

ARCH 2331

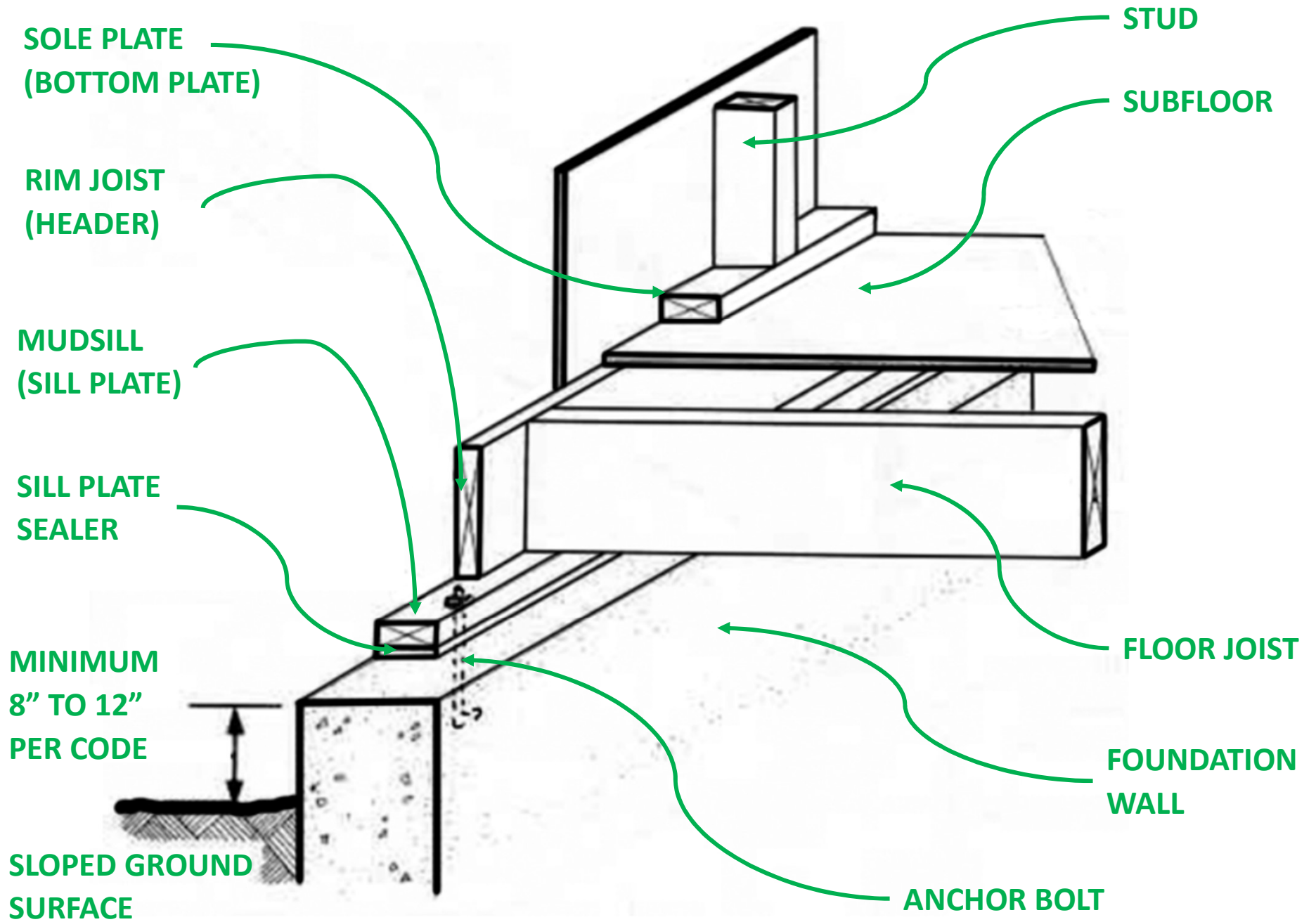
BUILDING TECHNOLOGY II

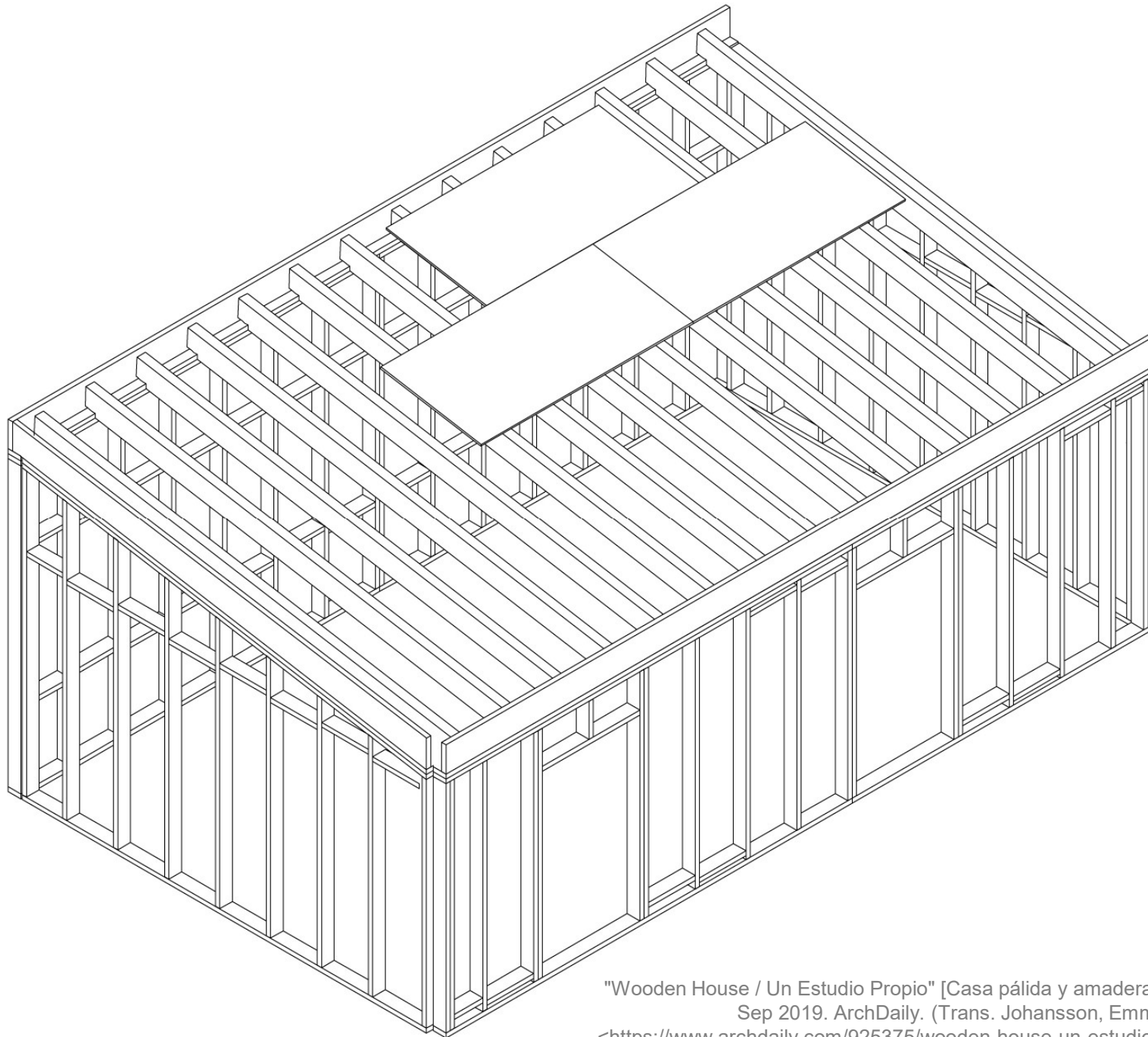


RH House



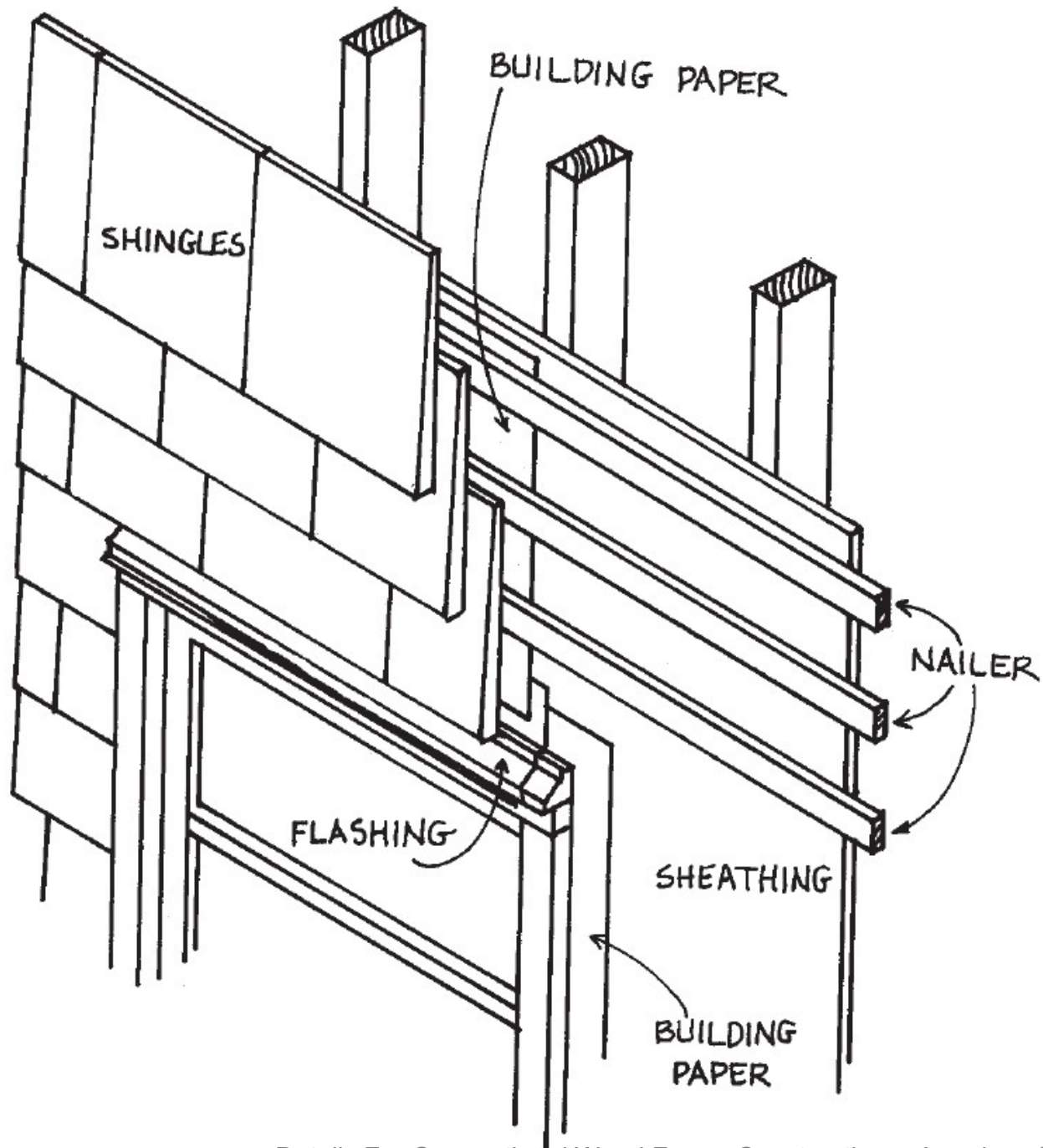
"RH House / Julio Zegers Arquitectos" [Casa R:H / Julio Zegers Arquitectos] 15 Oct 2019. ArchDaily. Accessed 16 Oct 2019.
<<https://www.archdaily.com/926252/rh-house-julio-zegers-arquitectos/>> ISSN 0719-8884



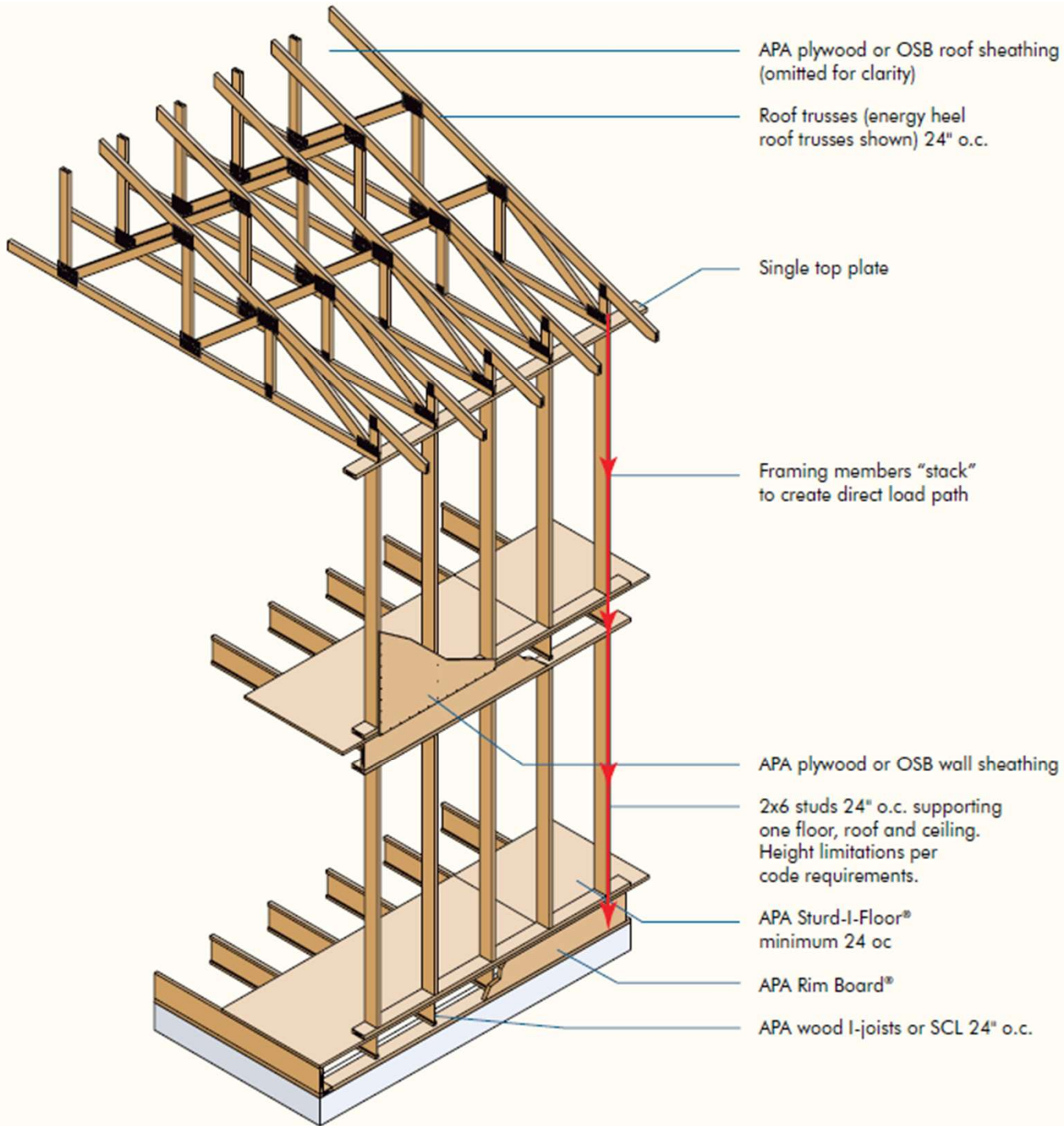


"Wooden House / Un Estudio Propio" [Casa palida y amaderada / Un Estudio Propio] 25
Sep 2019. ArchDaily. (Trans. Johansson, Emma) Accessed 16 Oct 2019.
<<https://www.archdaily.com/925375/wooden-house-un-estudio-propio/>> ISSN 0719-8884





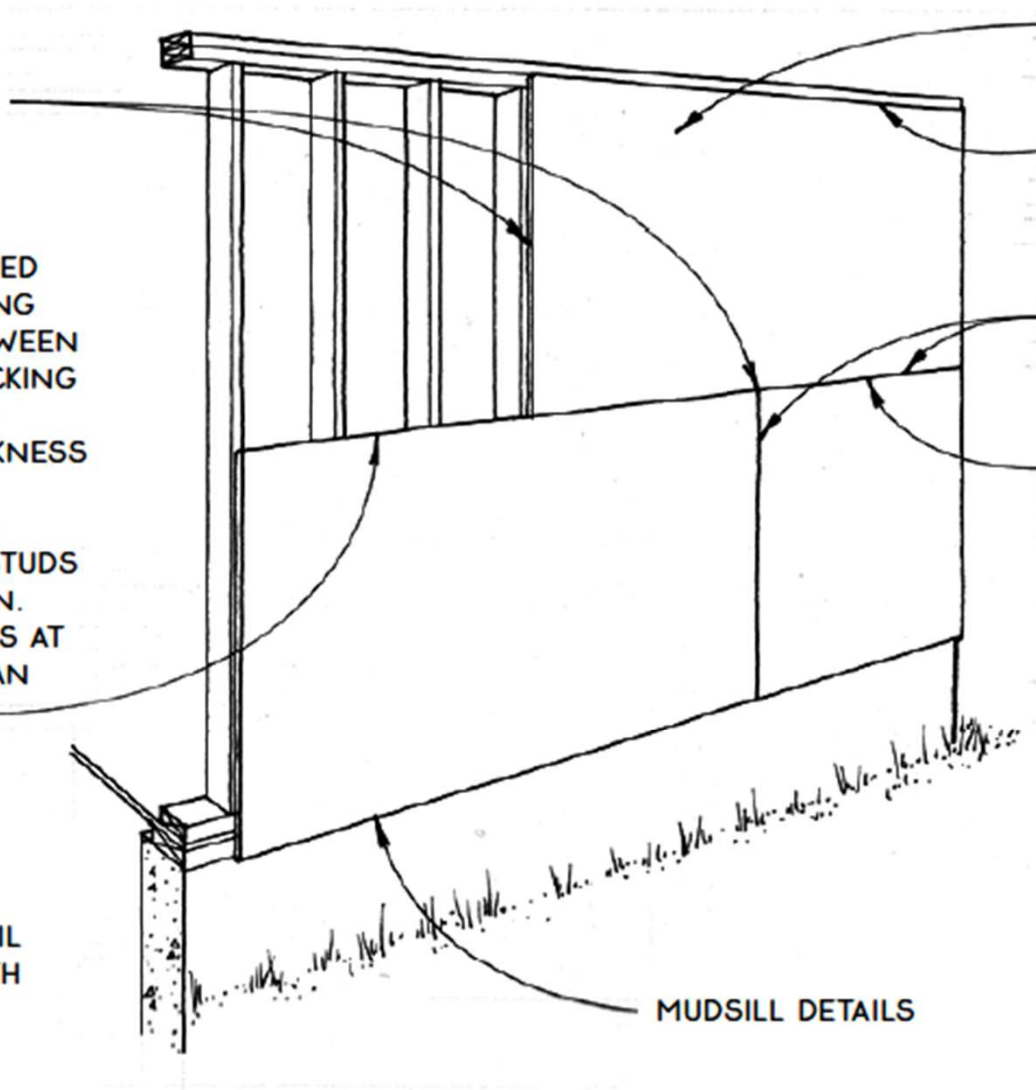
Details For Conventional Wood Frame Construction -- American forestry and paper Association



STAGGER VERTICAL JOINTS BETWEEN STRUCTURAL PANELS.

WHEN NOT ENGINEERED AS BRACING, SHEATHING PANELS MAY PAN BETWEEN STUDS WITHOUT BLOCKING DEPENDING ON STUD SPACING, PANEL THICKNESS & SIDING MATERIAL. $\frac{3}{8}$ -IN. SHEATHING IS RECOMMENDED FOR STUDS AT 16 IN. O.C. & $\frac{1}{2}$ -IN. SHEATHING FOR STUDS AT 24 IN. O.C. VERIFY SPAN RATING ON PANELS.

NOTE
HORIZONTAL PANELS SHOWN IN THIS DETAIL MAY BE REPLACED WITH VERTICAL PANELS.



PANEL NAILING SCHEDULE

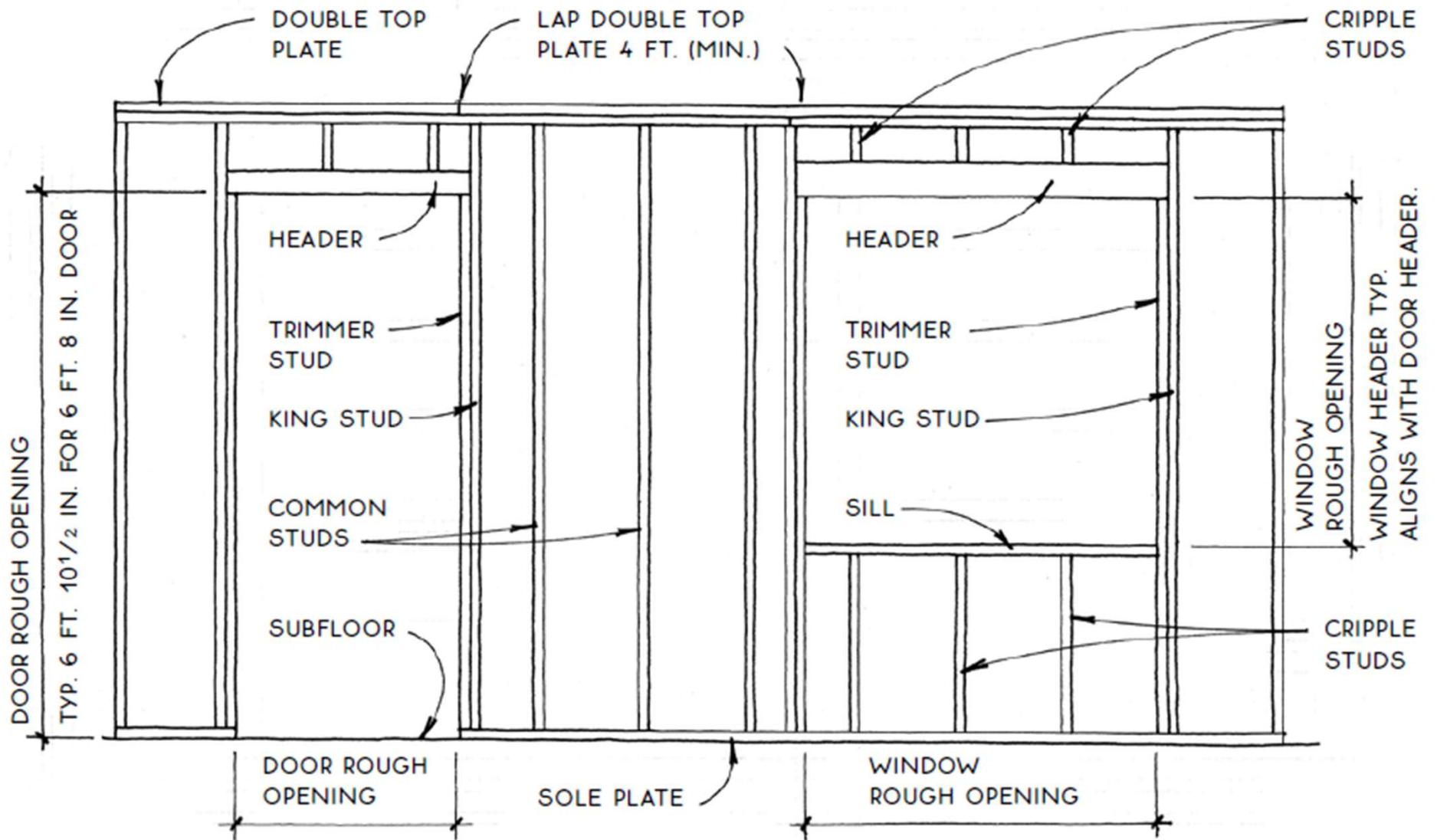
UPPER EDGE OF PANEL ALIGNS WITH LOWER TOP PLATE.

LEAVE $\frac{1}{8}$ -IN. SPACE AT ALL PANEL EDGES.

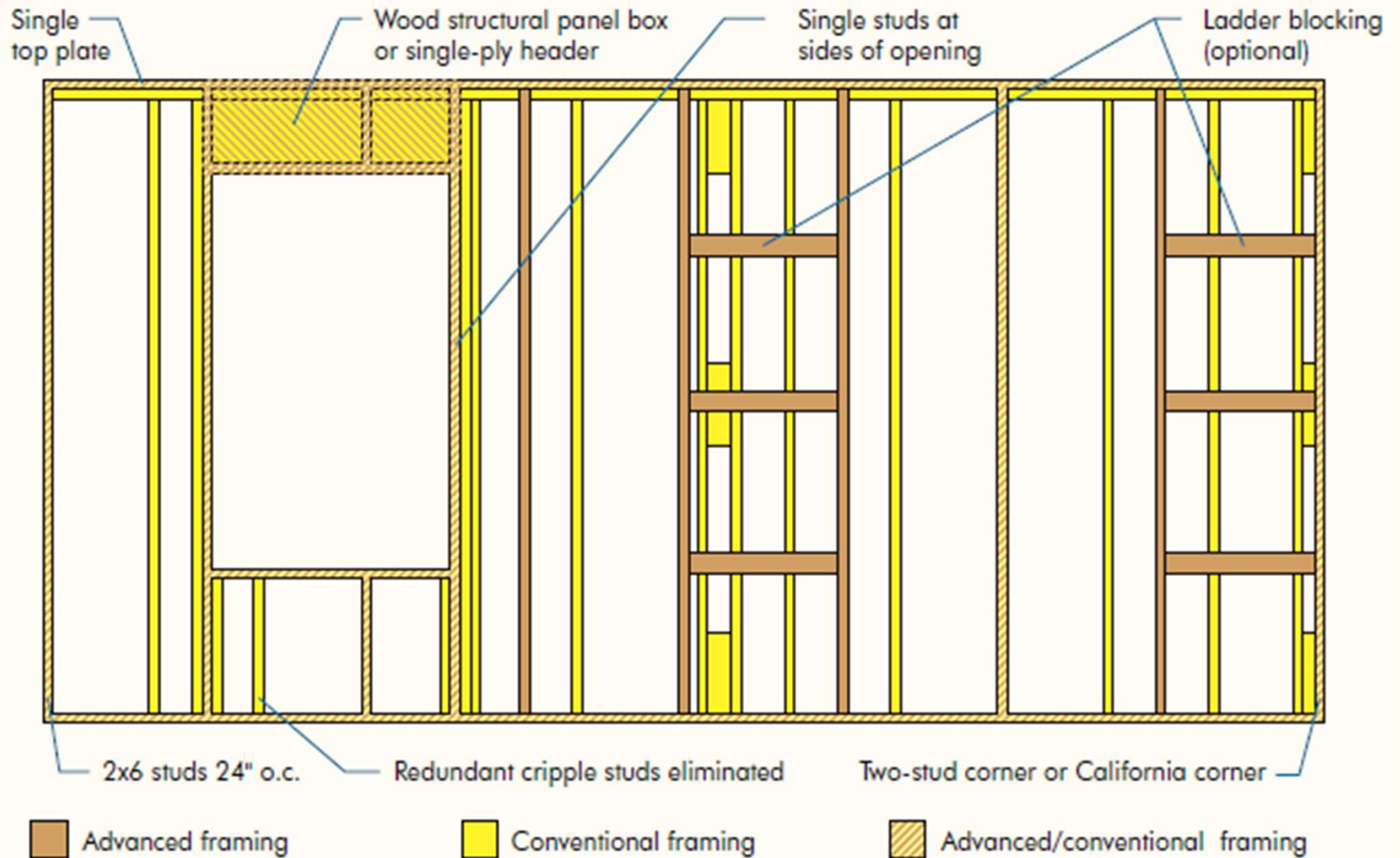
BLOCKING BEHIND PANEL JOINTS IS REQUIRED WHEN HORIZONTAL PANELS ARE ENGINEERED FOR LATERAL BRACING.

MUDSILL DETAILS

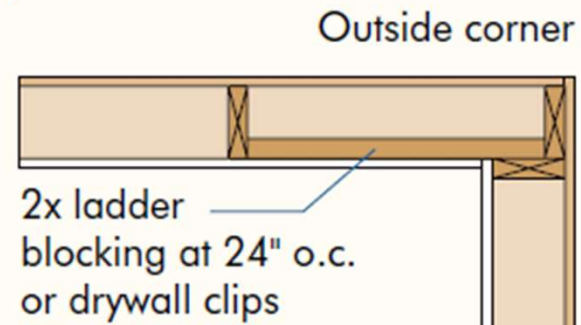
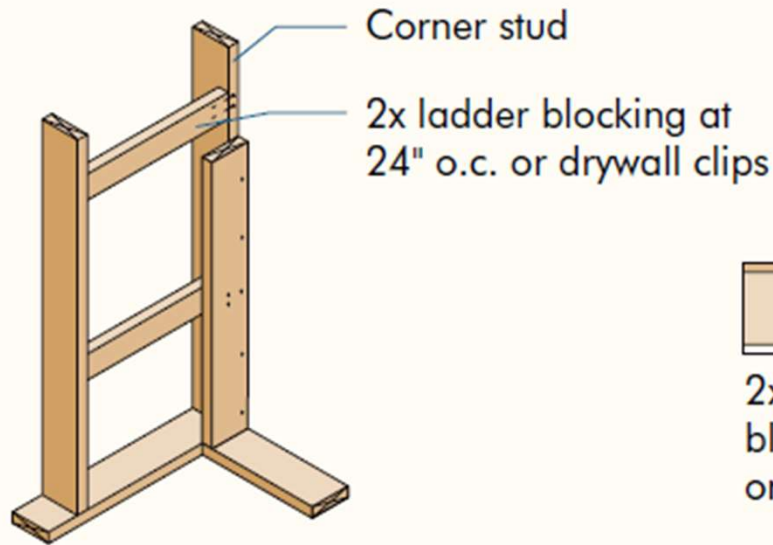
NOTE:
THIS DETAIL IS APPROPRIATE ONLY IF STUDS ARE PRECUT AT $90\frac{3}{4}$ IN. OR LESS & THE SUBFLOOR SITS DIRECTLY ON THE MUDSILL, SEE 33C & D, OR IF A SLAB FOUNDATION IS USED.



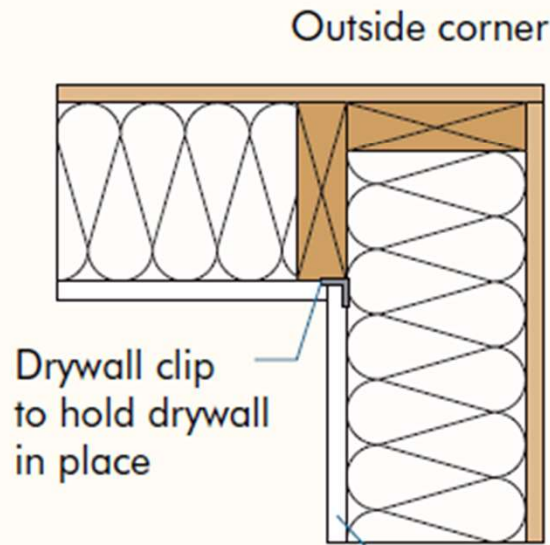
WALL FRAME COMPARISON



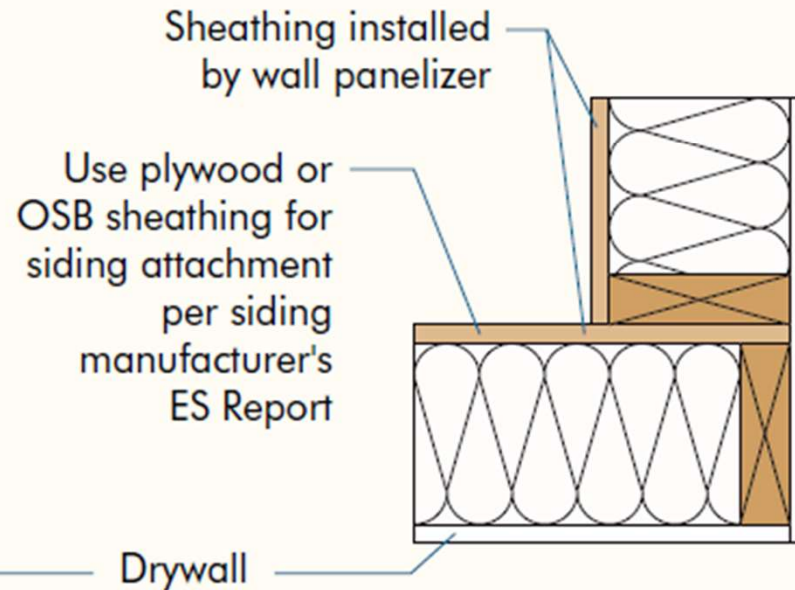
TWO-STUD CORNERS



TWO-STUD CORNER (WITH DRYWALL CLIPS)

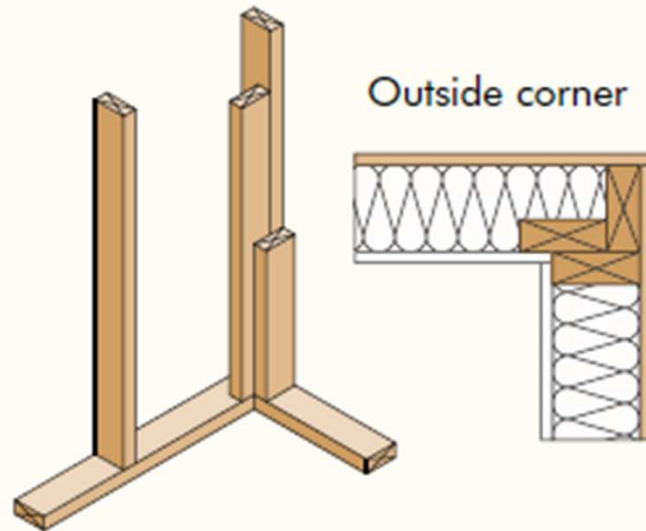


TWO-STUD INSIDE CORNER (FOR WALL PANELIZATION)

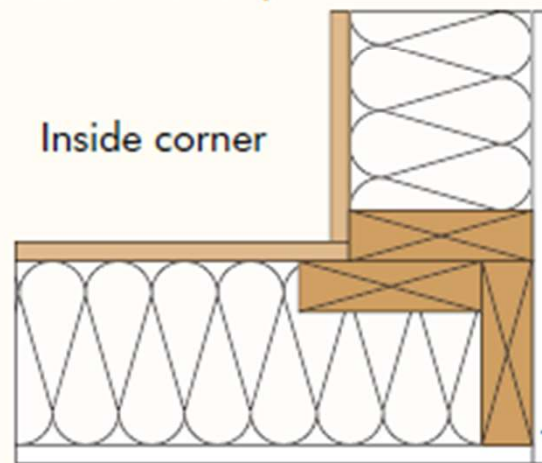


THREE-STUD CORNERS

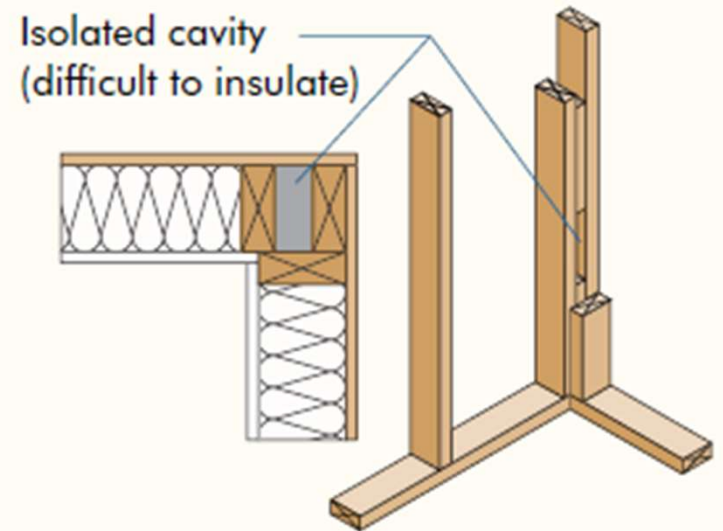
INSULATED THREE-STUD CORNER (CALIFORNIA CORNER)



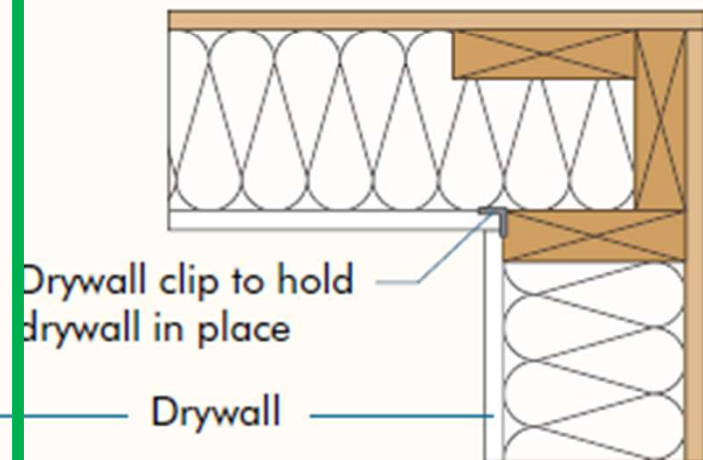
INSULATED THREE-STUD CORNER (INSIDE CORNER)



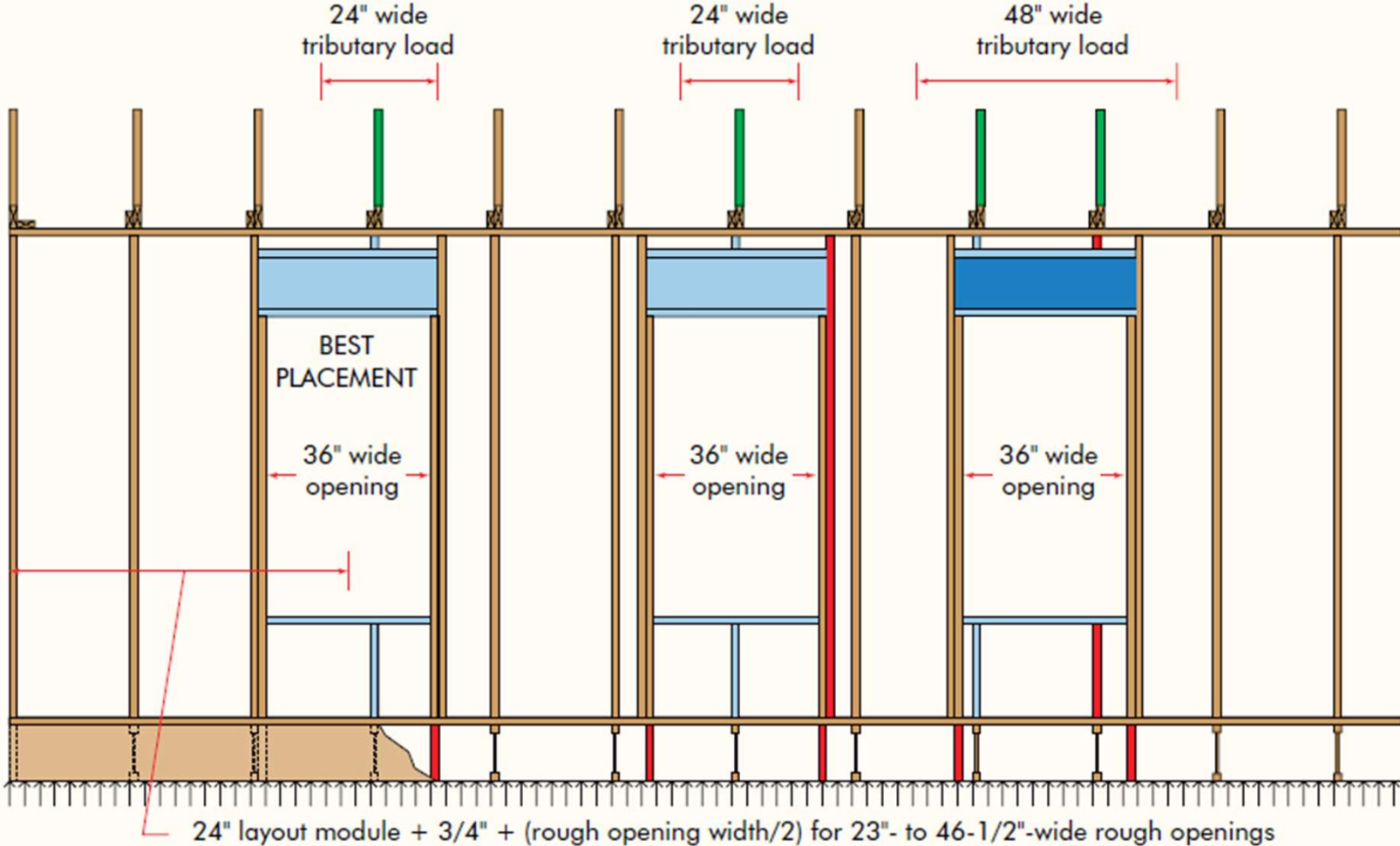
CONVENTIONAL CORNER



ALTERNATE INSULATED THREE-STUD CORNER (WITH DRYWALL CLIPS)



The placement of openings in load-bearing walls and the layout of framing members above openings have significant impact on header sizing for advanced framing.



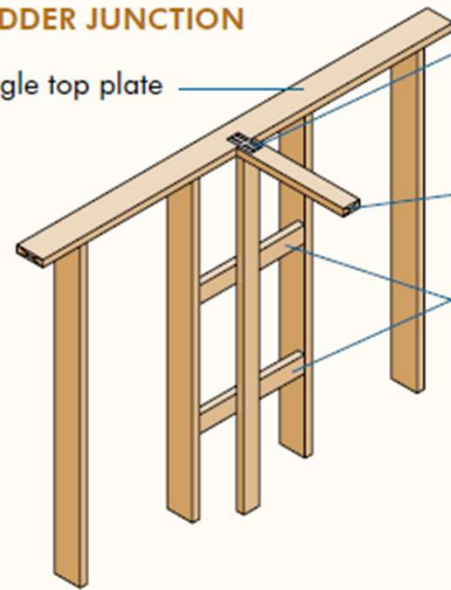
Continuous bearing as provided by load-bearing sill beam or foundation wall.

- Minimum required materials to frame rough opening
- Structure above imposing tributary loads on header
- Potential increased header size — increased load from structure above
- Excess materials due to inefficient opening placement

INTERIOR WALL INTERSECTION OPTIONS

LADDER JUNCTION

Single top plate

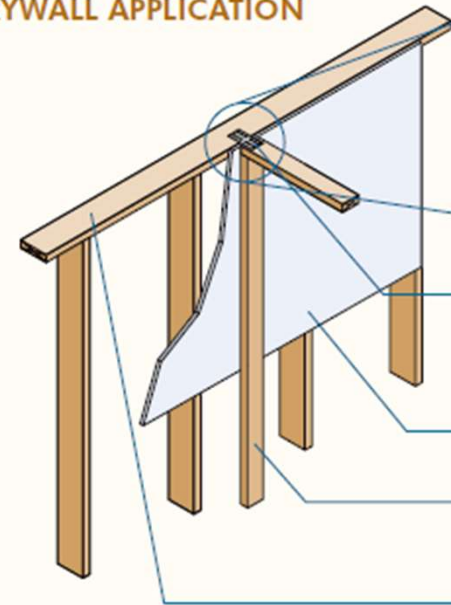


3" x 6" x 0.036" galvanized steel plate
(see: PRESCRIPTIVE AND ALTERNATE
CONNECTION DETAILS, Figure 6)

Interior wall plate tight to
exterior wall plate

2x ladder blocking at 24" o.c.
Install blocking with wide face
vertical for maximum backing to
wall finish materials and for
maximum insulation to exterior walls.

JUNCTION FOR CONTINUOUS DRYWALL APPLICATION



3" x 6" x 0.036" galvanized steel plate
(see: PRESCRIPTIVE AND ALTERNATE
CONNECTION DETAILS, Figure 6)

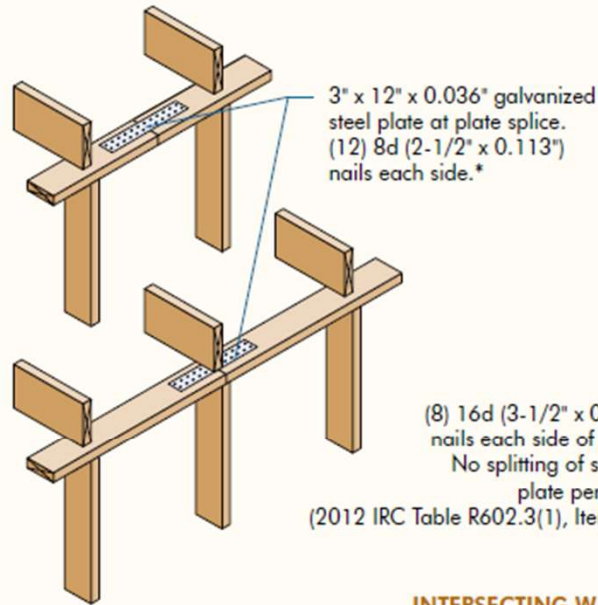
Drywall

Interior stud set in 1/2" from
exterior wall studs

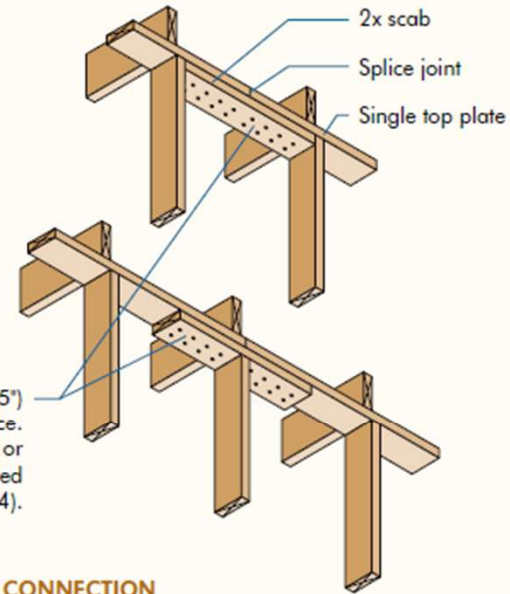
Single top plate

Detail courtesy of NAHB Research Center.

PRESCRIPTIVE CONNECTION

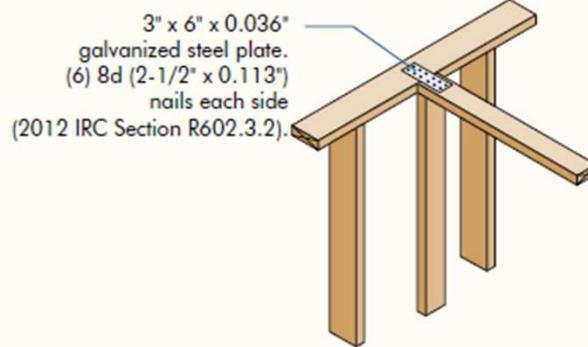


ALTERNATE CONNECTION: SPLICE AT STUD

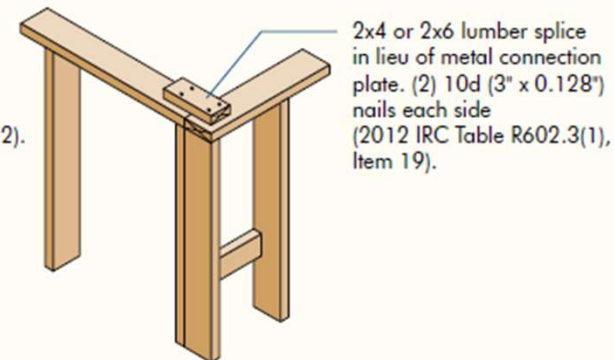
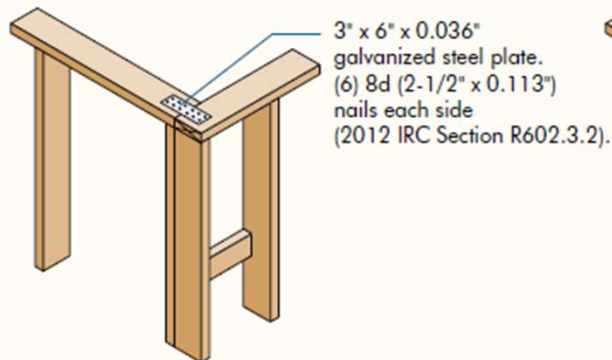
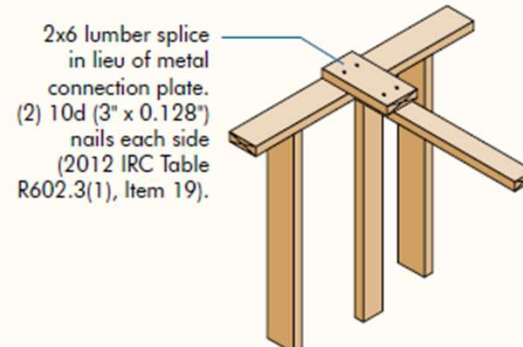


INTERSECTING WALL CONNECTION

PRESCRIPTIVE CONNECTION

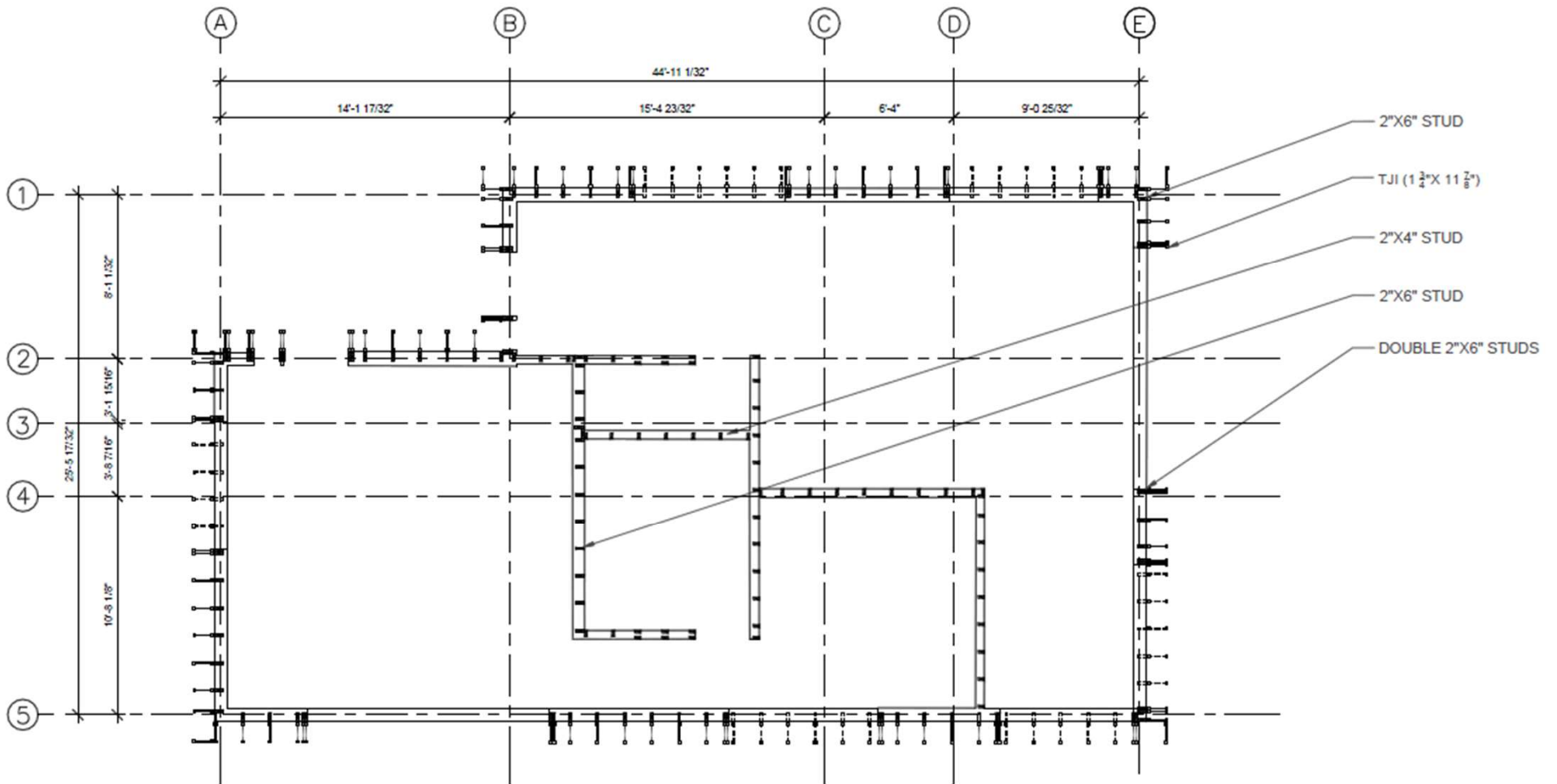


ALTERNATE CONNECTION

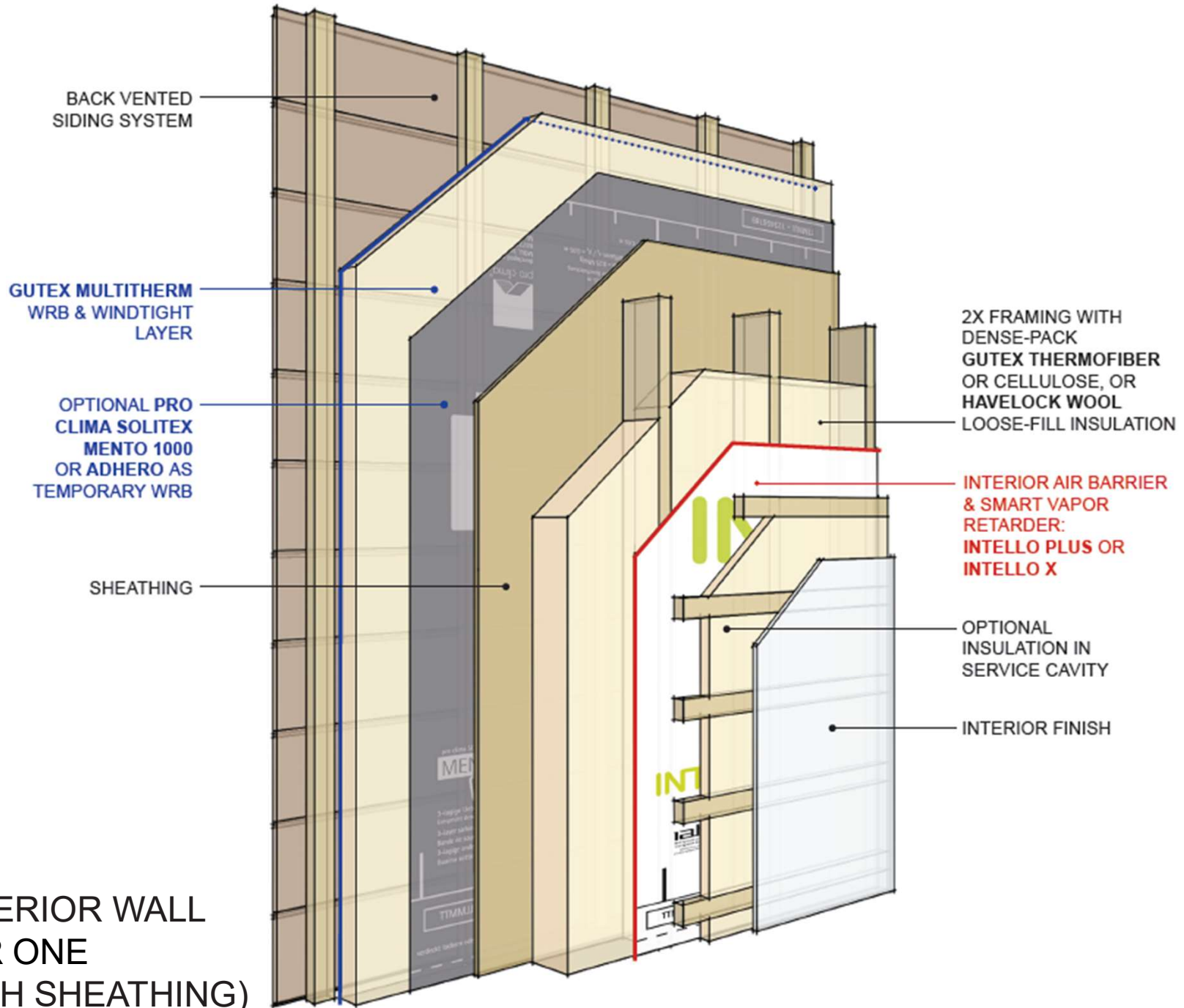




Stud layouts

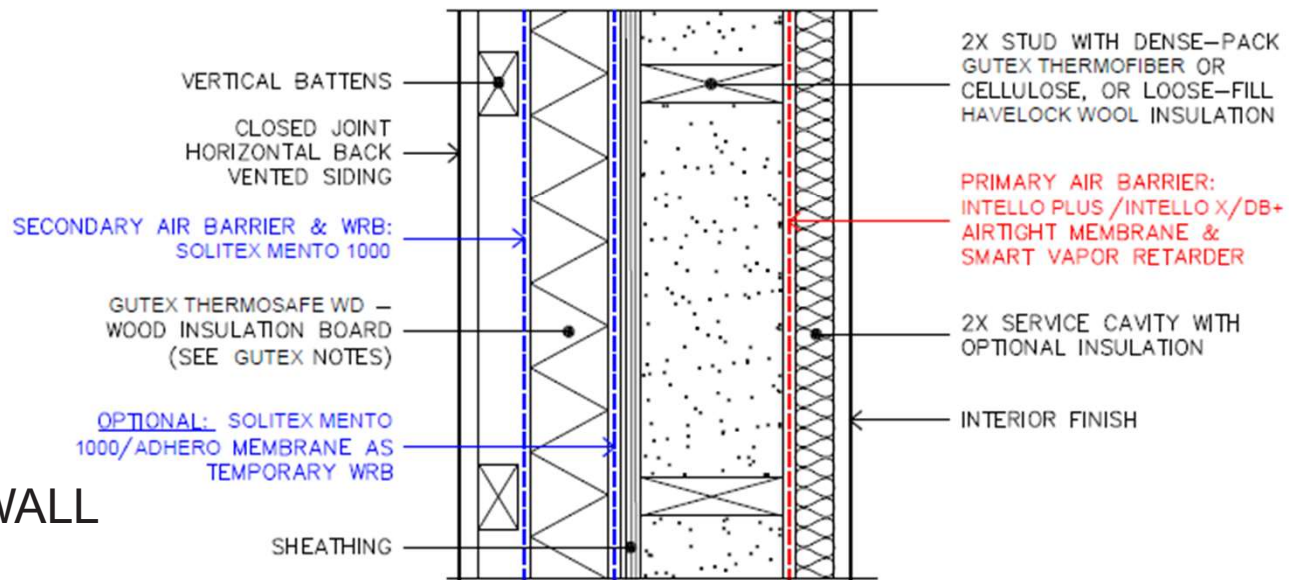
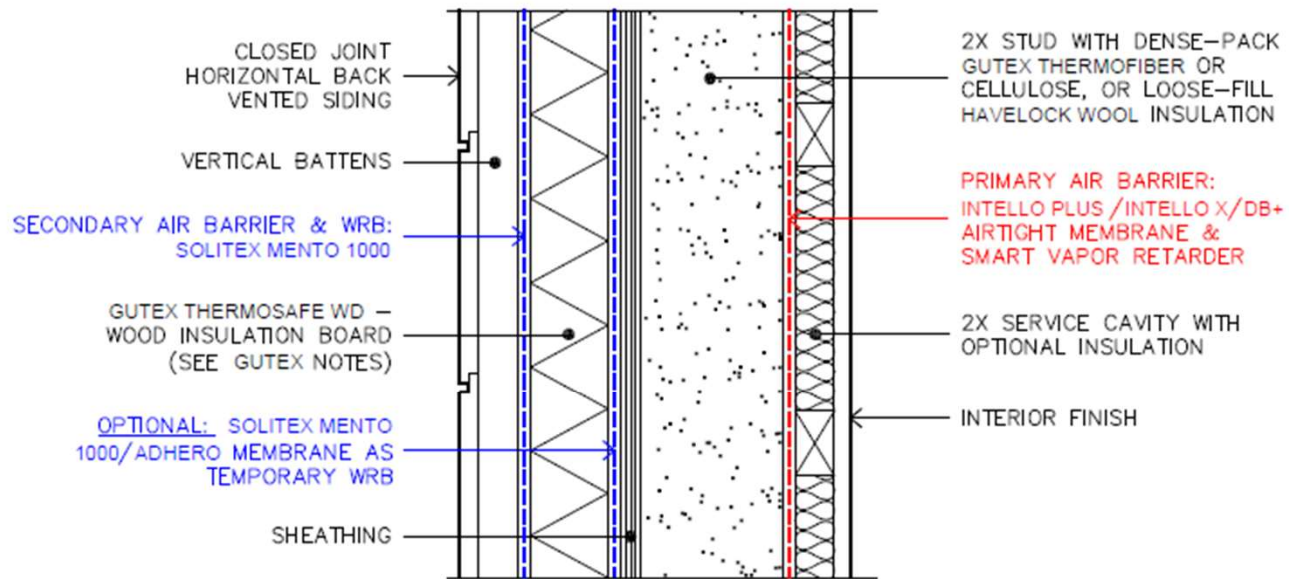


EXTERIOR WALL
TIER ONE
(WITH SHEATHING)



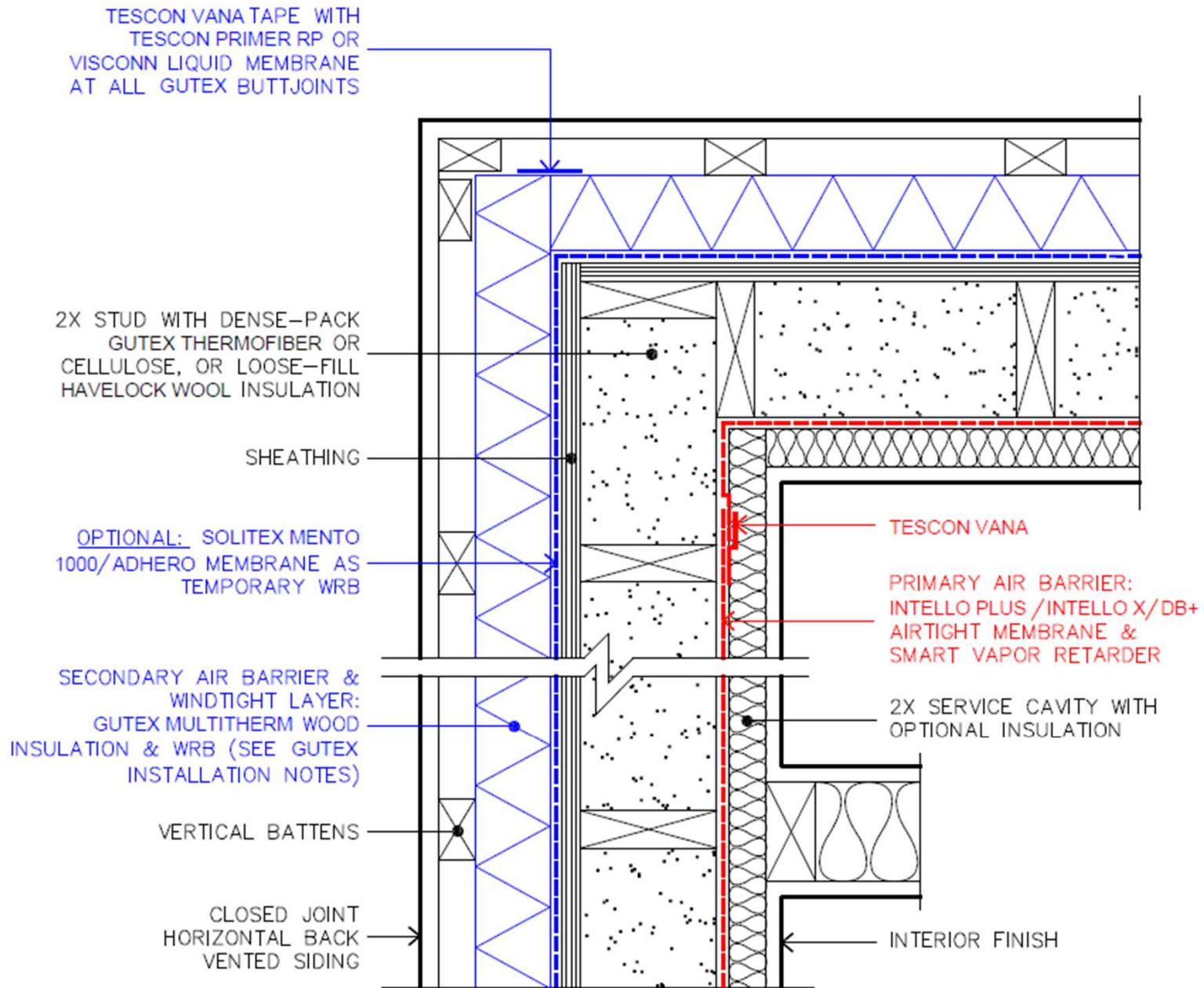


SECTION



EXTERIOR WALL
TIER ONE
(WITH SHEATHING)

PLAN

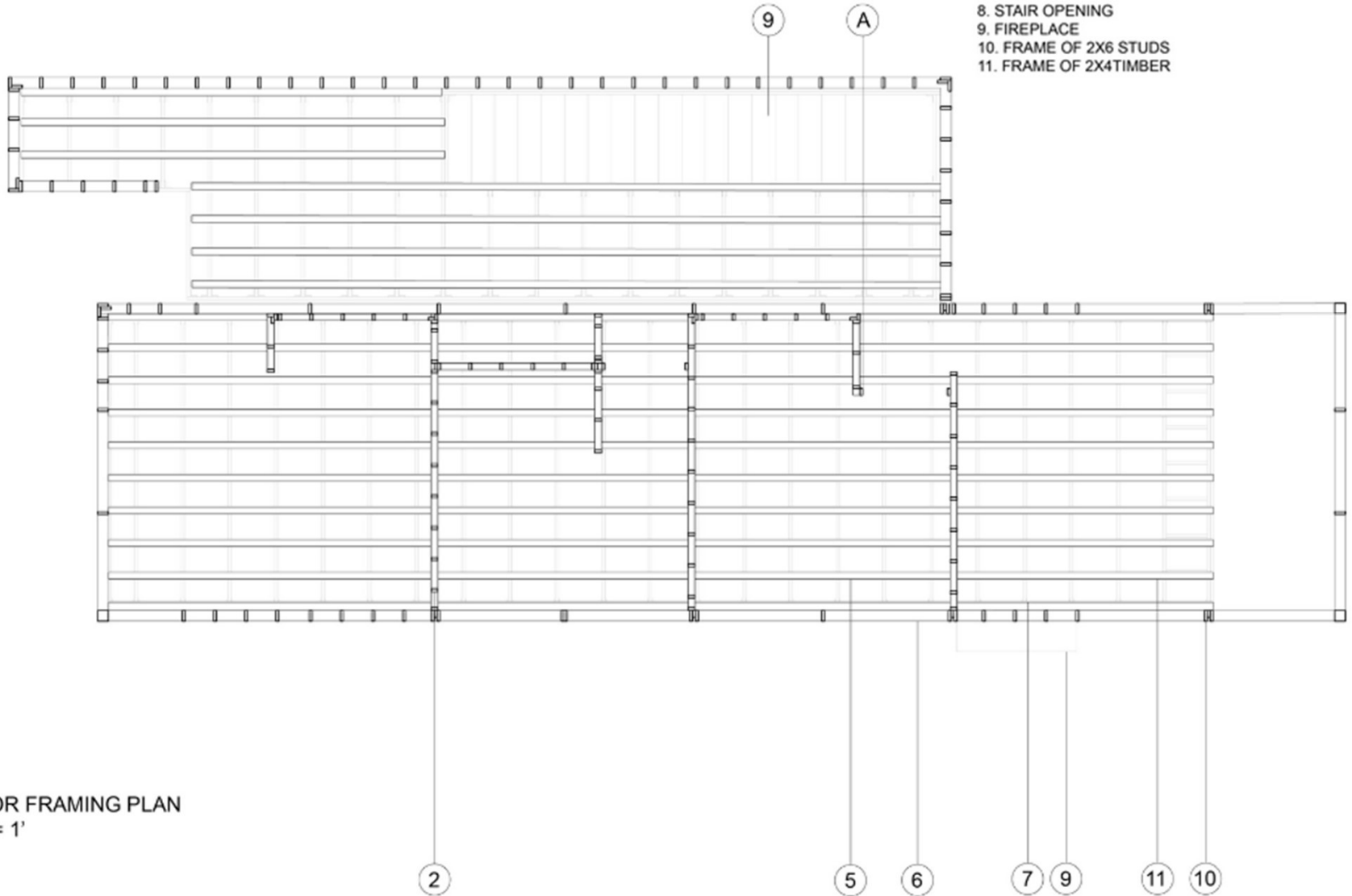


PLAN

Stud layouts

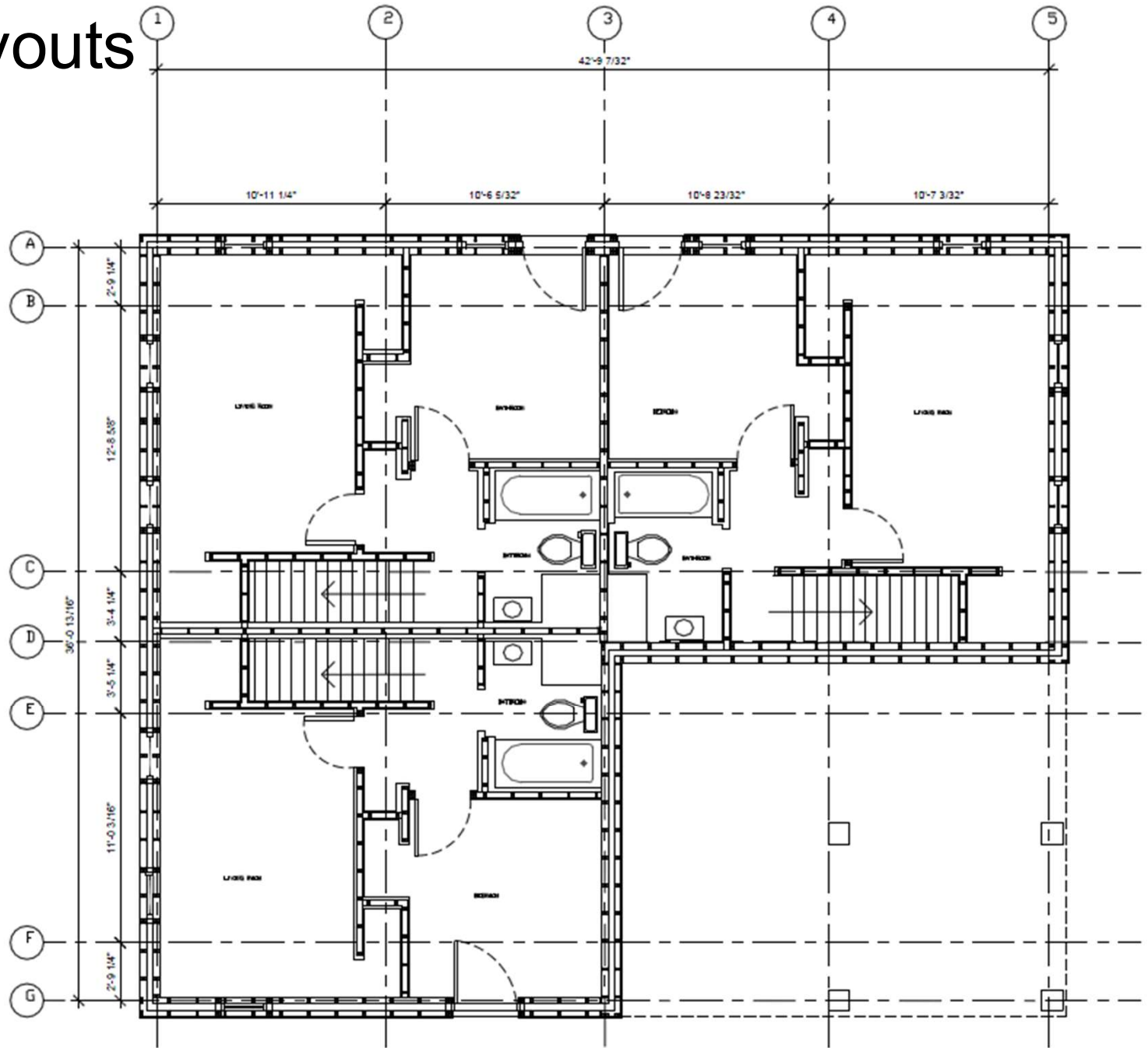
MATERIAL KEY:

1. FRAME OF 9 1/4" TIMBER I-JOISTS, 9 1/4" LVL
2. INTERIOR 2X4 STUDS
3. 2X6 TOP PLATE TIMBER
4. 2X4 FRAME
5. EXPOSED 2X8 (NOMINAL) TIMBER RAFTERS
6. 2X6 BOTTOM PLATE TIMBER
7. JOIST HANGERS
8. STAIR OPENING
9. FIREPLACE
10. FRAME OF 2X6 STUDS
11. FRAME OF 2X4TIMBER



SECOND FLOOR FRAMING PLAN
SCALE: 3/16" = 1'

Stud layouts



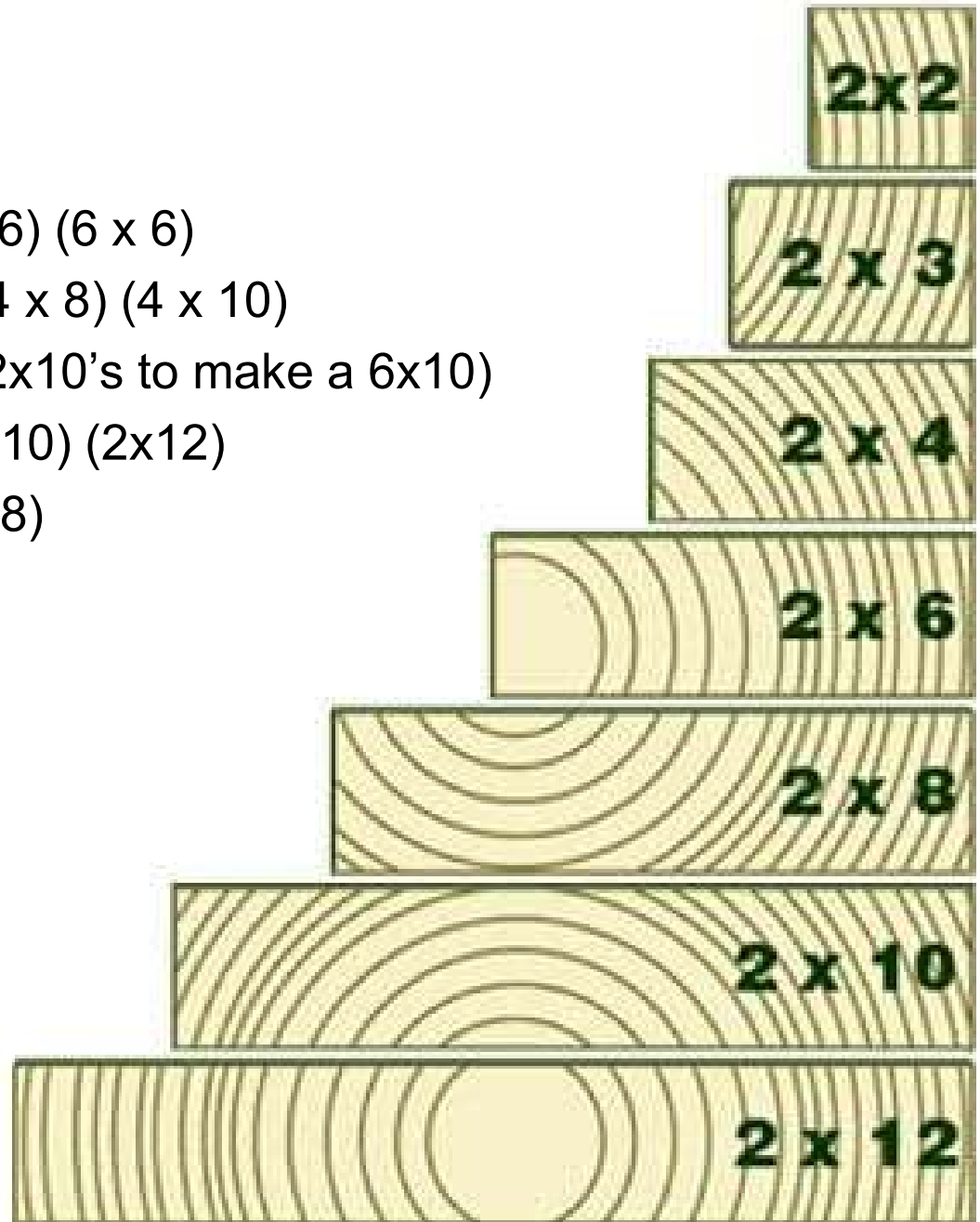
Typical stud wall assembly



FRAMING

Lumber sizes and uses

- Columns (4 x 4) (4 x 6) (6 x 6)
- Beams and girders (4 x 8) (4 x 10)
- Built-up beams (3 – 2x10's to make a 6x10)
- Joists (2x6) (2x8) (2x10) (2x12)
- Studs (2x4) (2x6) (2x8)



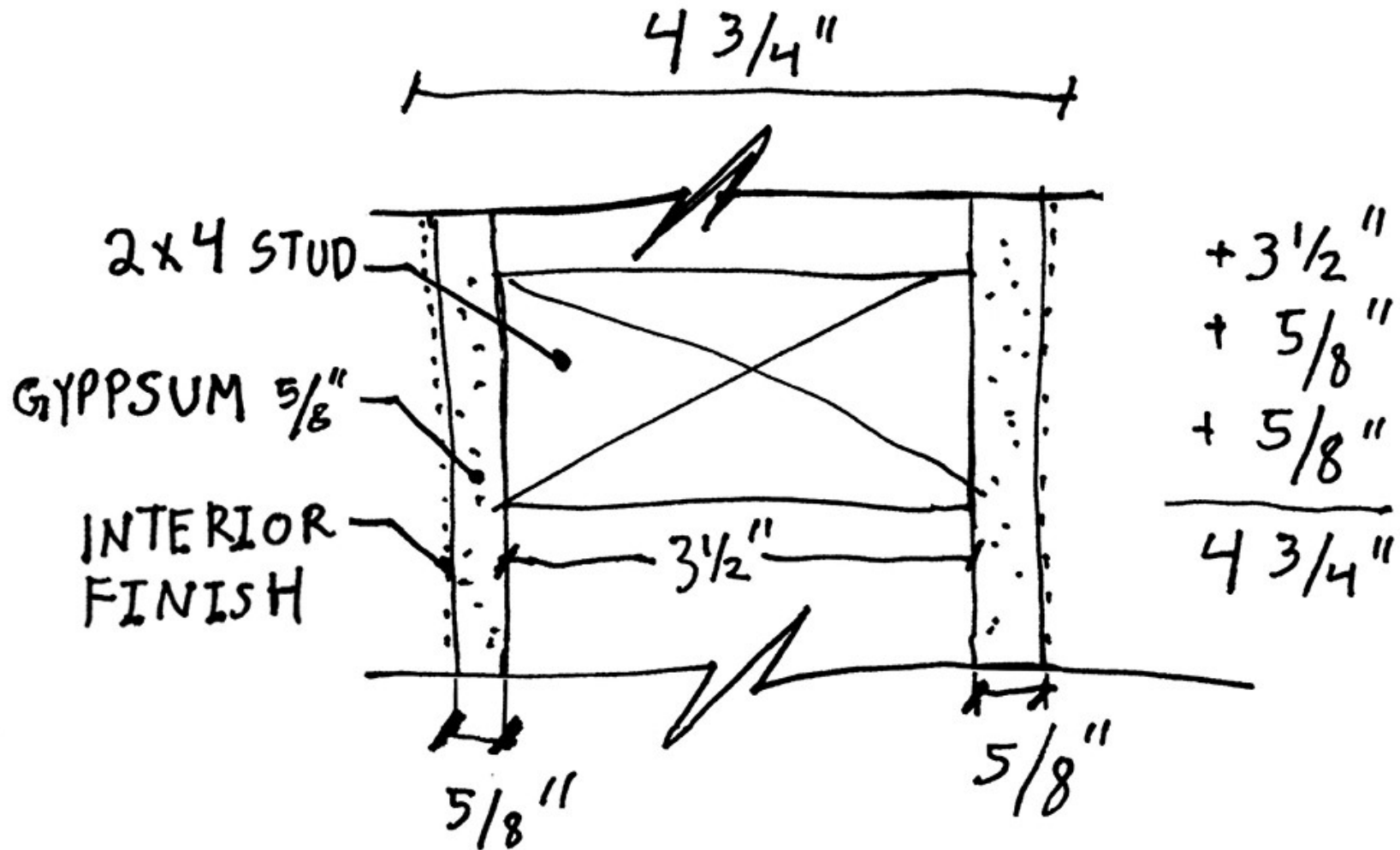
NOMINAL VS ACTUAL

Nominal dimensions: 2x4 2x6 2x8.....

Actual dimensions: After dressing : 1 ½ x 3 ½

Nominal Dimension	Actual Dimension
1"	¾" (19 mm)
2"	1½" (38 mm)
3"	2½" (64 mm)
4"	3½" (89 mm)
5"	4½" (114 mm)
6"	5½" (140 mm)
8"	7¼" (184 mm)
10"	9¼" (235 mm)
12"	11¼" (286 mm)
over 12"	¾" less (19 mm less)

Typical stud wall assembly

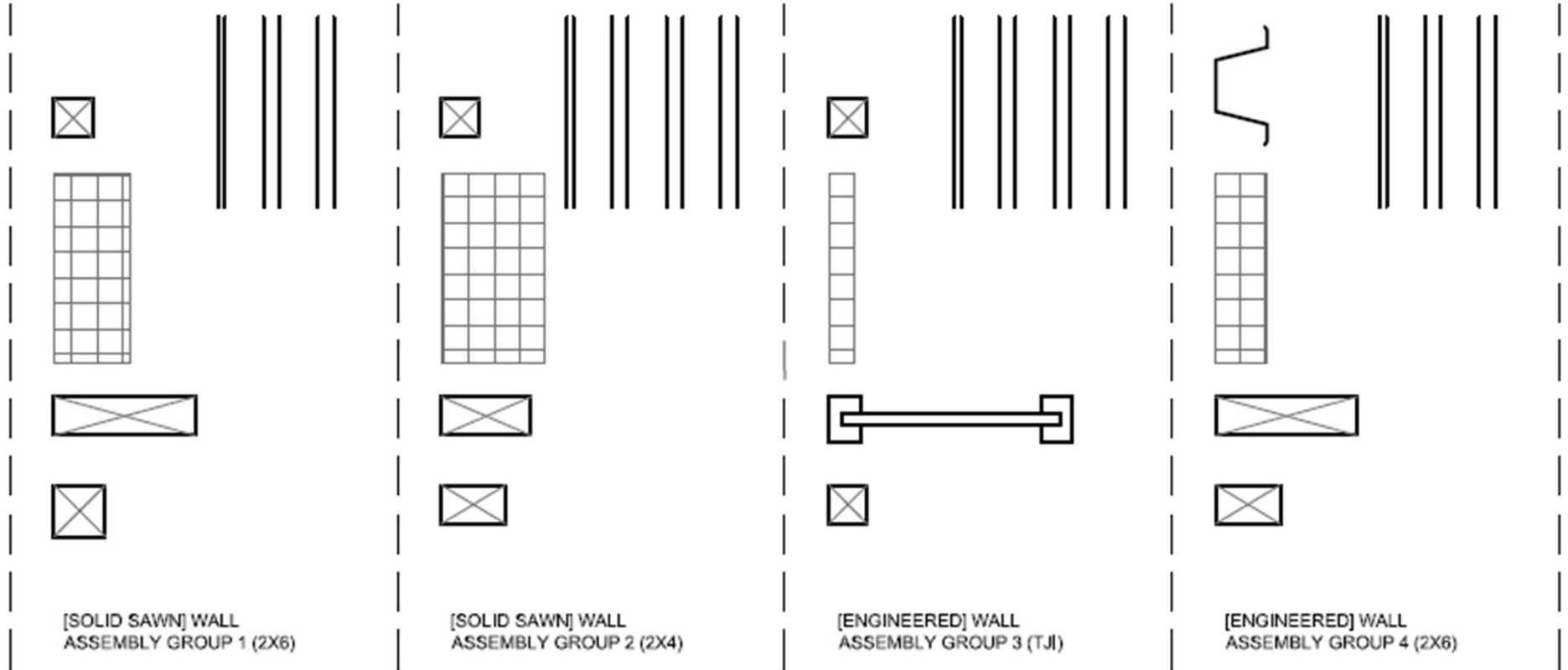


Typical stud wall assembly



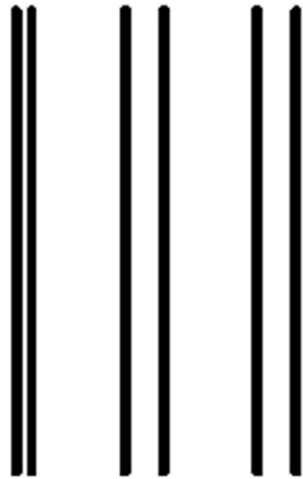
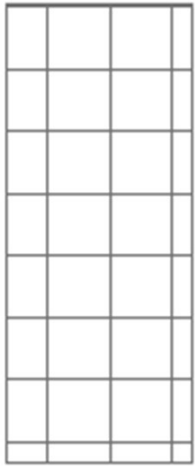
https://buyersask.com/wp-content/uploads/AdobeStock_79791864-1-700x464.jpeg

wall assembly components, by groups



WALL ASSEMBLY

GROUP 1 [SOLID SAWN] (2X6)

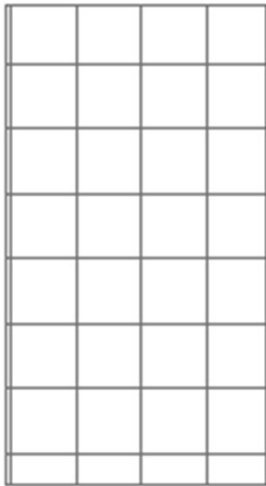
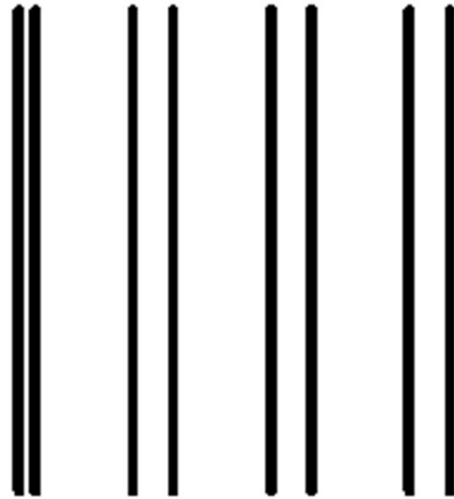


EXTERIOR CLADDING	1/8" OR 1/4"
VERTICAL BATTEN	2X2 (1 1/2" X 1 1/2")
RIGID INSULATION	3"
EXTERIOR SHEATHING OSB	5/8"
STUD (STRUCTURAL)	2X6 (1 1/2" X 5 1/2")
FURRING STRIP	2" X 2"
INTERIOR FINISH GYPSUM	5/8"

WALL ASSEMBLY

GROUP 2

[SOLID SAWN] (2X4)

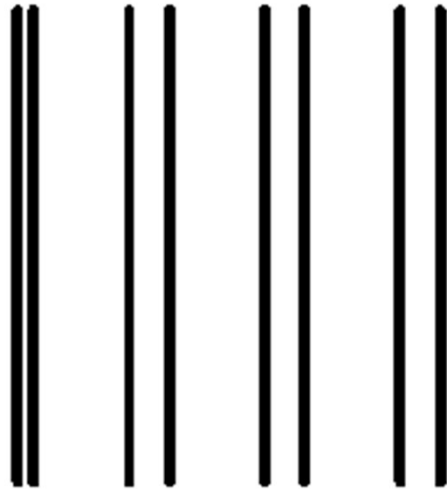
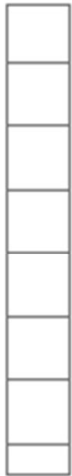


EXTERIOR CLADDING	1/8" OR 1/4"
VERTICAL BATTEN	2X2 (1 1/2" X 1 1/2")
RIGID INSULATION	4"
EXTERIOR SHEATHING PL	5/8"
STUD (STRUCTURAL)	2X4 (1 1/2" X 3 1/2")
INTERIOR SHEETING PL	5/8"
FURRING STRIP	2X3 (1 1/2" X 2 1/2")
INTERIOR FINISH GYPSUM	5/8"

WALL ASSEMBLY

GROUP 3

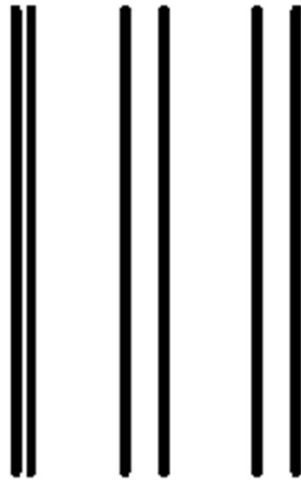
[ENGINEERED] (TJI)



EXTERIOR CLADDING	1/8" OR 1/4"
VERTICAL BATTEN	2X2 (1 1/2" X 1 1/2")
RIGID INSULATION	1"
EXTERIOR SHEATHING PL	5/8"
TJI (STRUCTURAL)	1 3/4" X 9 1/2"
INTERIOR GYPSUM	5/8"
FURRING STRIP	2X3 (1 1/2" X 2 1/2")
INTERIOR FINISH GYPSUM	5/8"

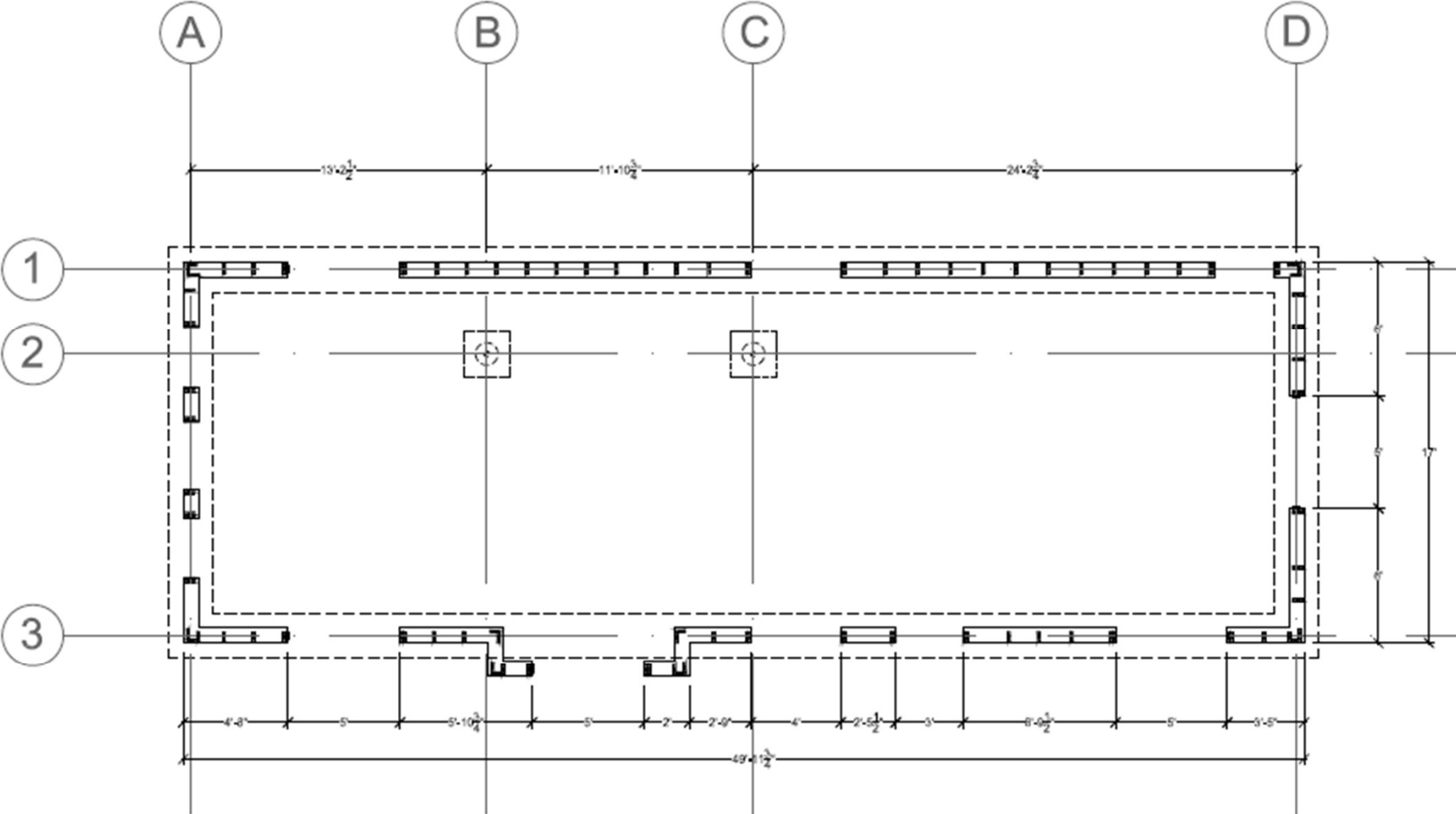
WALL ASSEMBLY

GROUP 4 [ENGINEERED] (2X6)

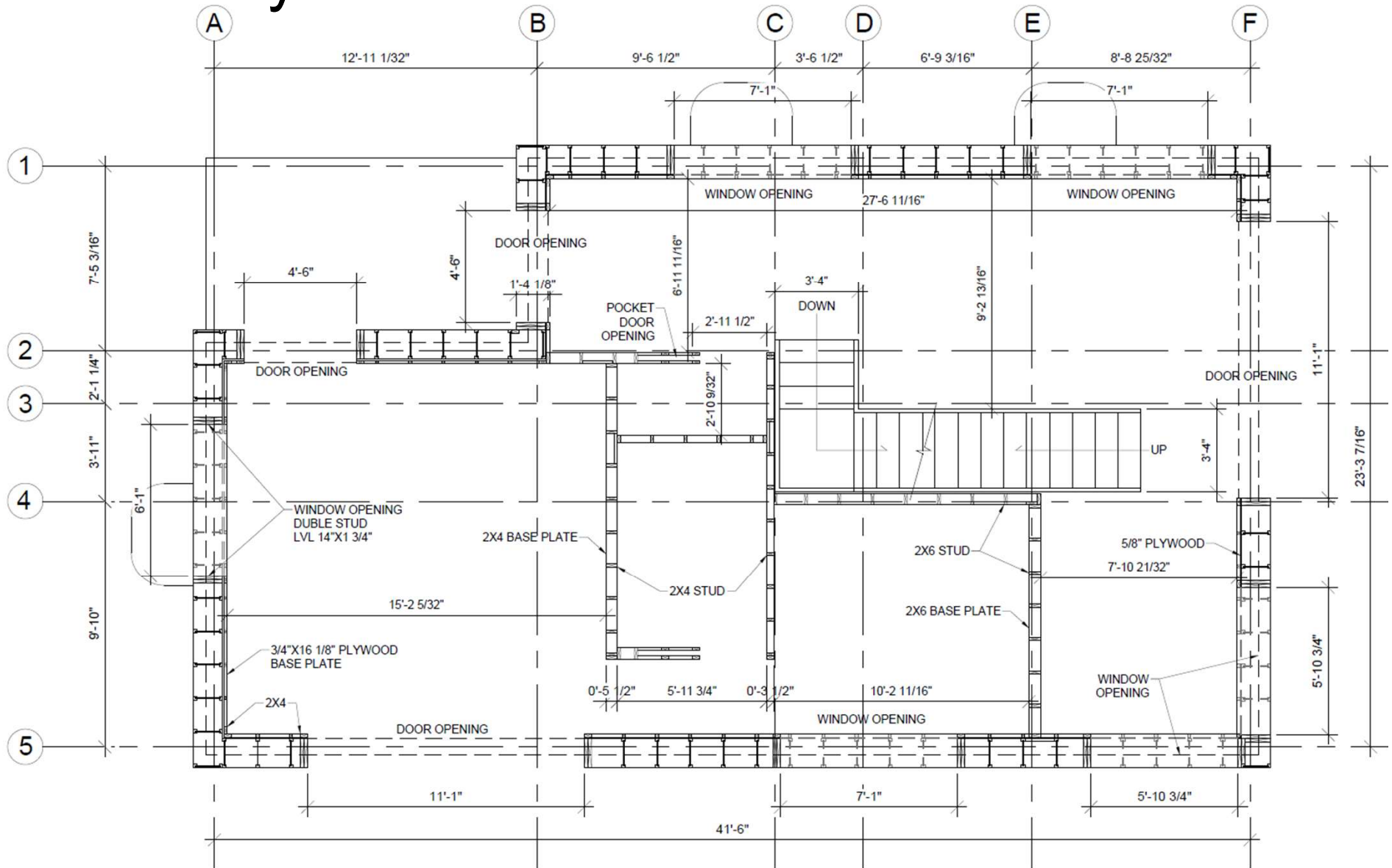


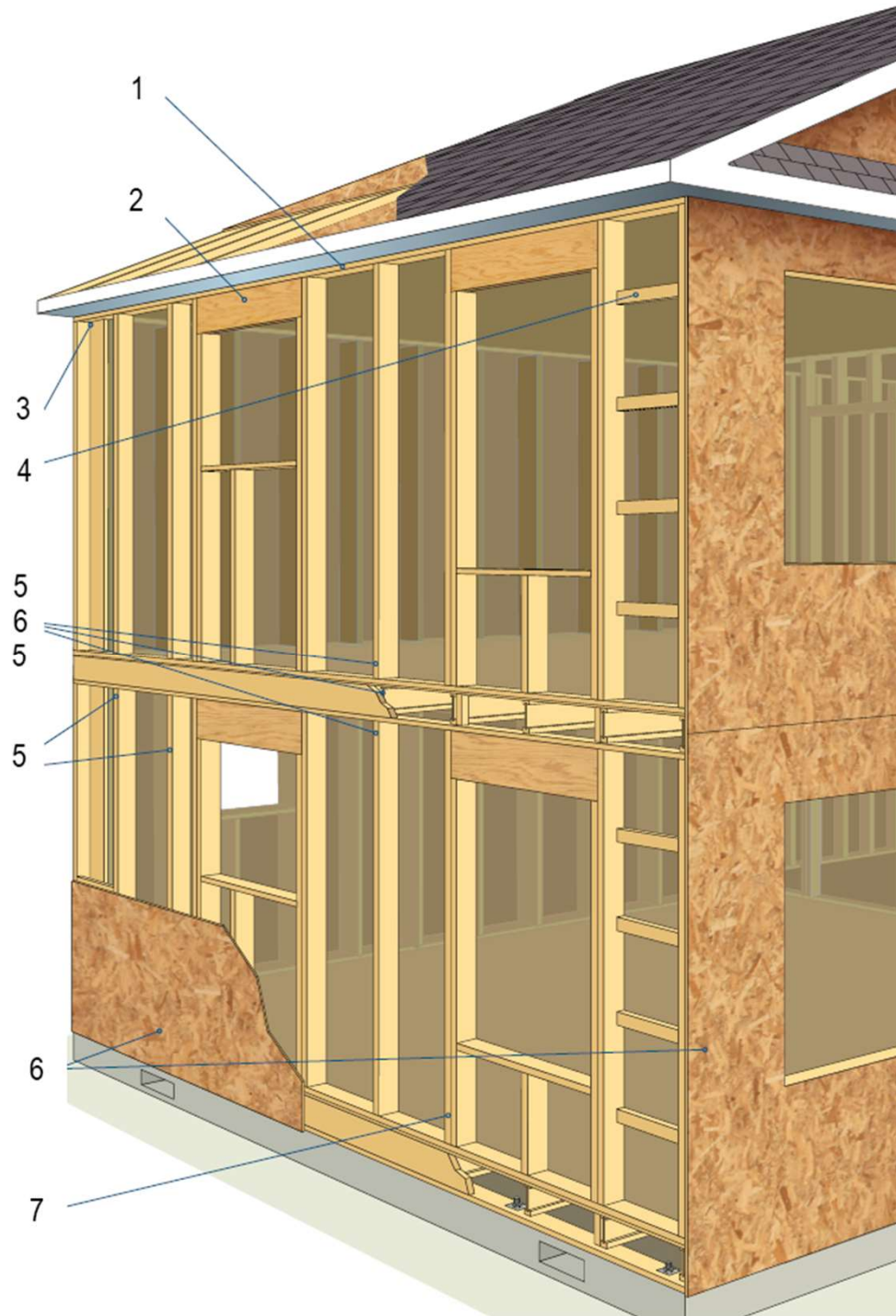
EXTERIOR CLADDING	1/8" OR 1/4"
VERTICAL METAL HAT BATTEN	4" x 2"
RIGID INSULATION	2"
EXTERIOR SHEATHING PL	5/8"
ENGINEERED STUD	2X6 (1 1/2" X 5 1/2")
FURRING STRIP	2X3 (1 1/2" X 2 1/2")
INTERIOR FINISH GYPSUM	5/8"

Stud layouts

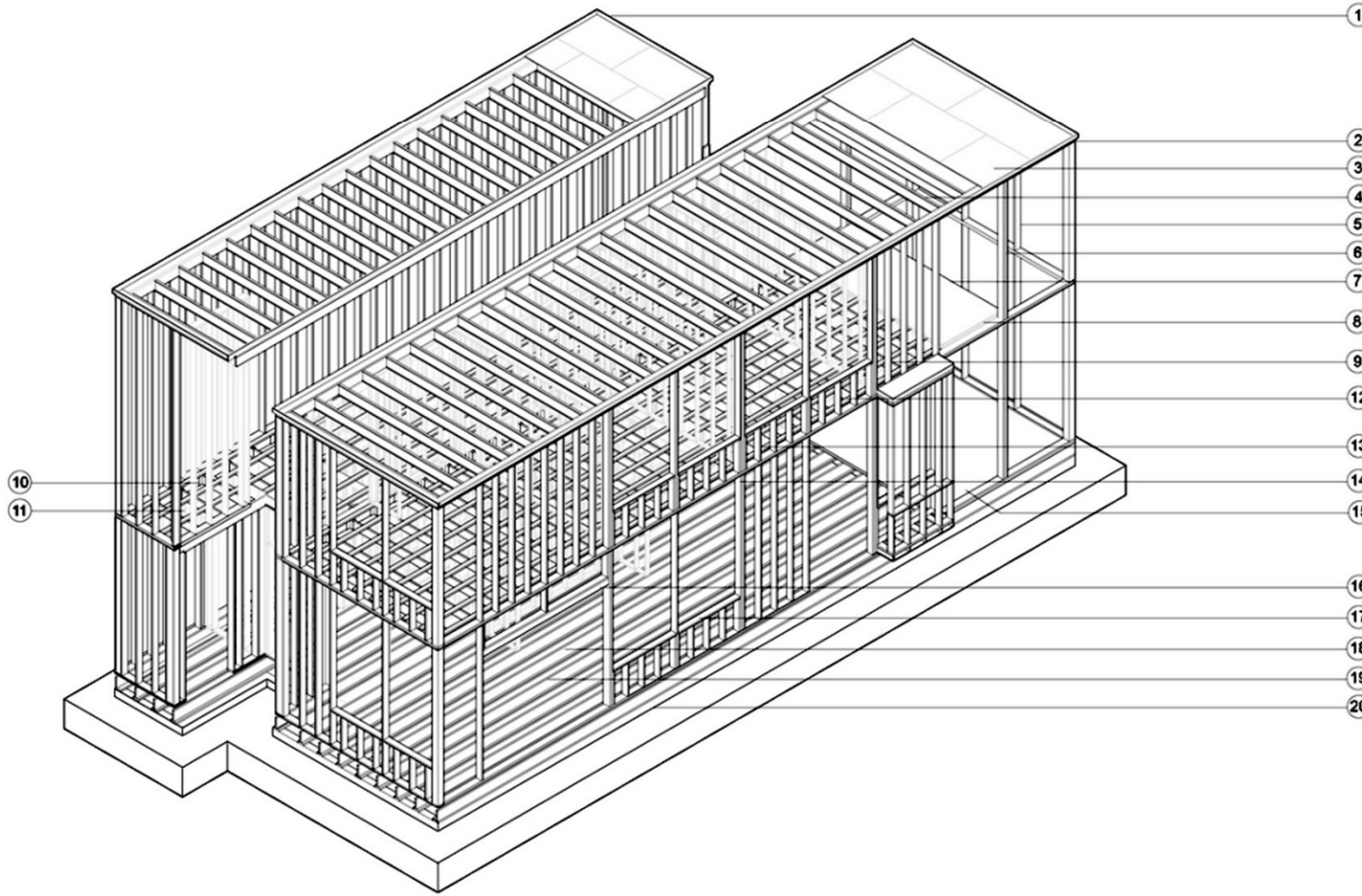


Stud layouts





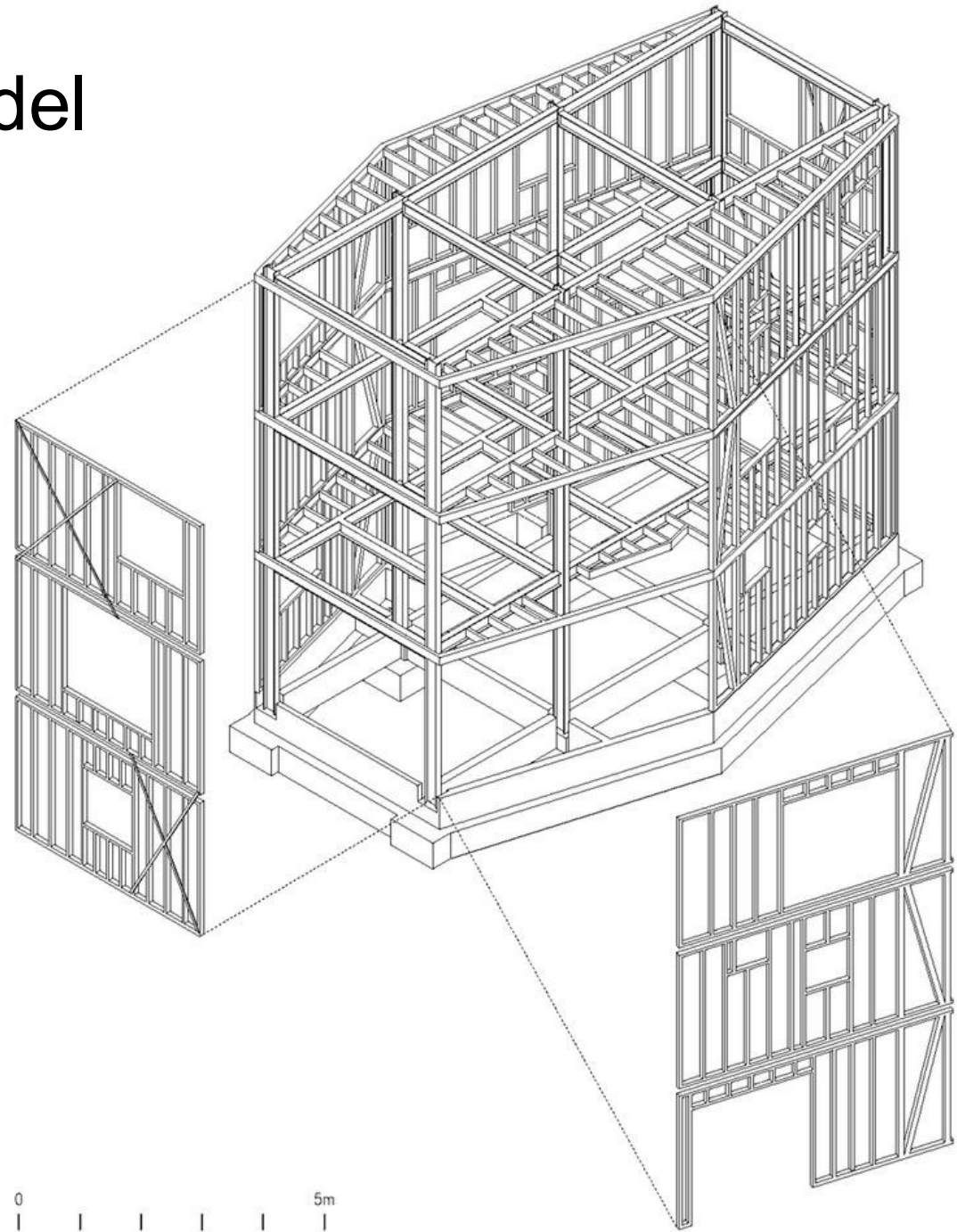
Framing 3-D model



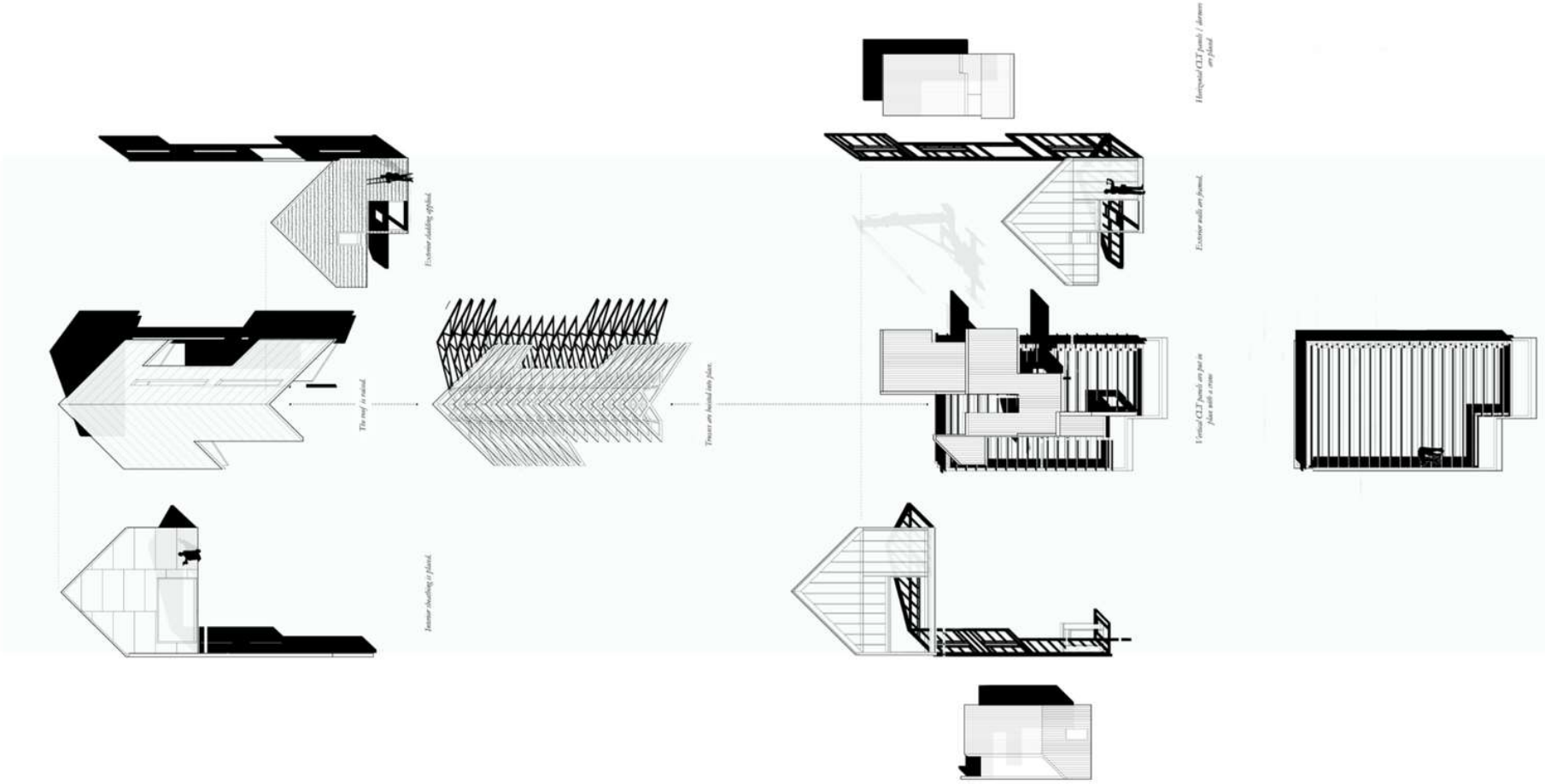
MATERIAL KEY:

1. 2X4
2. 2X6 TOP PLATE TIMBER
3. 3/4" PLYWOOD SHEATHING
4. FRAME OF 9 1/4" TIMBER I-JOISTS, 9 1/4" LVL @ 21'-0" O.C.
5. EXTERIOR 2X6 STUDS
6. EXTERIOR 2X4 STUDS
7. 3/4" PINE FLOORING
8. 3/4" SHEATHING
9. EXPOSED 2X8 TIMBER RAFTERS
10. JOIST HANGERS
11. INTERIOR 2X4 STUDS
12. FRAME OF 2X4 TIMBER
13. CRIPPLE STUDS
14. TRIMMER STUDS
15. 2" POLISHED CONCRETE FLOORING
16. HEADER
17. SILL
18. FRAME OF 2X10 TIMBER
19. FRAME OF 2X6 TIMBER
20. 6" THICK REINFORCED CONCRETE FOUNDATION

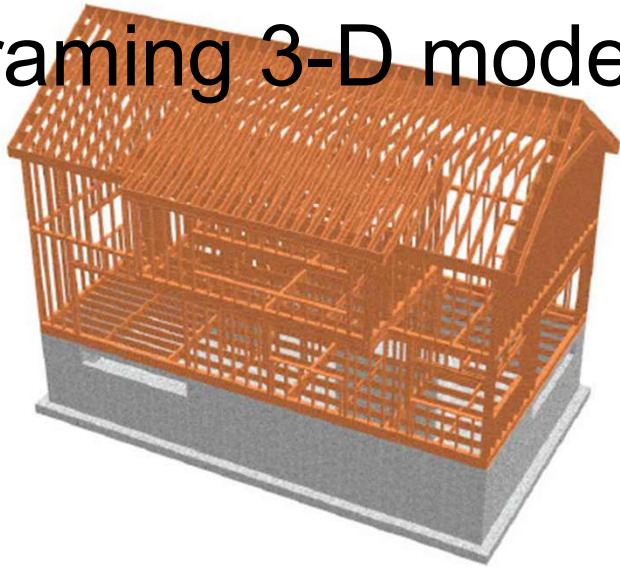
Framing 3-D model



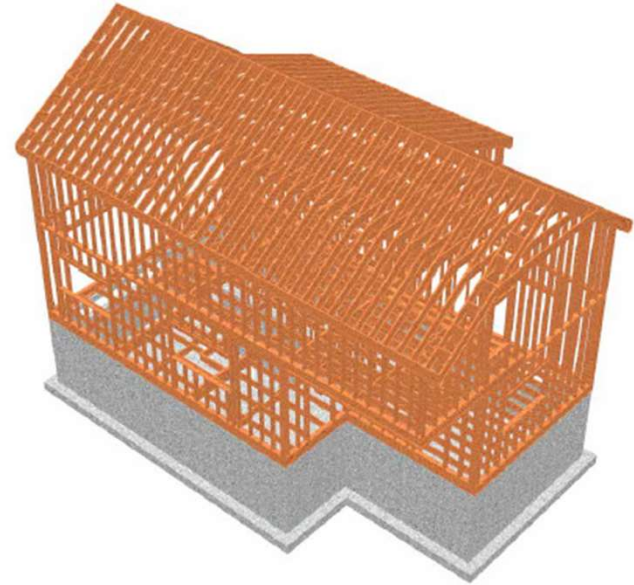
Framing 3-D model



Framing 3-D model



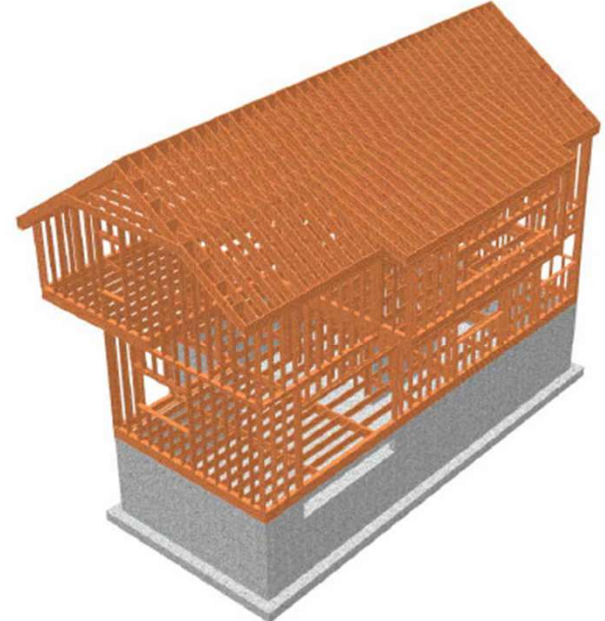
1 EAST SIDE VIEW
G-100



2 SOUTH-WEST SIDE VIEW
G-100

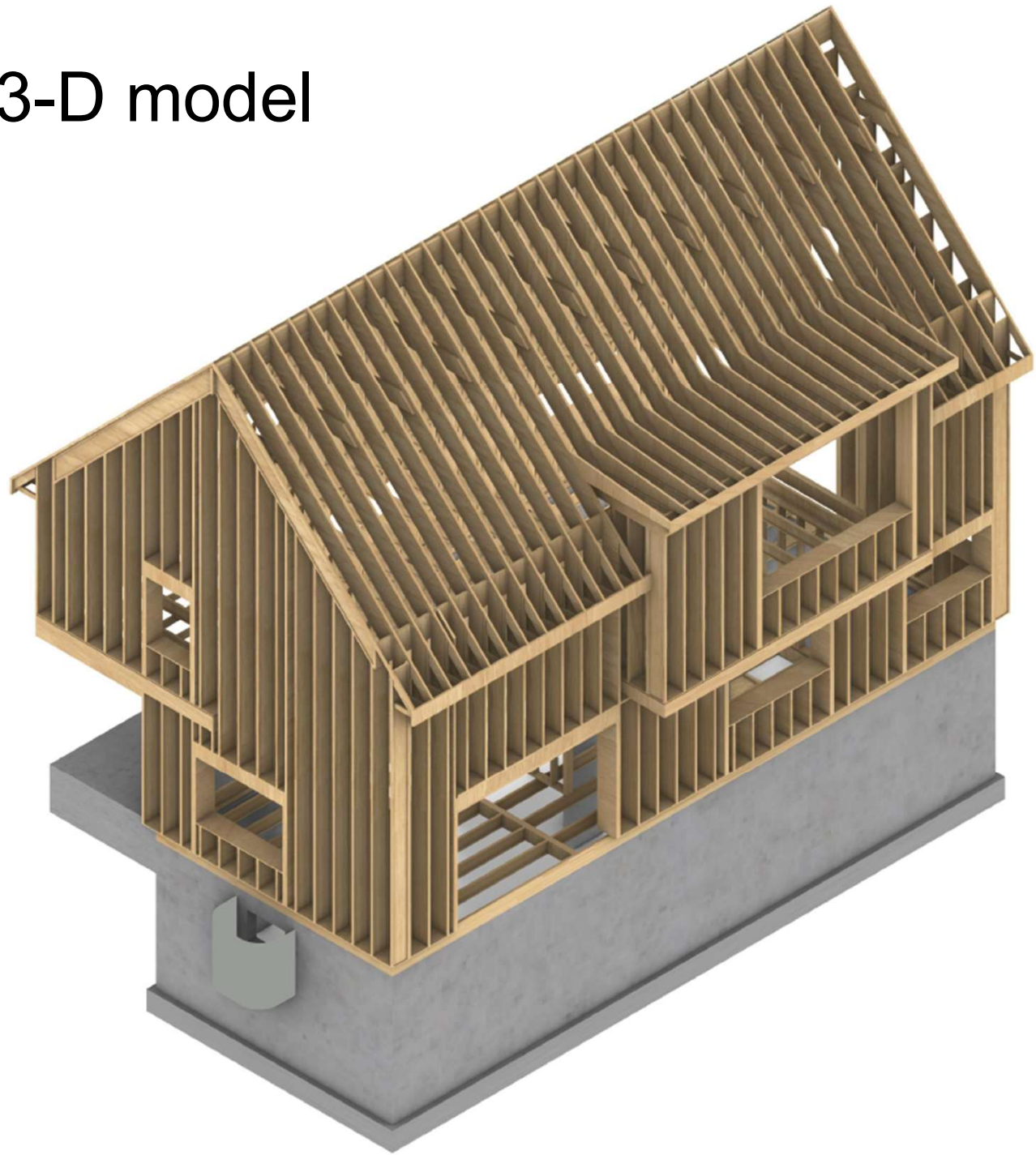


3 NORTH SIDE VIEW
G-100



4 SOUTH-EAST SIDE VIEW
G-100

Framing 3-D model



RH House



"RH House / Julio Zegers Arquitectos" [Casa R:H / Julio Zegers Arquitectos] 15 Oct 2019. ArchDaily. Accessed 16 Oct 2019.
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