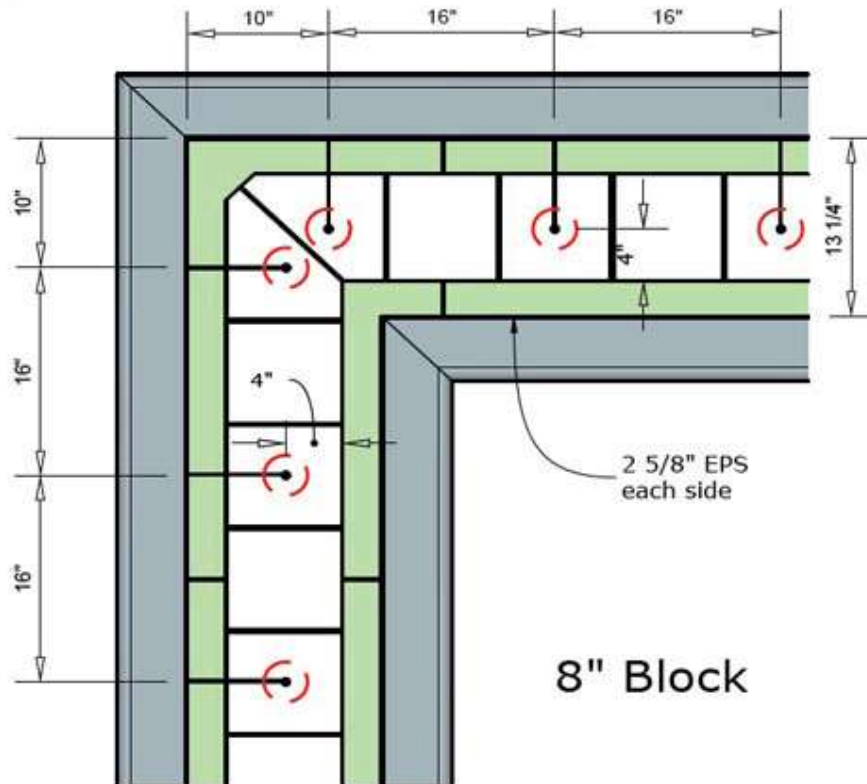
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Installing verts in footing

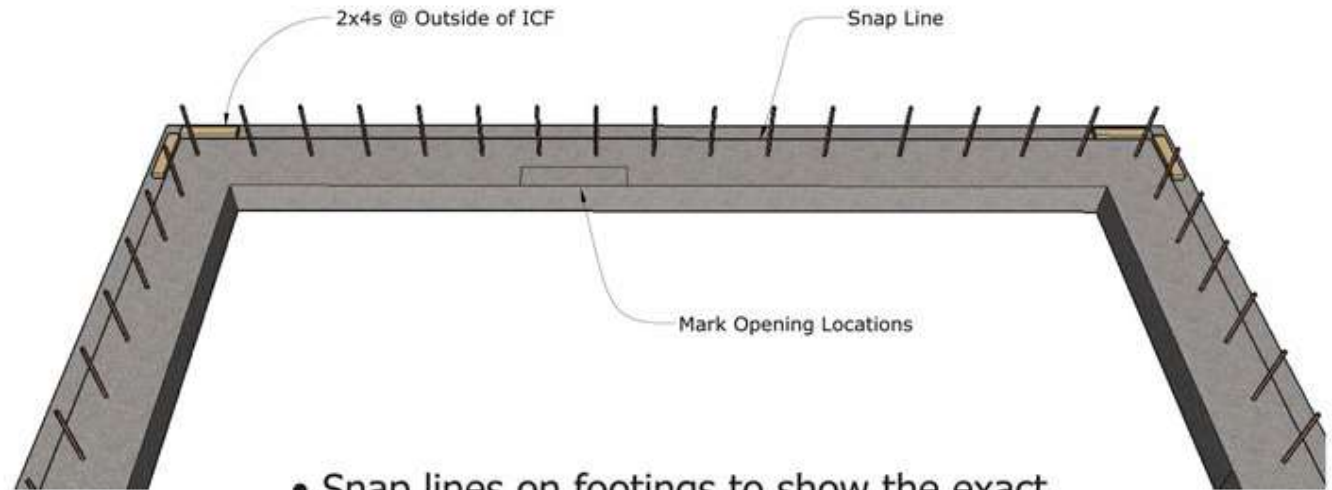
Advisory Only. Always Consult Your Structural Engineer Regarding Rebar Placement



Note: Level footings are extremely important. Use laser when screeding footing concrete

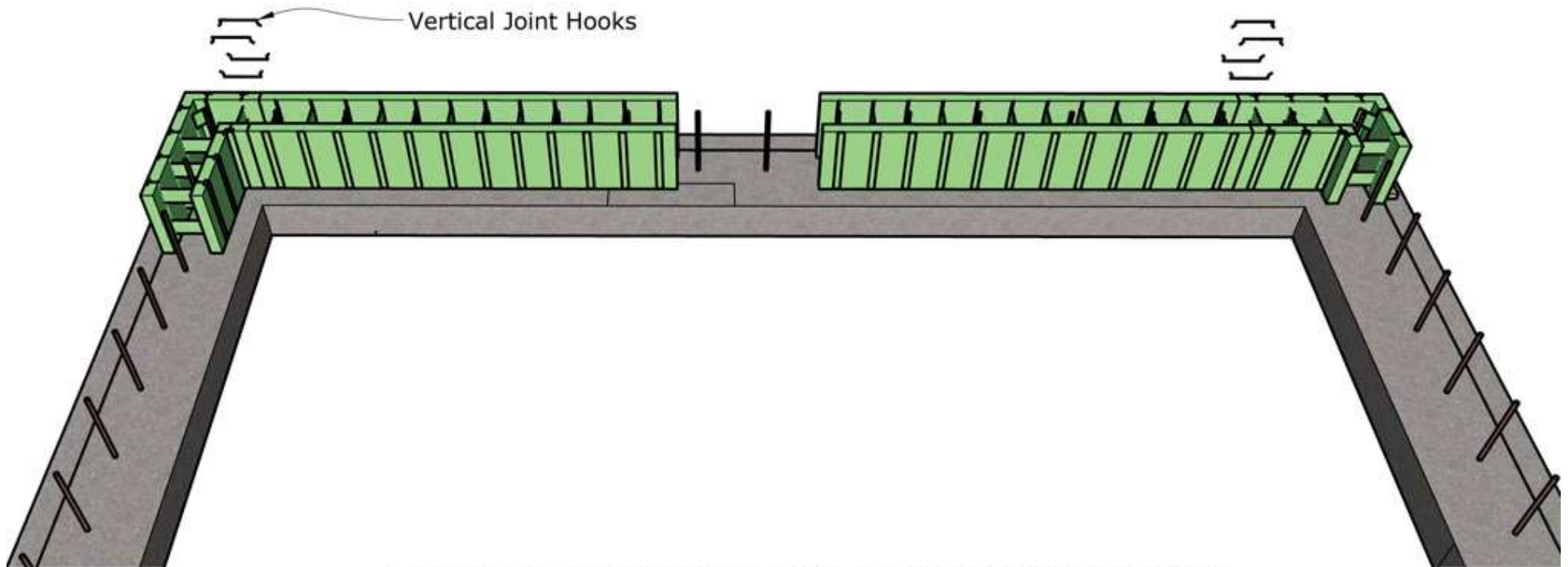
1. Getting Started, the Footings

- Footings should be poured to an accuracy of 1/4". Always use a laser when screeding the top of footings to ensure accuracy.
- Footing steps should be a multiple of 18" to match the height of the Nudura block.
- When pouring the footings, install vertical rebar correctly to ensure they are located between the webs.
- When unloading Nudura, place in the center of the excavation so that the wall can be built and the bracing installed without having to move blocks.



- Snap lines on footings to show the exact location of outside of foam.
- Check the layout for square by checking diagonals
- Pairs of 16" 2x4s nailed on the outside corners to prevent blocks from shifting during the build.
- Mark out openings for windows & doors on the footing to determine marriage line location.

2. Install corners around perimeter



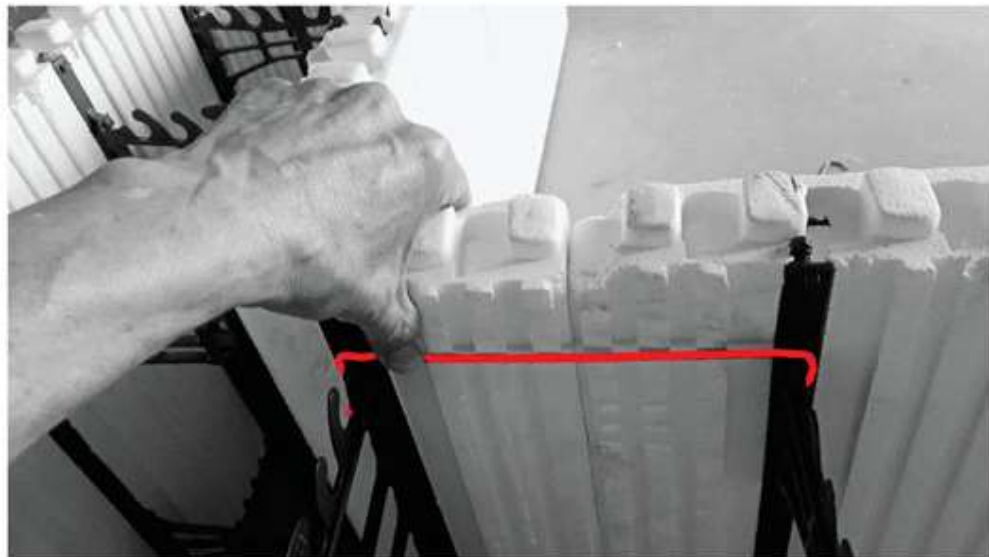
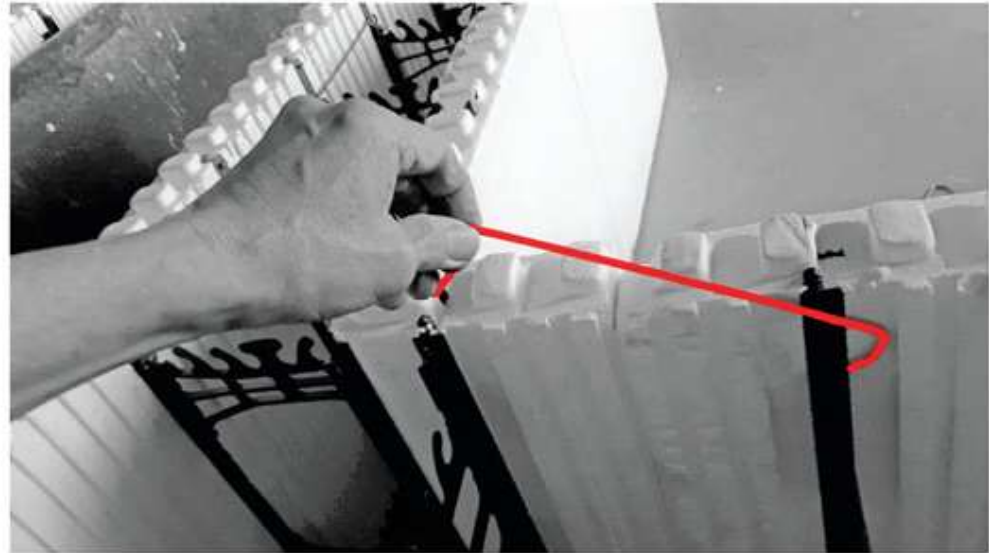
- Place corners around the perimeter in the same orientation
- Build inwards from each corner using standard blocks.
- Use 4 VJHs (vertical joint hooks) on each joint of the first row, 2 VJHs on the second row, and 2 VJHs on each corner joint for the rest of the wall.

Vertical joint hooks

Boxes of 200 supplied with ICF shipment

On short end of corner, hook end goes on straight black web.
Flanged end on corner web.

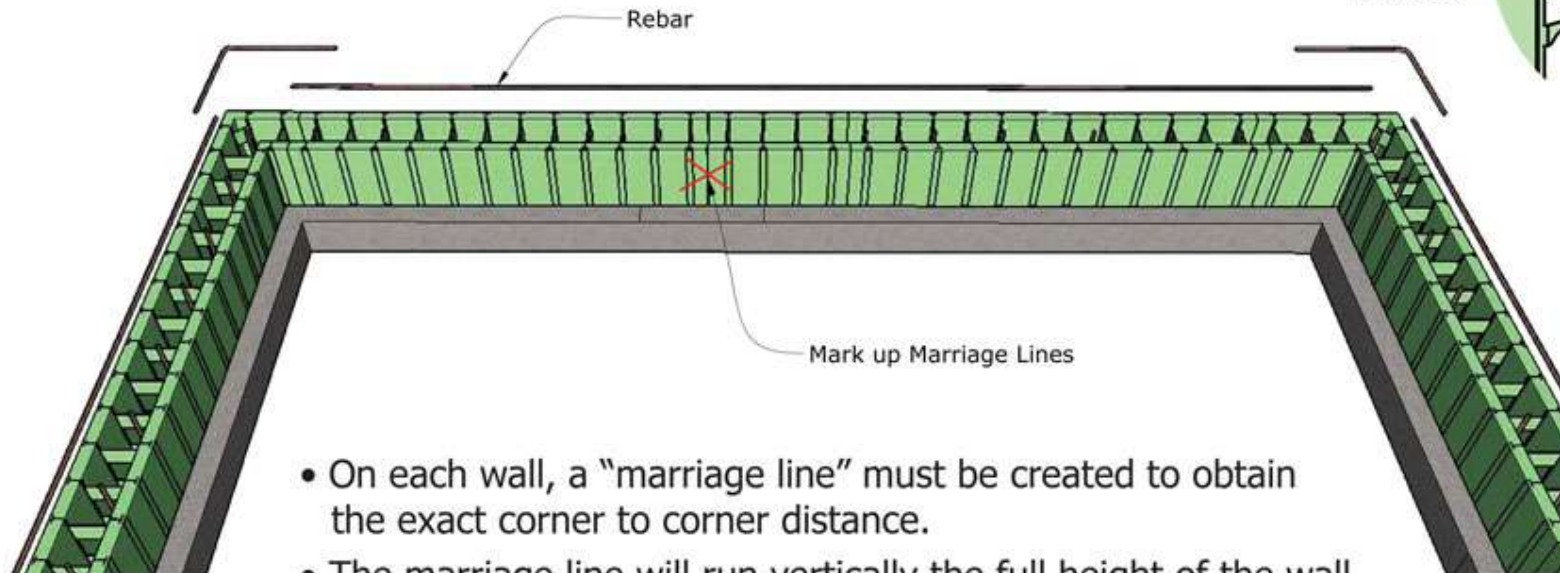
Claw of hammer used for bottom VJH



3. Create marriage lines

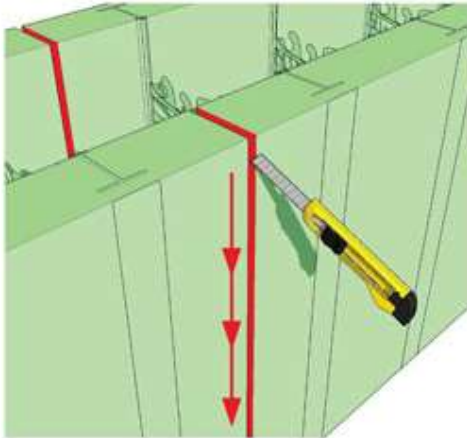
1st Course location
& above 2nd Course

Inside
Face

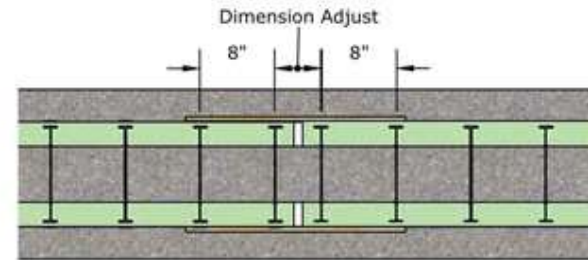


- On each wall, a “marriage line” must be created to obtain the exact corner to corner distance.
- The marriage line will run vertically the full height of the wall (this is why it is ideal to locate the marriage line at an opening).
- If the marriage line falls on the web of one of the blocks, cut the adjacent block back two inches.
- If not using Helix, install the horizontal rebar as per engineering drawings. Use 7” zap straps to tie rebar overlaps.

Marriage lines



Use retractable blade knife to cut EPS



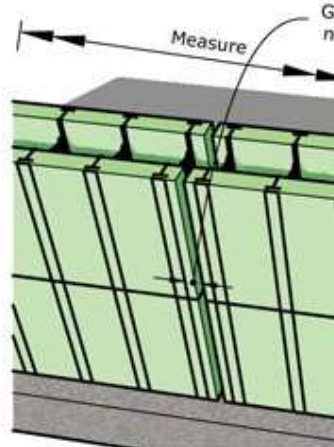
Create a 'Marriage Line' to achieve a set dimension. Typically one per face, within an opening area and near a corner.

Note:

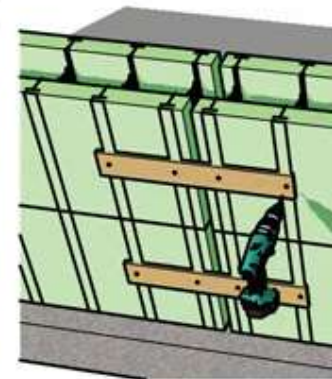
Where a 'marriage line' occurs on, or very close to a web, move the cut 2" away.

Also:

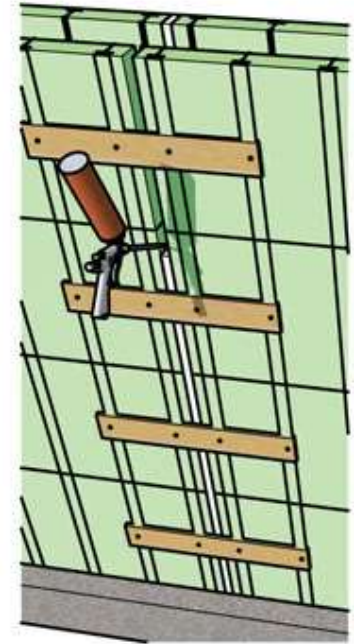
Where creating a 'marriage line' at a corner, choose the long end of corner with webs for strapping



Check overall dimensions (allow 2 5/8" each side additional to concrete dimensions)



Use 1x4 strapping to fix each side in place



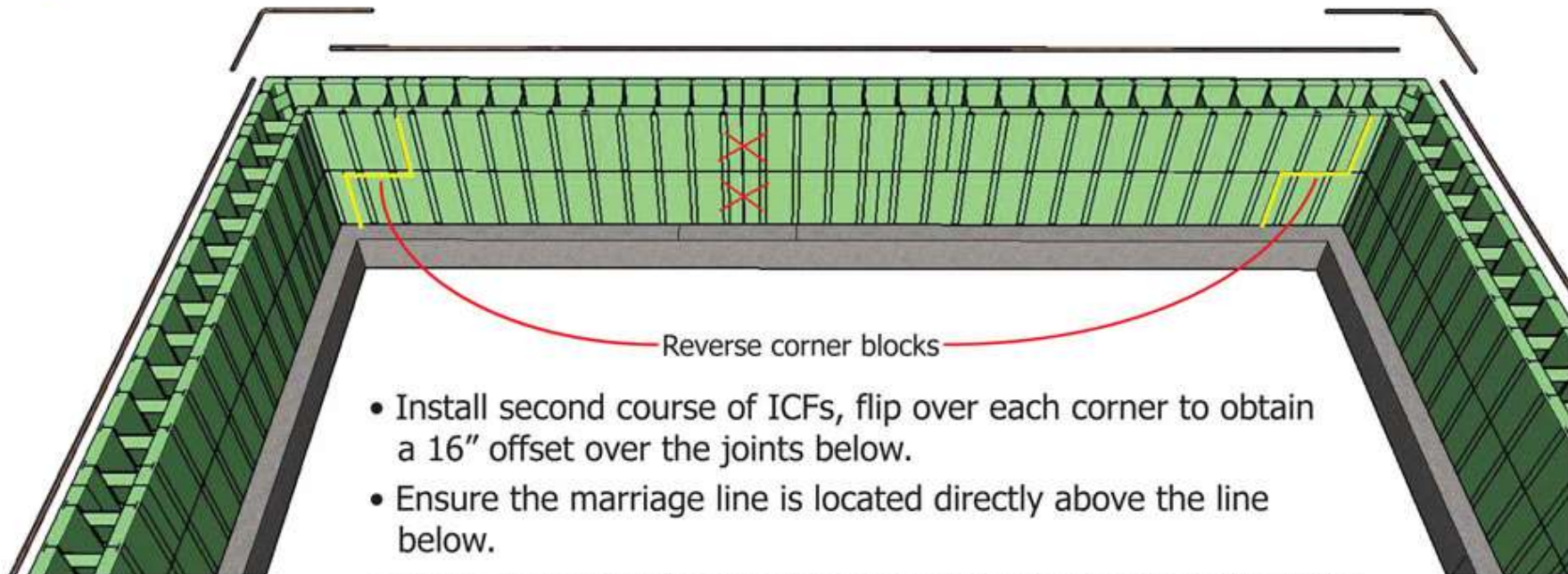
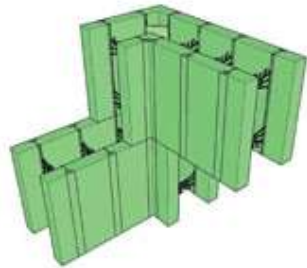
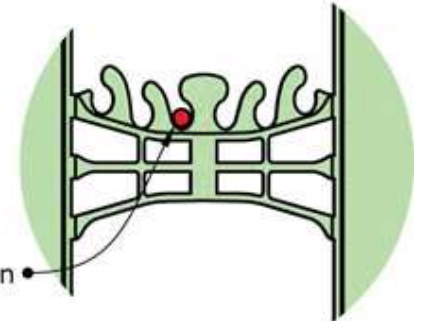
Fill join completely with foam using Applicator

MARRIAGE LINE

4. Install second course

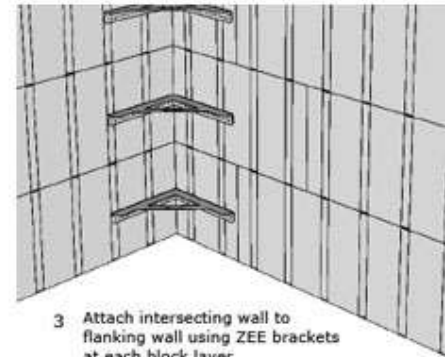
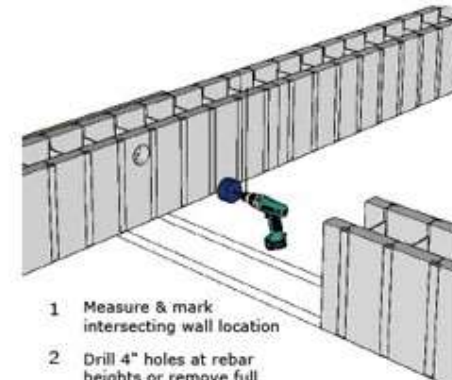
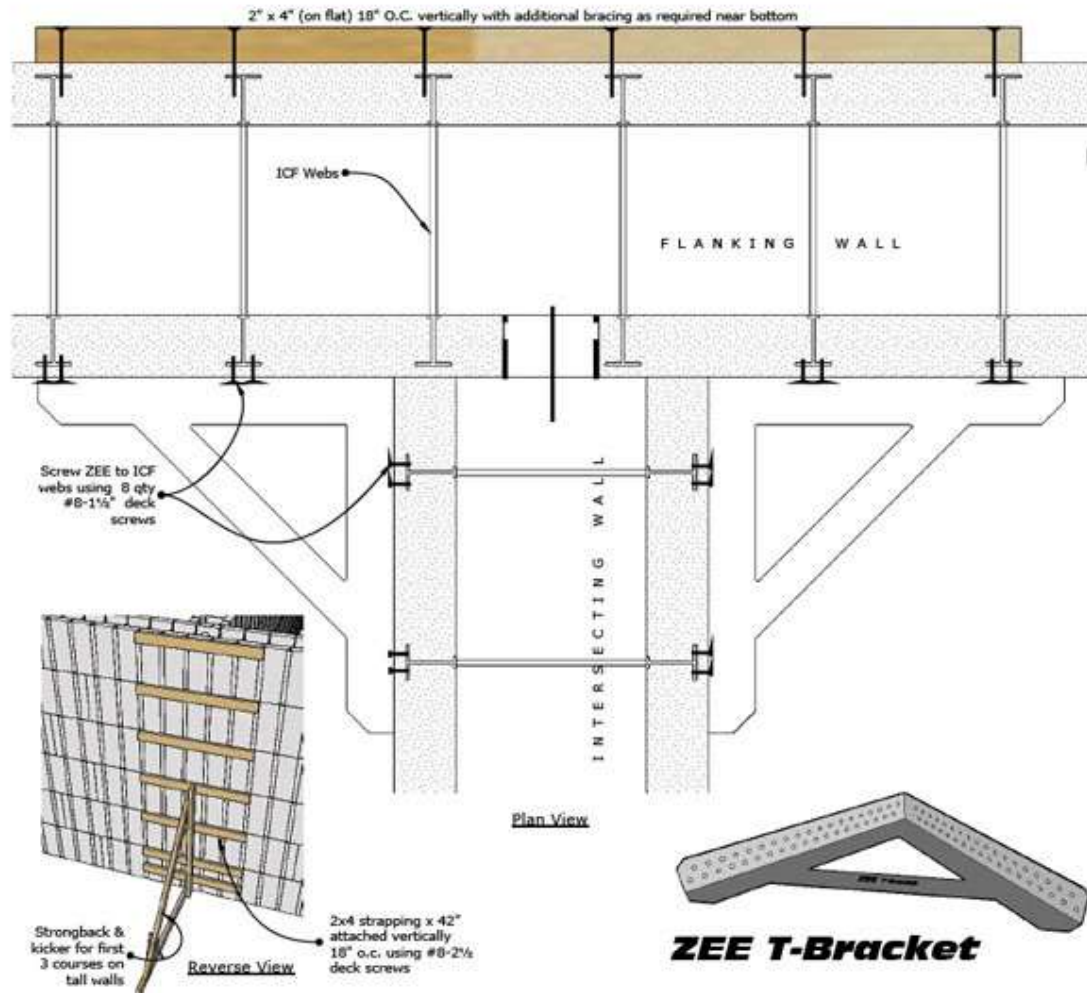
Inside
Face

2nd Course Location



- Install second course of ICFs, flip over each corner to obtain a 16" offset over the joints below.
- Ensure the marriage line is located directly above the line below.
- Install horizontal steel in the web notch 1" away from the rebar in the layer below, allowing the vertical steel to weave in between the horizontal rebar.
- Only on 2nd course, afterwards back to second position.

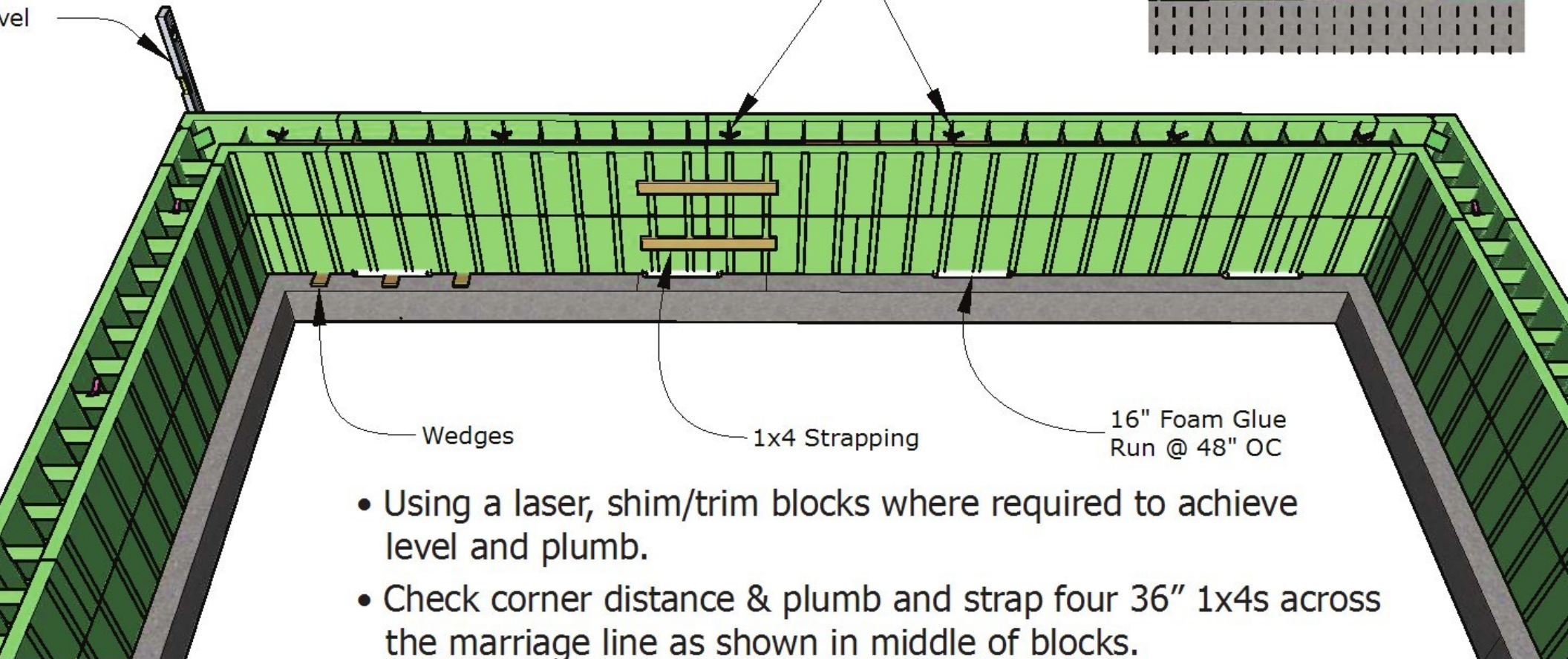
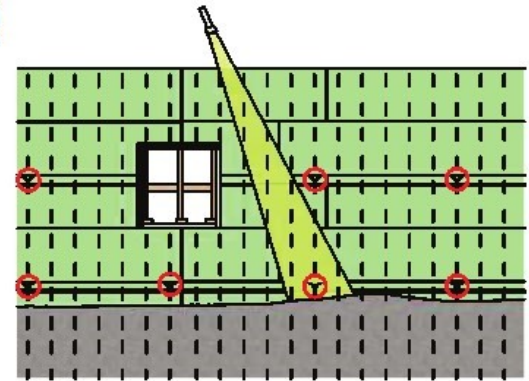
ZEE installation



NOTE: Face bracket downwards to avoid catching concrete overspill

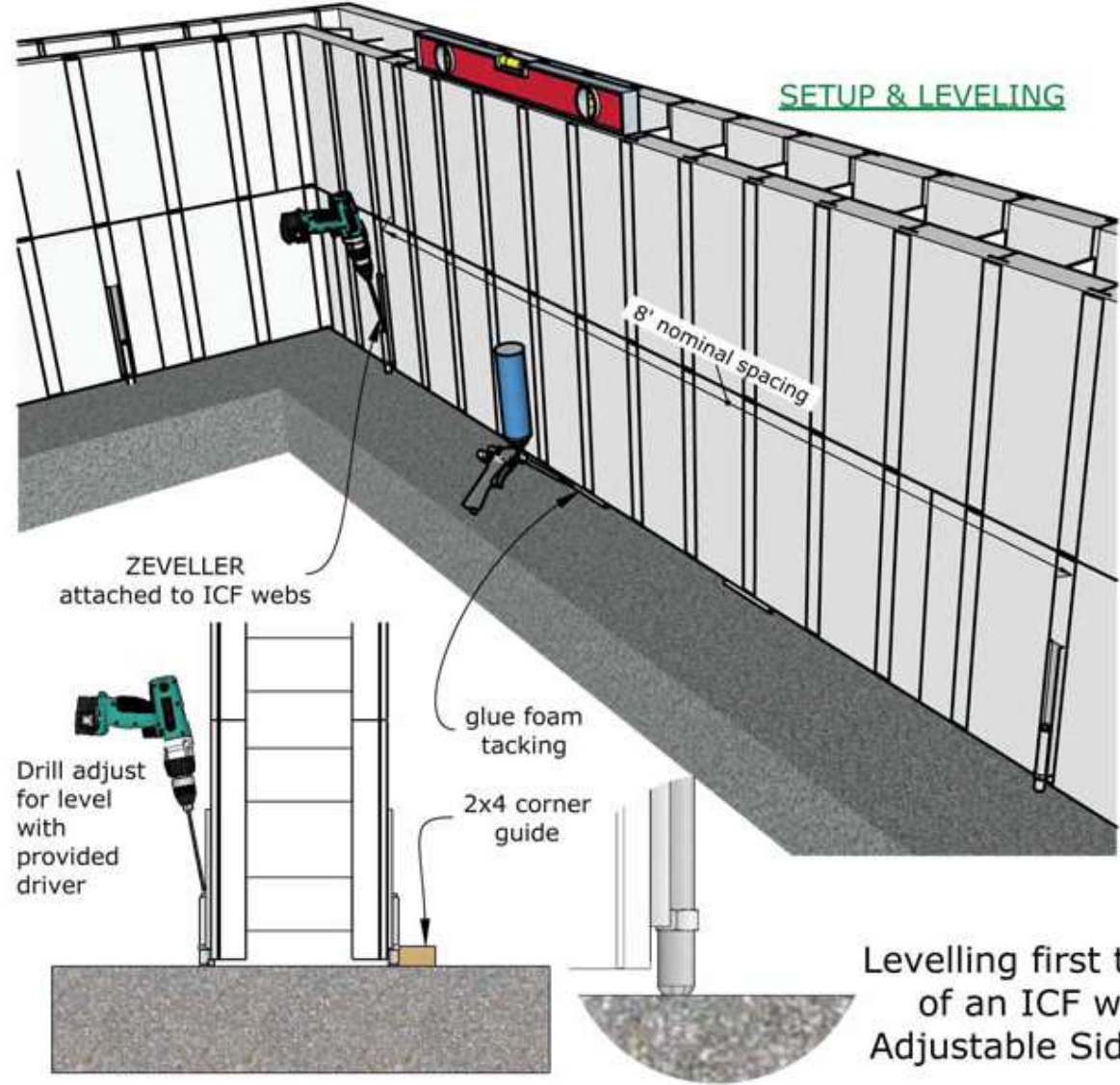
5. Level, shim and foam glue

Tip: Attach tie tape or similar to plastic webs every other course, 4 foot O.C., to improve visibility when pouring concrete.

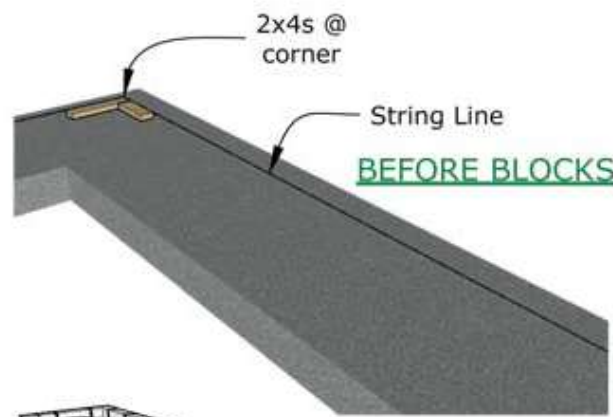


- Using a laser, shim/trim blocks where required to achieve level and plumb.
- Check corner distance & plumb and strap four 36" 1x4s across the marriage line as shown in middle of blocks.
- Foam ICF to footing, 16" inch length, 48" on centre, both sides, to hold the base in position and prevent uplift. 10 minutes later foam all of the wall.

Block levelling



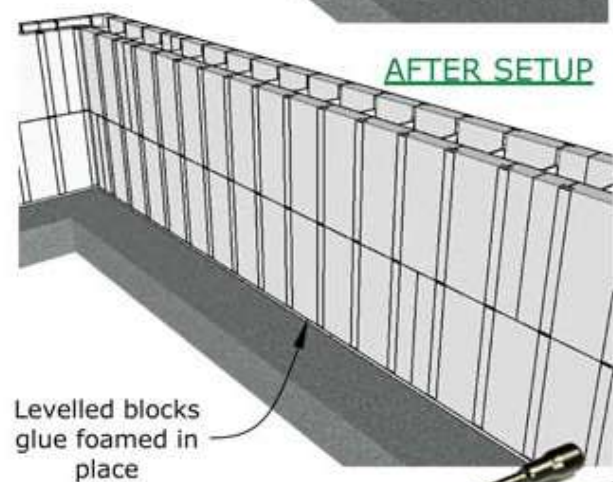
SETUP & LEVELING



2x4s @ corner

String Line

BEFORE BLOCKS



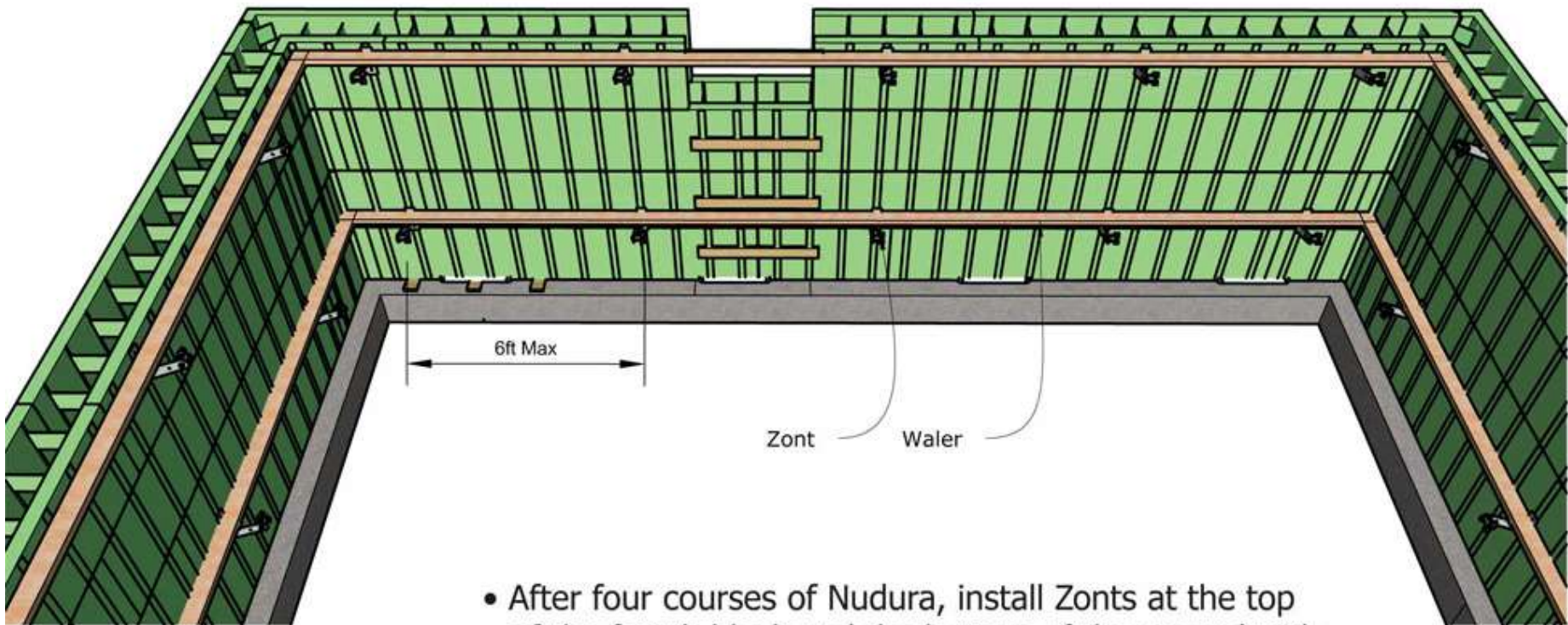
AFTER SETUP

Levelled blocks
glue foamed in
place

Levelling first two courses
of an ICF wall using
Adjustable Side Supports



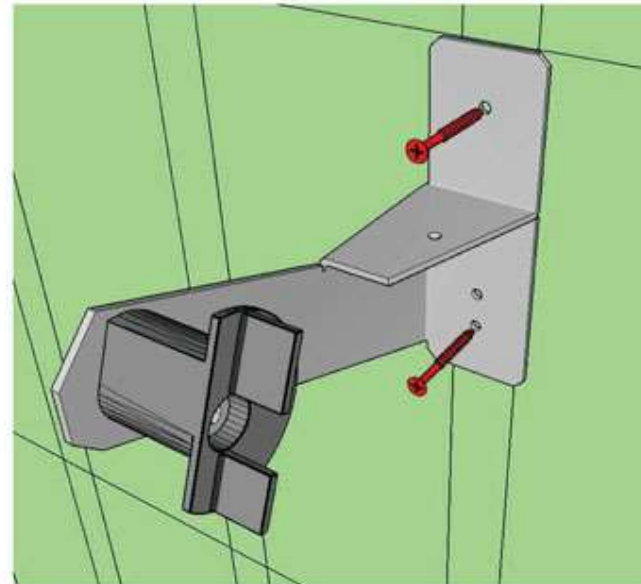
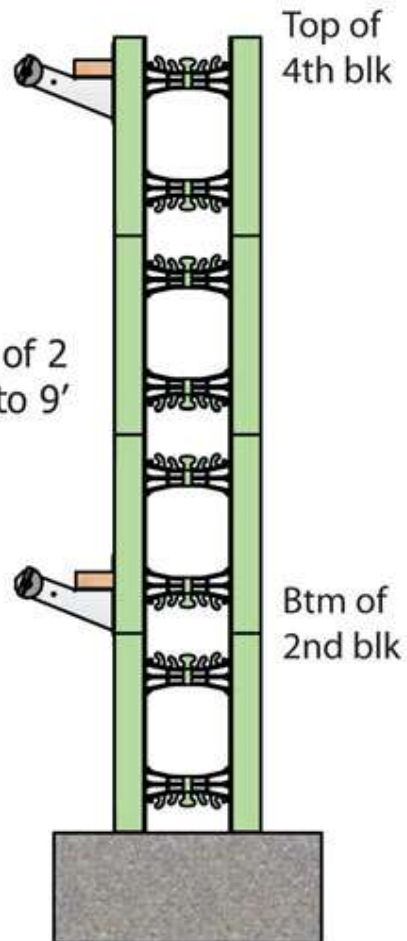
6. Install Zont Bracing



- After four courses of Nudura, install Zonts at the top of the fourth block and the bottom of the second with two #8x1-1/2" deck screws. Place Zonts two webs from corners and 5' on centre.
- Place straight 2x4 walers in Zont saddles, scab 4' 2x4 over joints.

Zont bracket placement

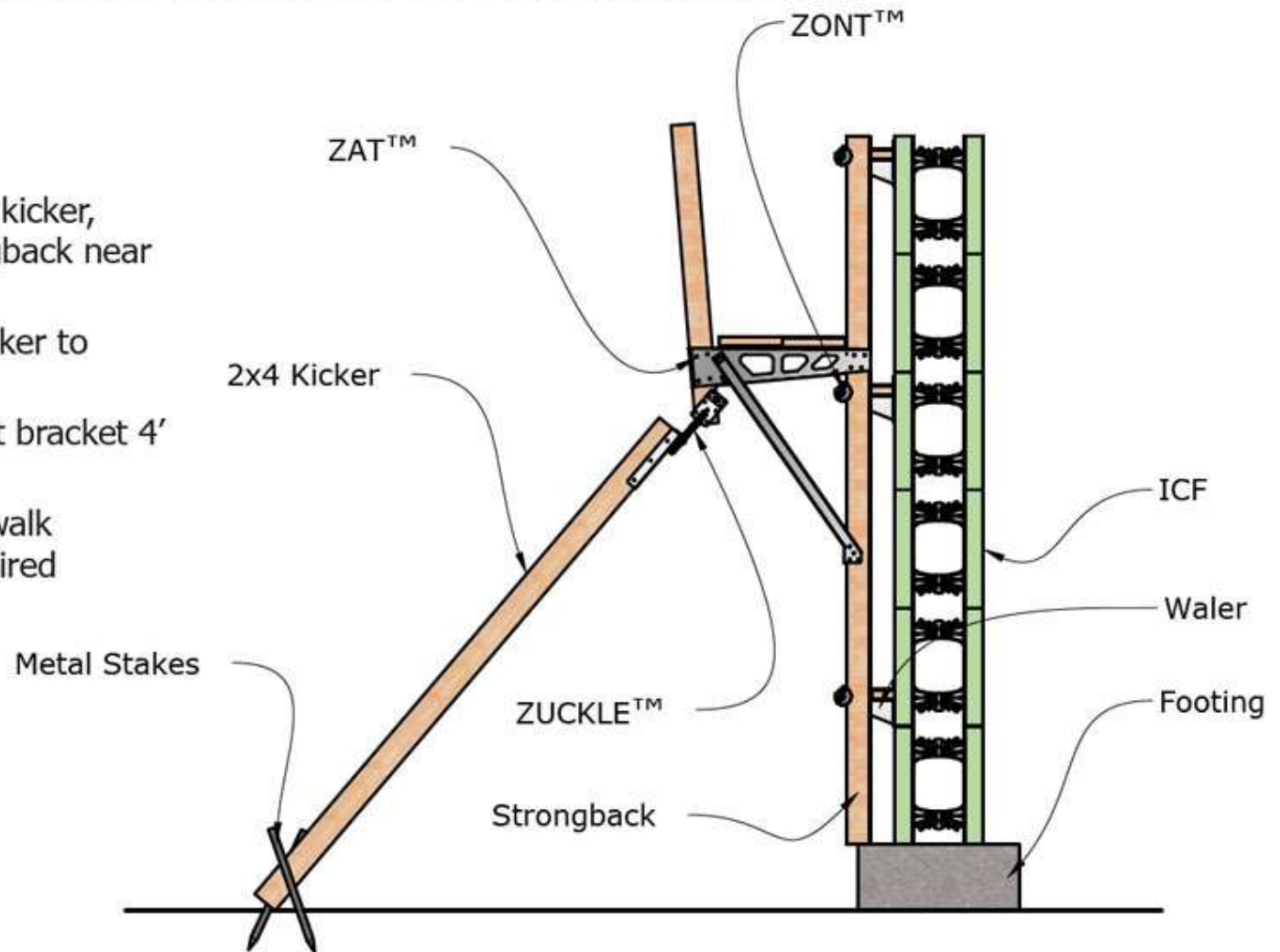
- Attach a minimum of 2 Zonts for walls up to 9' tall



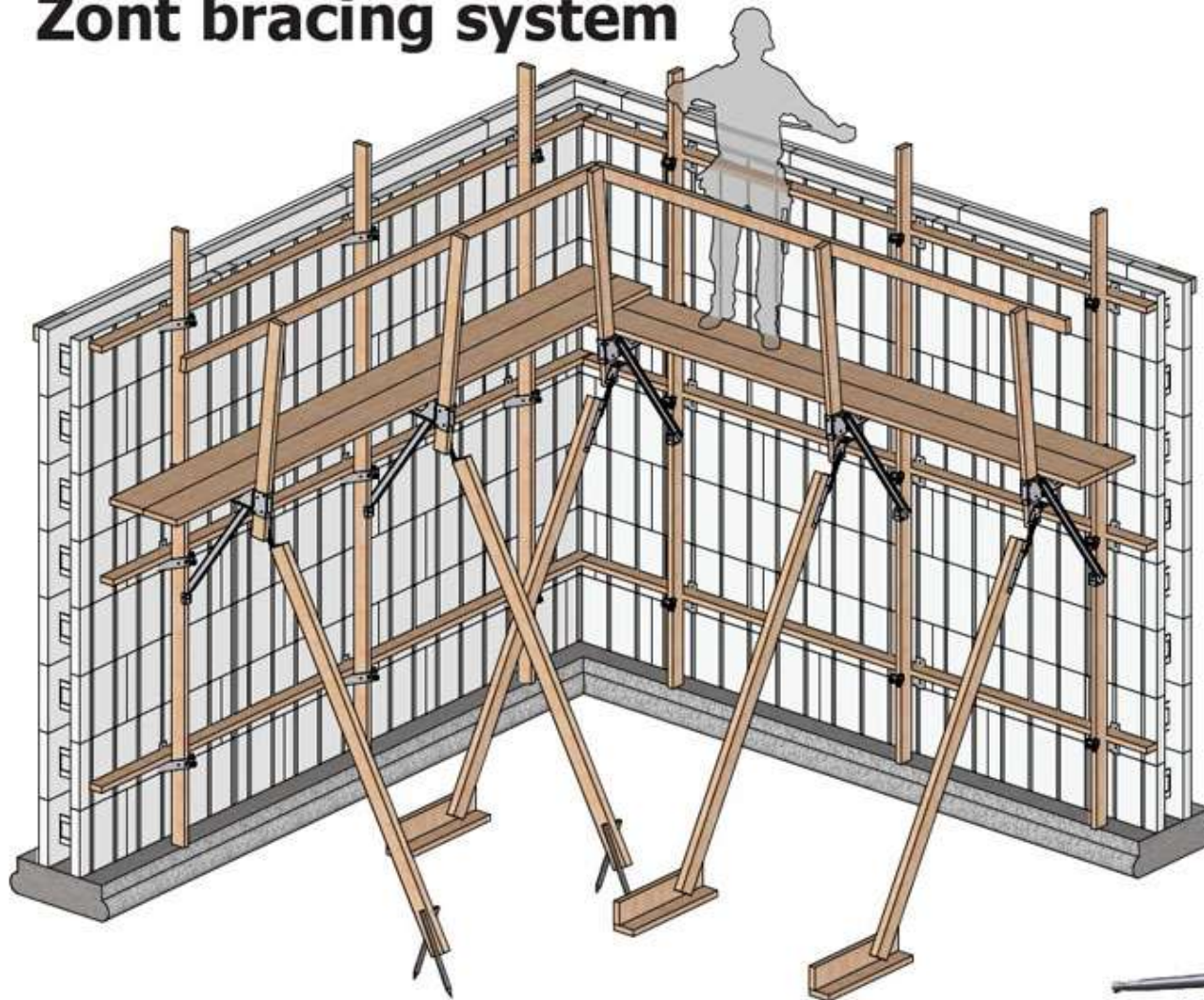
- Attach Zont to web with qty 2 x #8 1.5" Wood Deck Screws (Third hole is if one screw strips).

7. Install Kickers & Zat brackets

- Screw Zuckle to kicker, attach on strongback near top of wall.
- Double stake kicker to ground.
- Screw attach Zat bracket 4' from top of wall
- Install 2x10 catwalk plank(s) as required



Zont bracing system



ZUCKLE®
Waler Bracket



ZAT®
Walkway Bracket



ZUCKLE®
Wall Aligner

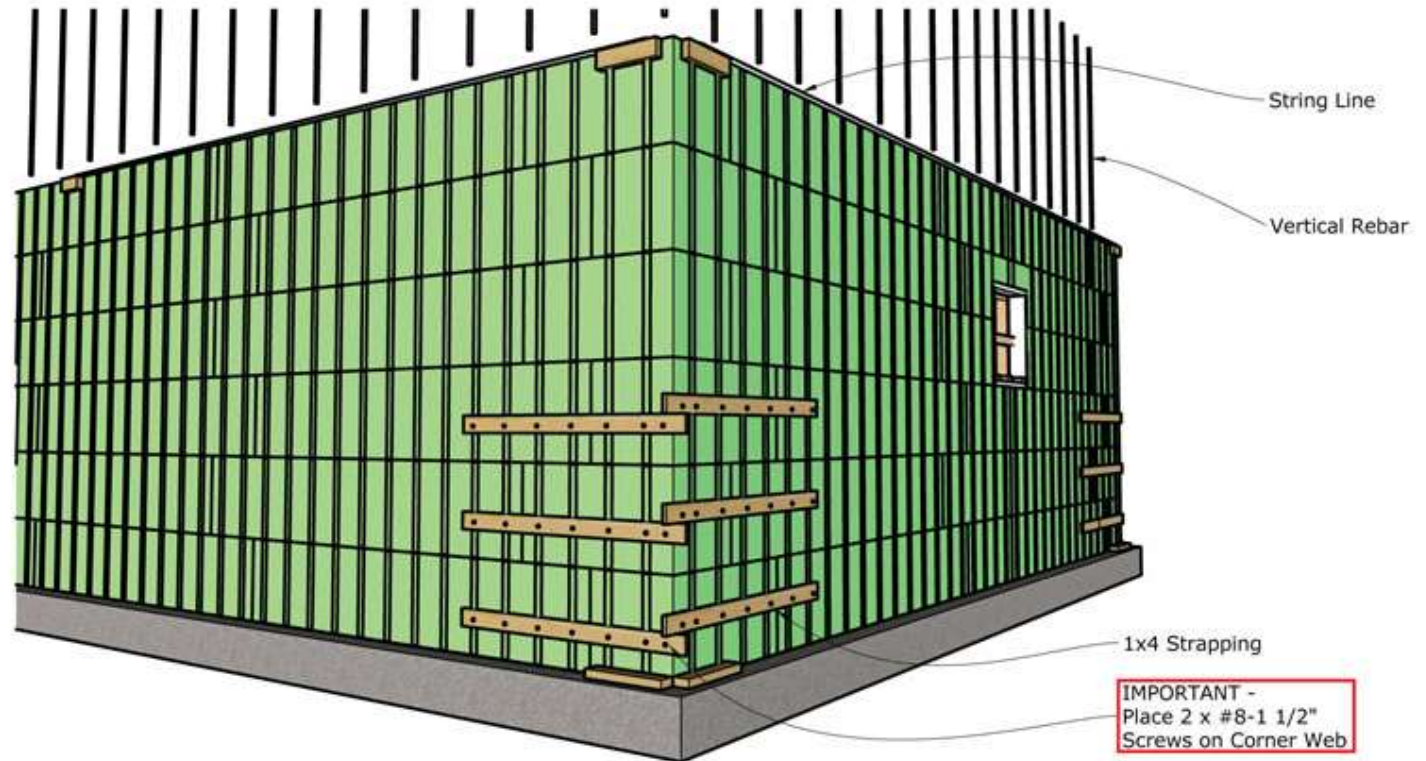


Drill Adapter

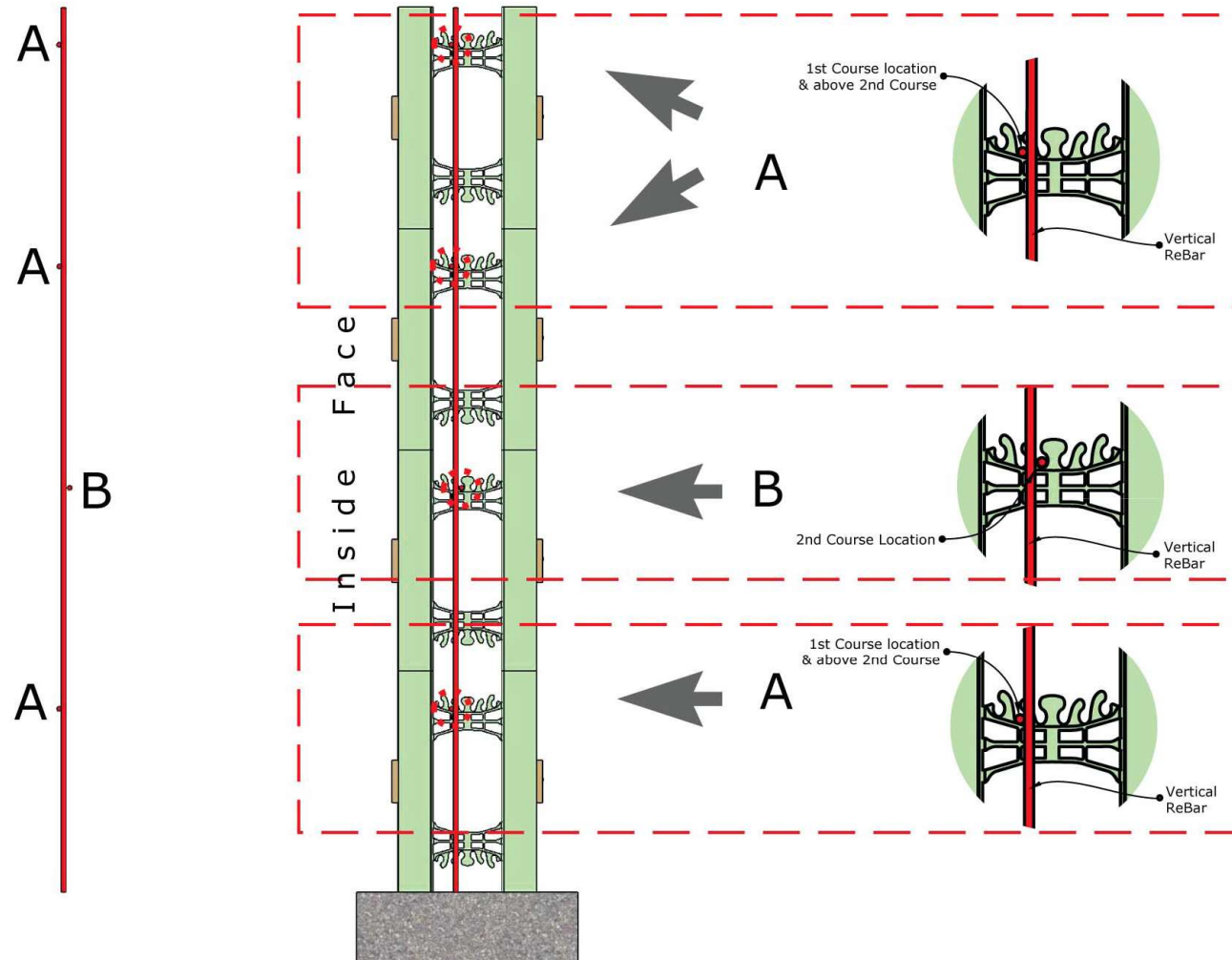
8. Build top of wall, verts

- Using the catwalk, build the balance of the wall.
- Thread the vertical steel between the 1st & 2nd course as per the engineering details.
- Screw 1x4 (or 2x4) blocks on each corner, run a string line between, then adjust each Zuckle to align the wall to each string-line.

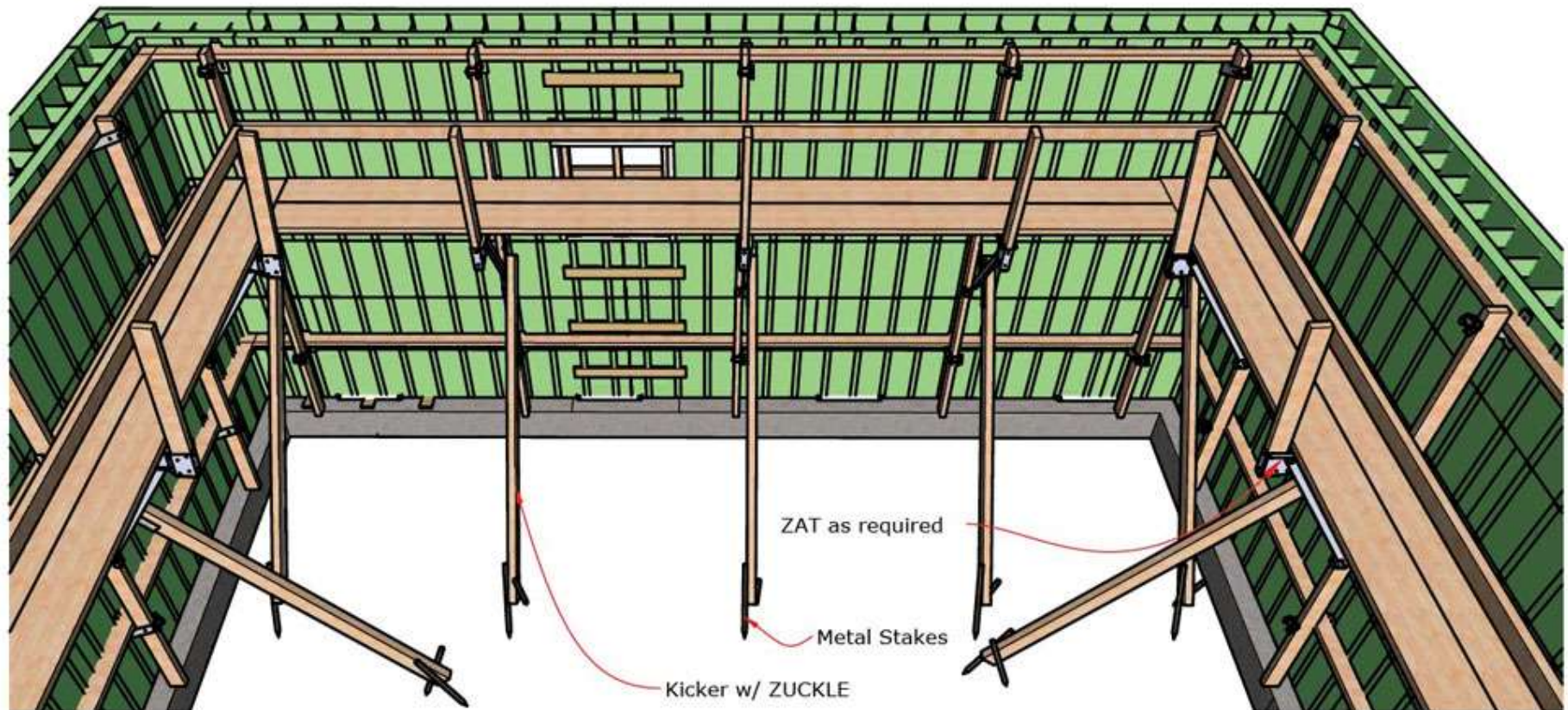
• **Strap first three courses of wall with a 4' 1x4 on outside corners to protect against blowout**



Vertical rebar placement



9. Completed foundation wall



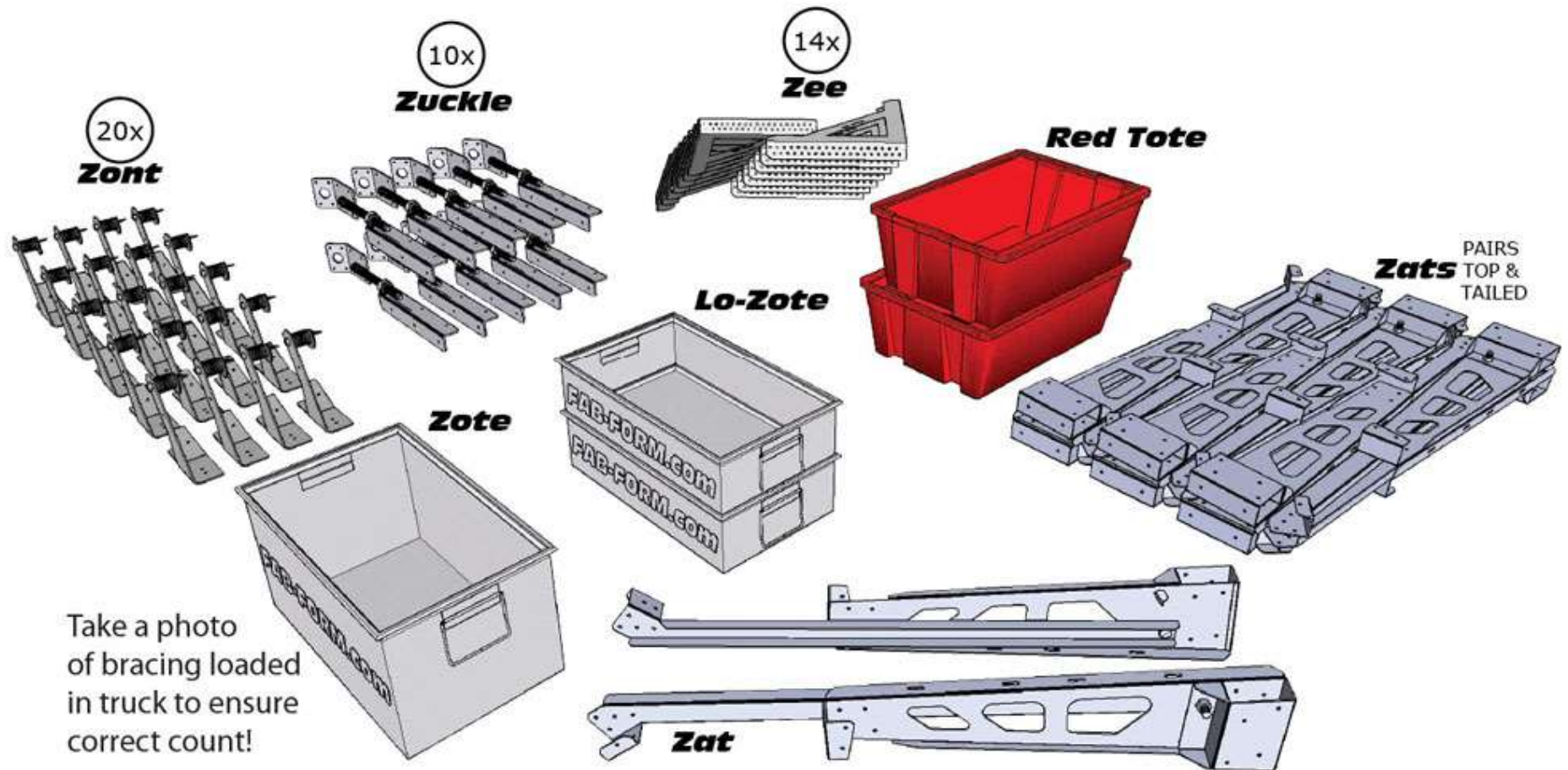
10. Concrete pour

- Order ICF-mix with a 5-1/2" to 6" slump, maximum aggregate size 1/2" and compressive strength required by structural engineer.
- Order pump with a 3" reducer to minimize flow into the forms.
- Place concrete in 3' lifts
- Vibrate with a 1" or 1-1/4" head, do not over vibrate in one location, slow in, fast out.
- ICF corners are vulnerable, pour into each corner and don't vibrate the corner itself.
- After pour, re-check wall with string line for final alignment.

11. Finish

- Dismantle bracing and put in appropriate totes ready for pickup
- Return unused and undamaged ICFs to VancouverICF

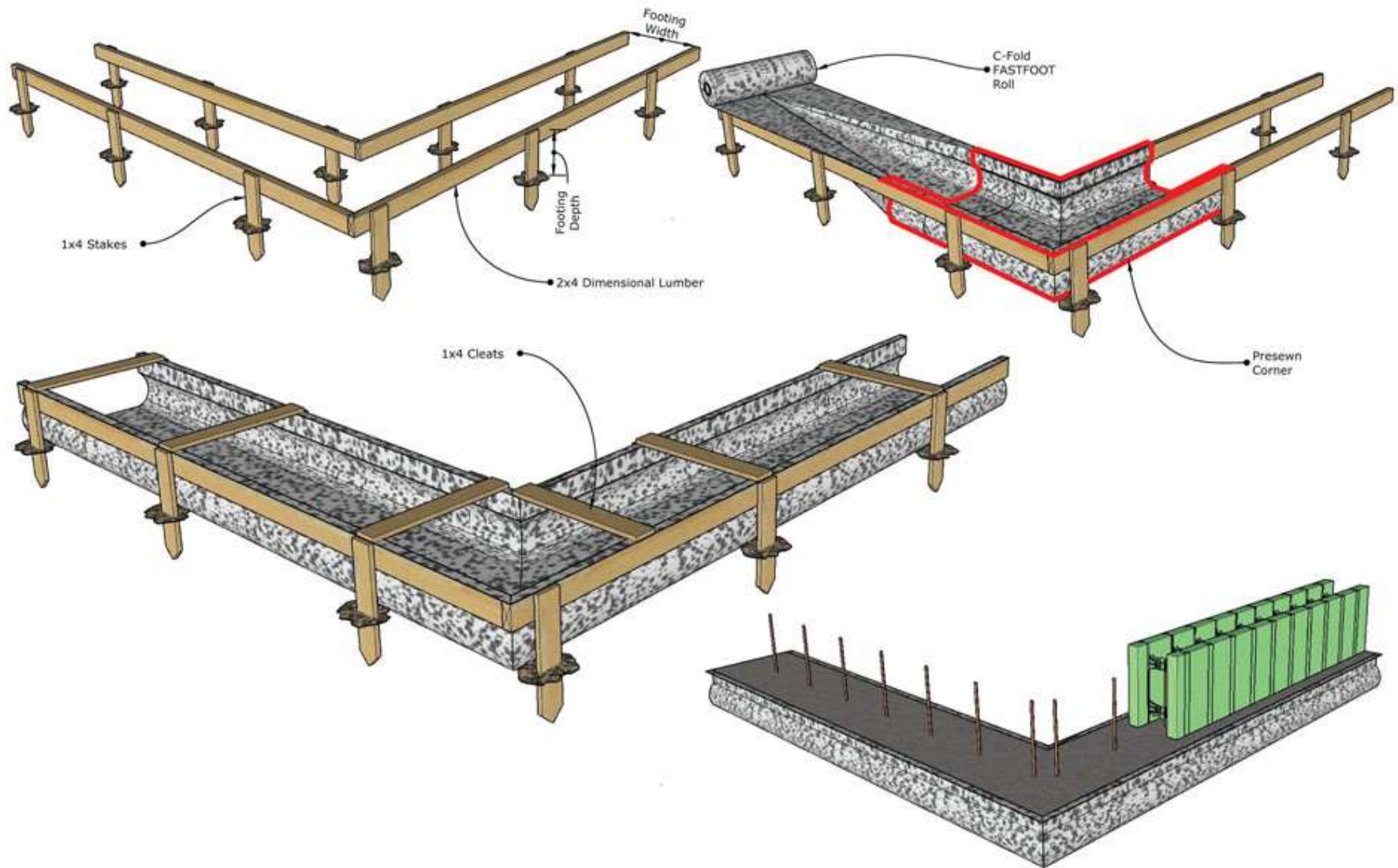
Rental Bracing



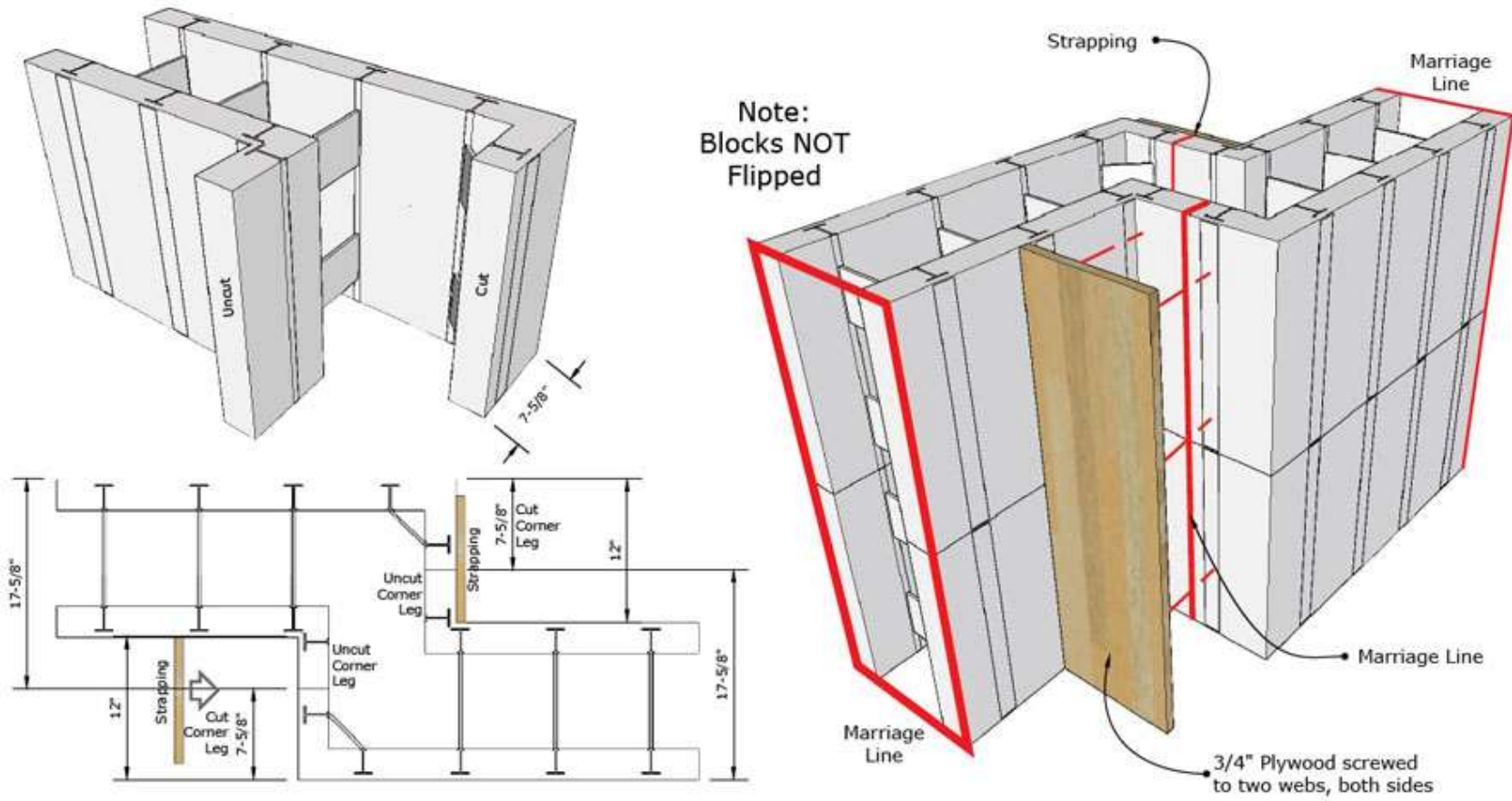
TYPICAL DETAILS

- These details are advisory only

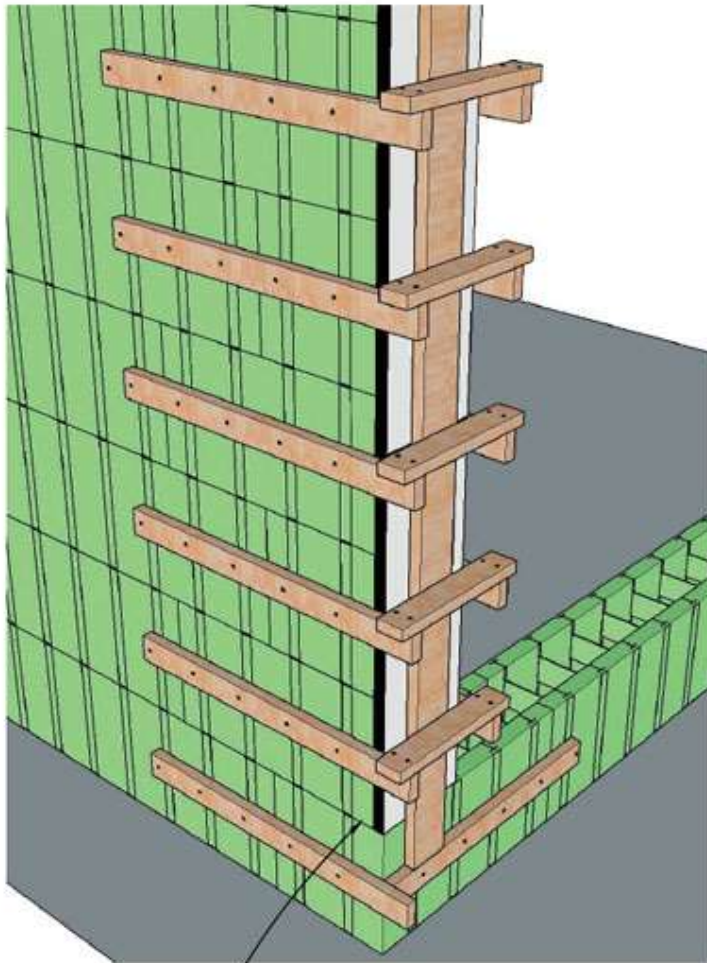
FASTFOOT footing



Short corner returns up to 9"

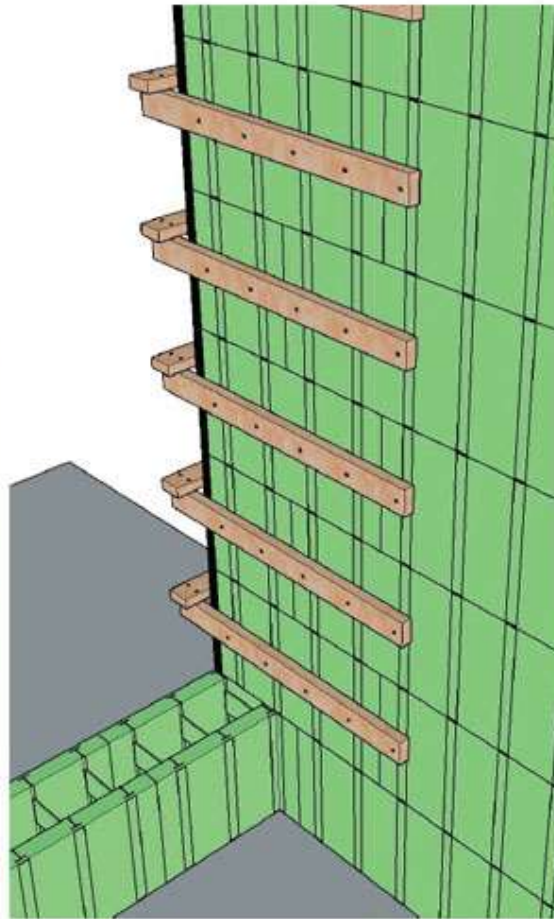


End wall detail

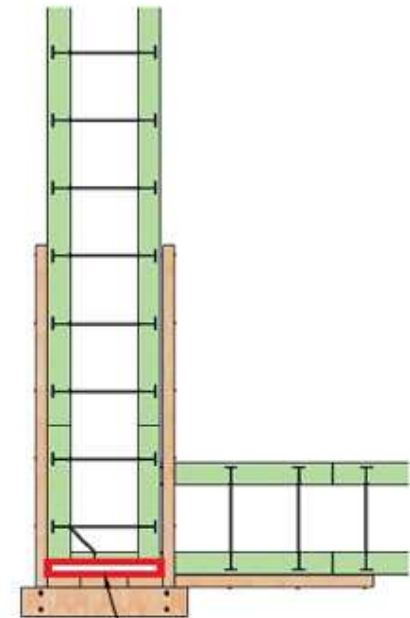


Trim Off foam
interlocks on
corner block
as required

OUTSIDE VIEW



INSIDE VIEW



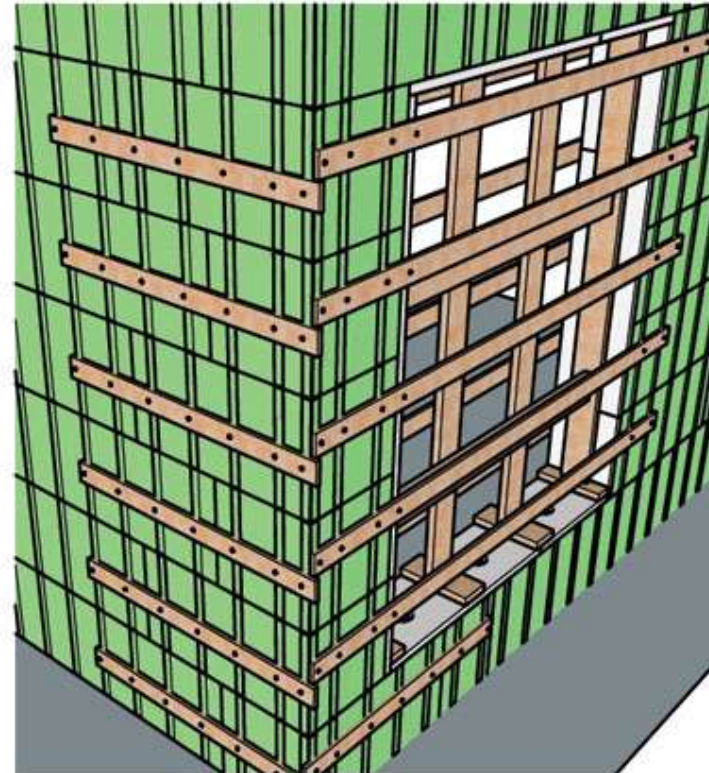
• Gorilla Buck

PLAN

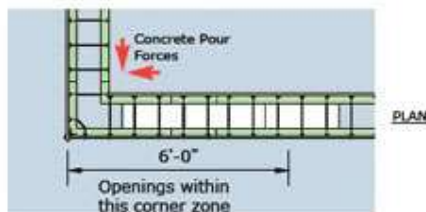
Large openings close to corner



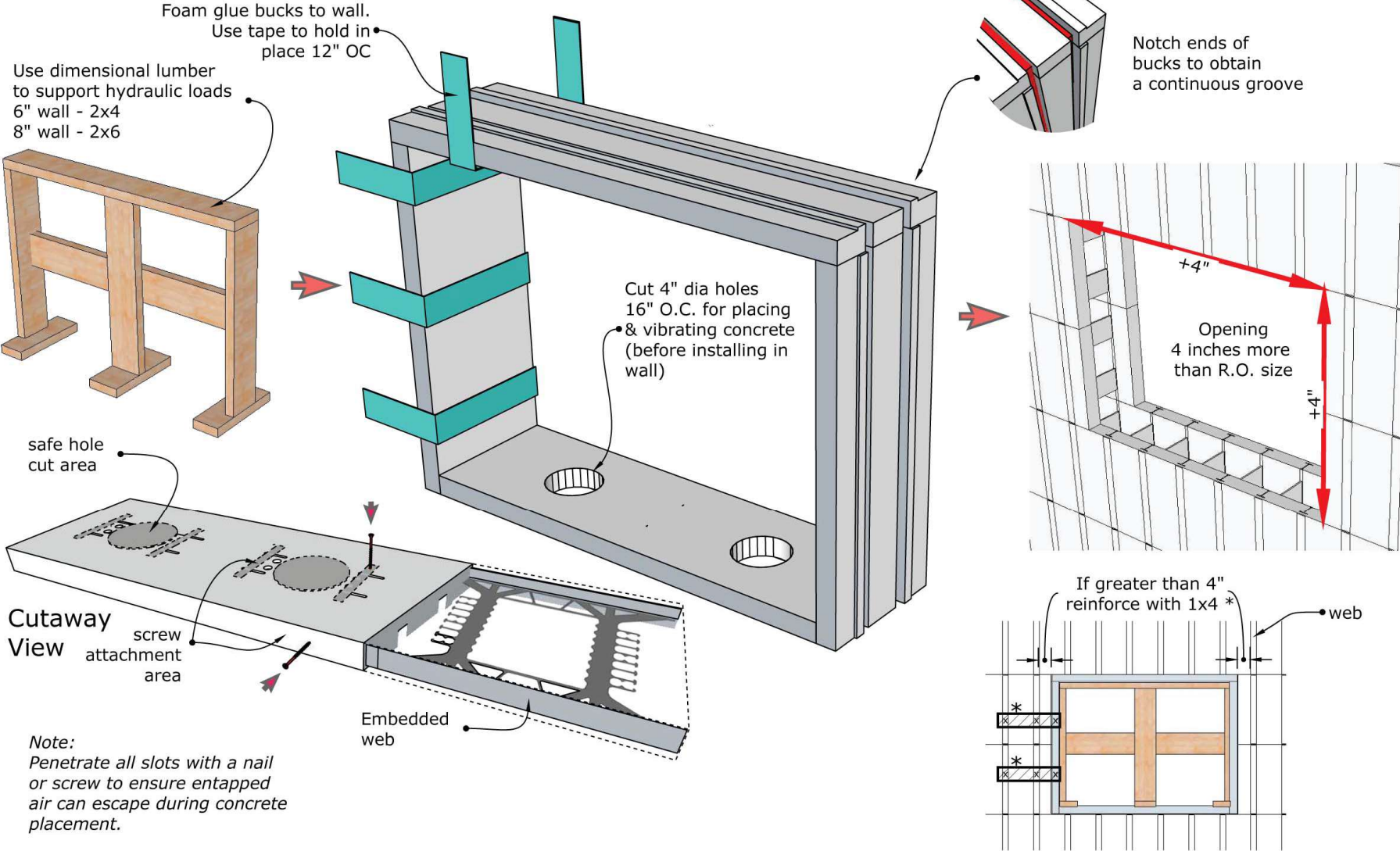
INSIDE VIEW



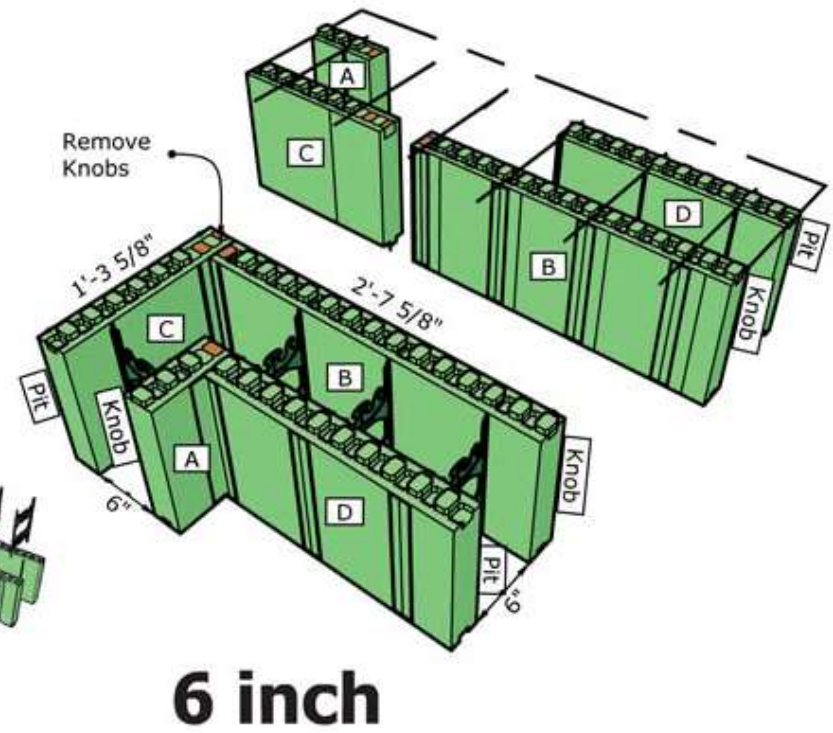
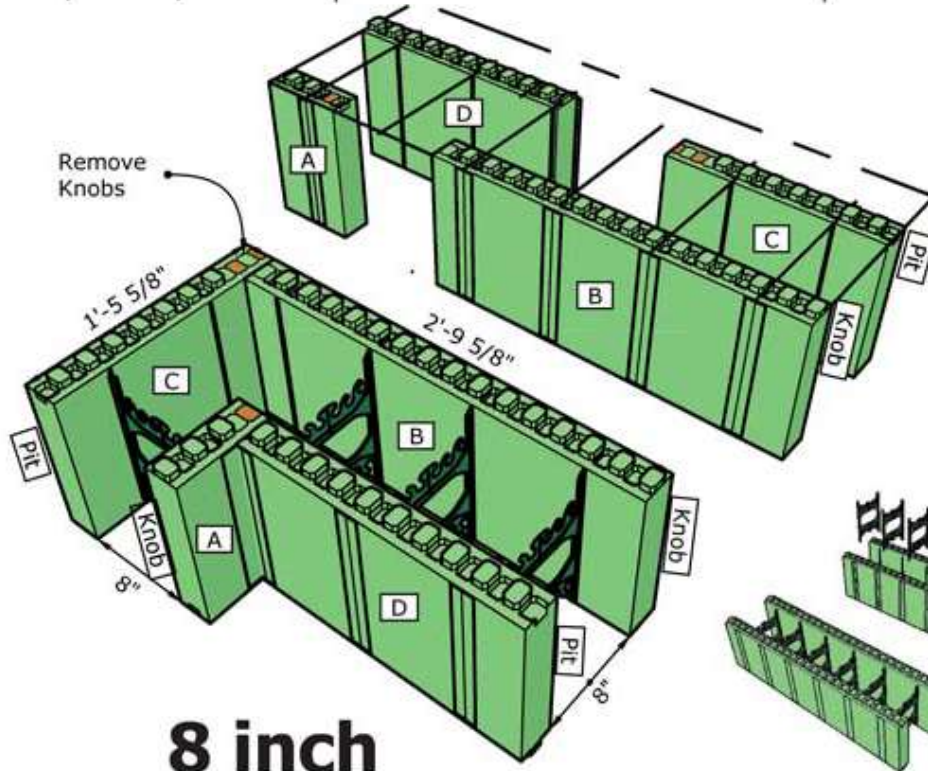
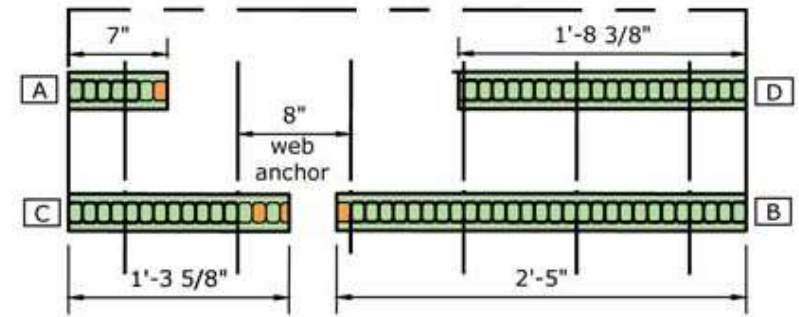
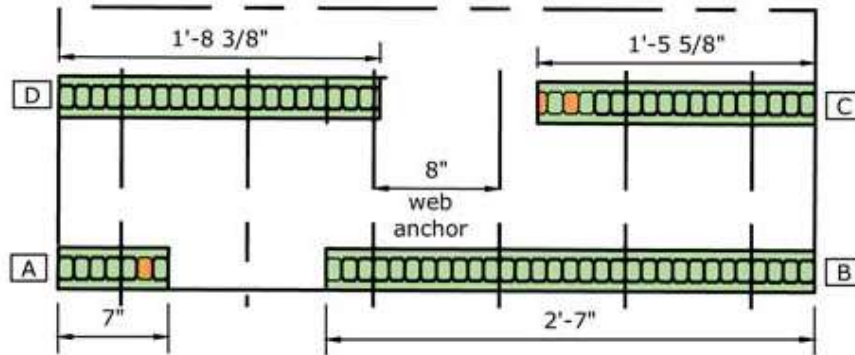
OUTSIDE VIEW



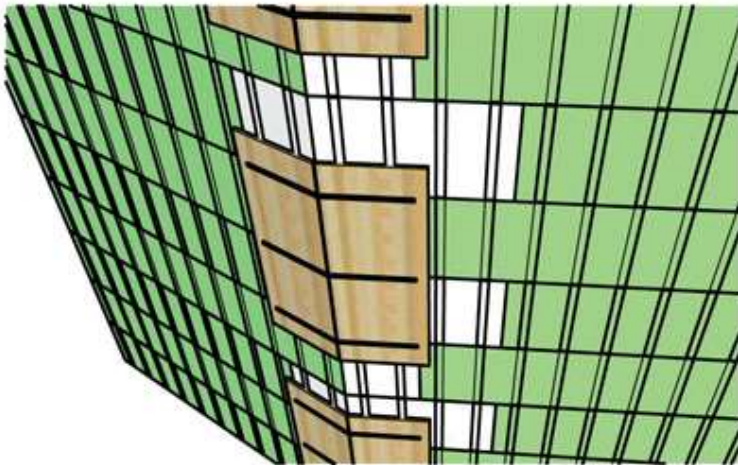
Fox Insulated Bucks



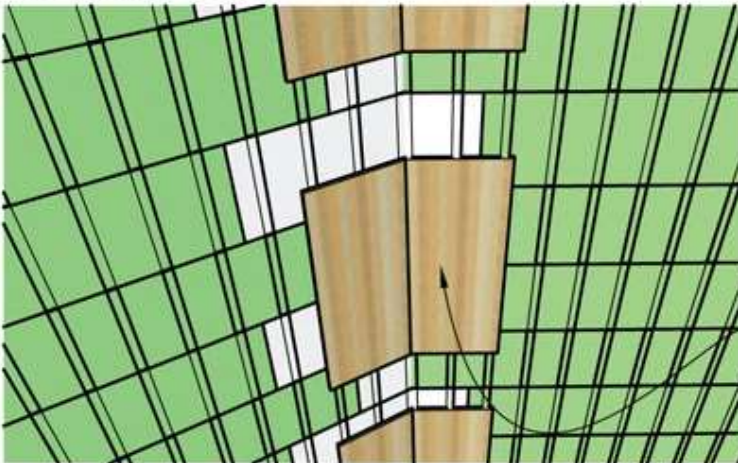
Making an Optimizer corner



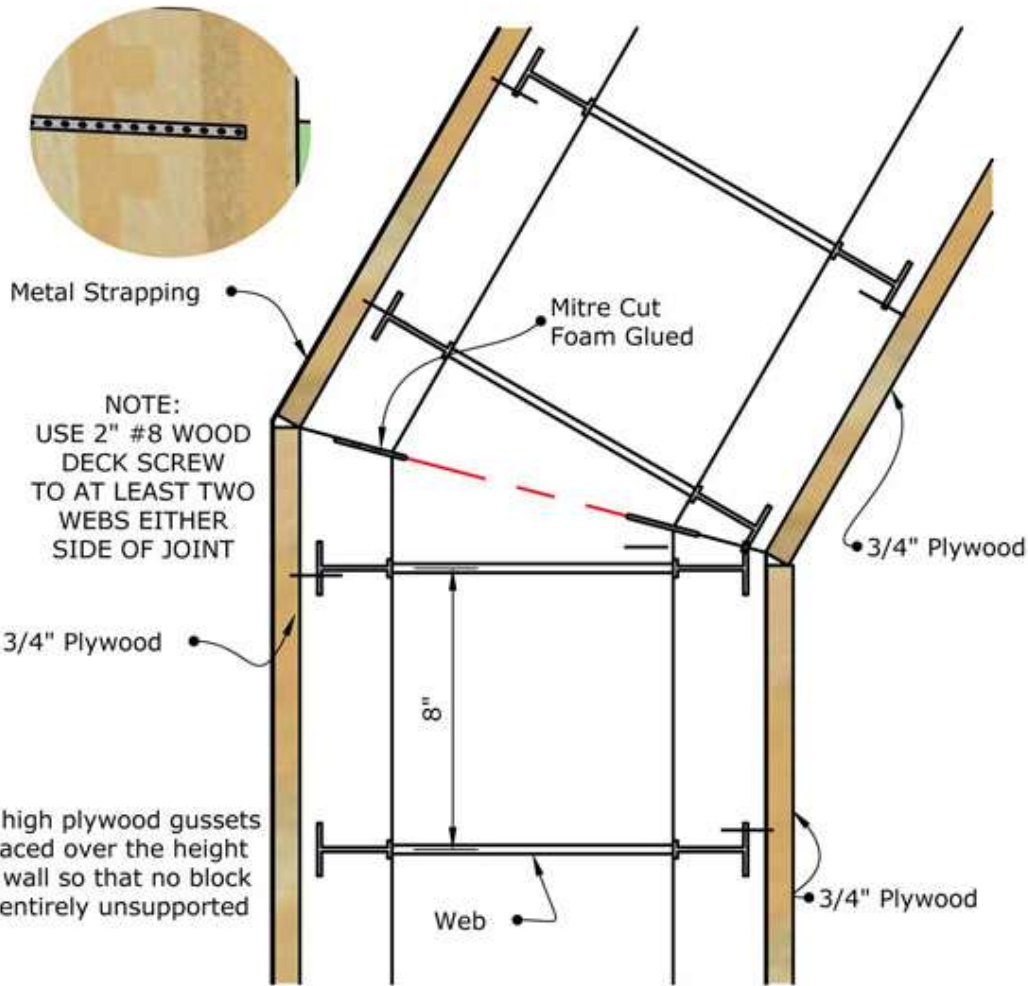
Angled wall bracing



Outside View



Inside View

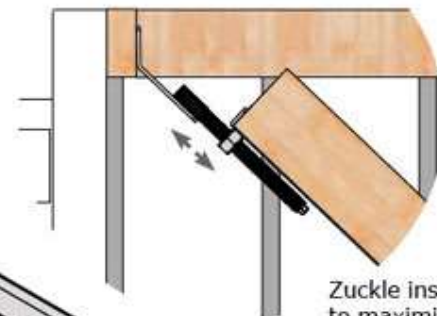


Plan View

Bracing walls under 4'6"



Note: Secure top TWO courses with foam or clips



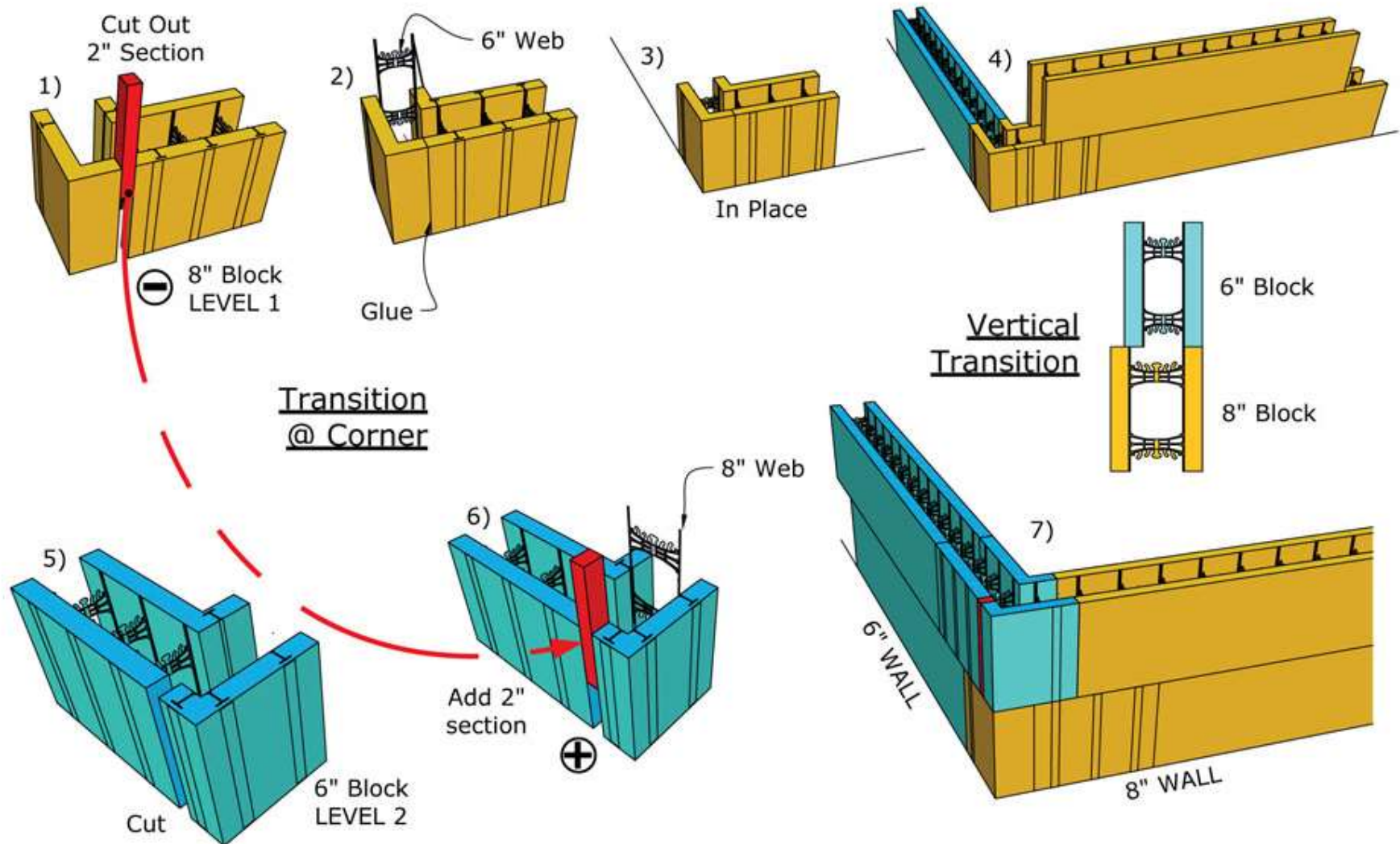
Zuckle installed to maximize adjustment



Glue foam ICF blocks to footing

ZUCKLE®
Wall Aligner

Transitions between 6" & 8" blocks



Nudura block types & dimensions

