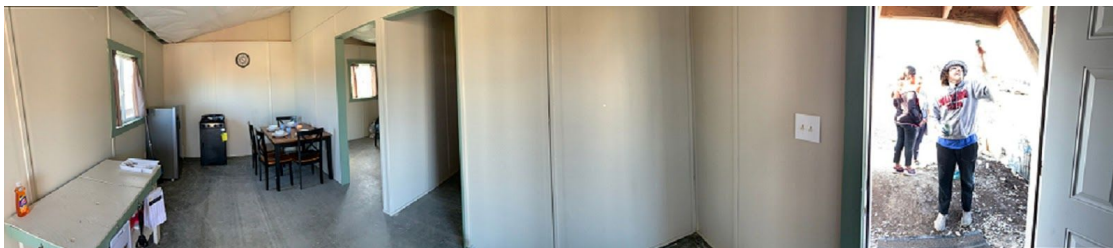


MEXICO HOME BUILD

Manual for a Priceless Yet Inexpensive Homes in Third World Countries



Myles Hubers

Winter 2021
Senior Project

PROCEDURES

FOUNDATION

1. Before you start figure out orientation of the foundation
2. Set formwork for a 20' x 20' by 6" thick slab
3. Concrete pour
4. After 3 days from pour strip formwork
5. After 7 days from pour construction may begin

CONSTRUCTION

1. Purchase all materials according to **estimate sheet**, wear appropriate clothing and bring the basic tools that would be necessary for completion
2. Once you have figured out the working areas, you can start
3. Create 4 work stations (Cutting, Framing, Roofing, and Painting)
4. The roofing team should help other teams until framing is complete
5. Make sure that the tools are going to the correct work area
6. Coordinate with Team who is going to which stations, for maximum efficiency teams should be allocated with roughly the amount of participants as follows
 - i. Cutting team: 2-3
 - ii. Painting team: 10
 - iii. Framing team: 10
 - iv. Roofing team: 10

CUTTING TEAM

- Set up chow saw
- Cut according to **cut sheet**
- Once roofing team has began, and cutting team is done they can install openings (door and windows)

PAINTING TEAM

- Decide what colors you will use: siding, exterior trim, interior trim and drywall.
- Paint all materials prior to building, touch up paint at the end of construction.
- Paint grooved plywood according to your siding paint.
- Paint 3 sides of all the 1 x 4 pieces with your exterior trim color.
- Paint the 1 x 6 pieces with your exterior trim color.
- See gallery for further assistance

FRAMING TEAM

- Build right and left side walls on foundation according to **framing** and **plywood plans**
- Build front and back walls on the right and left side walls according to **framing** and **plywood plans**
- Use 2 framing nails for each end of every connection
- Tilt up all four walls and use a powder-actuated nailer to anchor three of the four walls to slab
- Carry in last interior walls through the opening of the unanchored wall and anchor remaining walls to slab
- Attach all walls as shown in the **wall detail plan**
- See gallery for further assistance

ROOFING TEAM

- Build roof framing with a 5:1 slope factor according to **roofing plans**
- Place and nail plywood to roof framing according to **roofing plans**
- Lay rolling paper above plywood
- Place Aluminum bracket to edges of the front and back roof
- Attach shingles to the roof, start at bottom. Start from the front edge of the building on either side. The first shingle of every row should

vary in length. First row should be 1/4th size for the first shingle, second row 1/2 size, followed by third row 3/4th size and forth row should be a full size shingle. This pattern then repeats up the slope of the roof. All other shingles should be full length pieces. Each shingle should have 1 roofing nail per 1/4 shingle, however minimum 2 nails per shingle.

- Repeat this for remaining side (use a chalk line to help keep shingles straight)
- Cut shingles that are hanging off the rear end of roof with with a box cutter
- Use 1/4th shingles, turn them sideways at highest point of roof from front and rear of building and meet them at the center
- See gallery for further assistance

INTERIOR

1. Once framing is complete the framing team should be reallocated to the interior of the building.
2. MEP (Mechanical, Electrical and Plumbing could be installed in walls at this point)
 - i. This manual will exclude MEP
3. Next insulation should be installed in all exterior walls.
4. Cut drywall to size and nail edges to studs
5. Attach trim to drywall, covering all exposed nails (plaster could be an alternative)
6. Lastly, touch up all walls with paint
7. See gallery for further assistance

ESTIMATE

Foundation			
400	Slab 400 sq ft	\$ 4.25	\$ 1,700.00
Materials			
Count	Description	Price/Unit	TOTAL
113	Lumber 2X4X8	\$ 5.00	\$ 565.00
35	Board 1X4X8	\$ 3.31	\$ 115.85
31	Lumber 2X6X12	\$ 12.00	\$ 372.00
22	Lumber 2X4X12	\$ 9.00	\$ 198.00
4	Board 1X6X12	\$ 7.80	\$ 31.20
10	Lumber 2X4X10	\$ 7.00	\$ 70.00
11	Board 1X6X10	\$ 6.50	\$ 71.50
13	Lumber 2X4X20	\$ 15.00	\$ 195.00
24	Grooved Plywood 4x8 5/8	\$ 24.50	\$ 588.00
18	OSB Plywood 4x8 1/2	\$ 17.50	\$ 315.00
43	Drywall 4x8 1/2	\$ 6.90	\$ 296.70
176	Drywall trim 8'	\$ 1.30	\$ 228.80
25	Double Shingle	\$ 15.00	\$ 375.00
3	Roofing Paper 15-30	\$ 18.01	\$ 54.03
1	Door & Fixtures	\$ 500.00	\$ 500.00
4	Window	\$ 100.00	\$ 400.00
4	Paint (Gallon)	\$ 40.00	\$ 160.00
400	R-19 Insulation	\$ 0.60	\$ 240.00
Total Materials			\$ 4,776.08
Total Materials + Foundation			\$ 6,476.08

CUT LIST

2 x 4

- 10 x 1' 8" - Blocking between rafters
- 1 x 6' 11" - Middle wall header
- 55 x 7' 7 ½" - Wall studs
- 2 x 7' 11" - Middle wall Jack studs
- 2 x 9' 6 ½" - Right side top plate
- 16 x 9' 7 ½" - Middle wall studs
- 3 x 9' 10 ¼" - Division wall top/bottom plates
- 4 x 19' 5" - Middle/Left side top/bottom plates
- 8 x 20' 0" - Top/Bottom plates
- 2 x 20' 7" Front and back wall top plate
- 1 x 41" - Top of Door*
- 2 x 80 ½" -King Stud for Door*
- 8 x 34 ¾" - Windows Top/Bottom*
- 4 x 42" -Cripple Below Window

2 x 6

- 22 x 11' 2 ½" (45 degree angle cut on both ends)

1 x 6

- 2 x 21' 10"
- 4 x 11' 3 ½" (45 degree angle cut on both ends)

***Door/window header and cripple stud should be cut after measured**

**** Interior trim/drywall should be cut after measured**

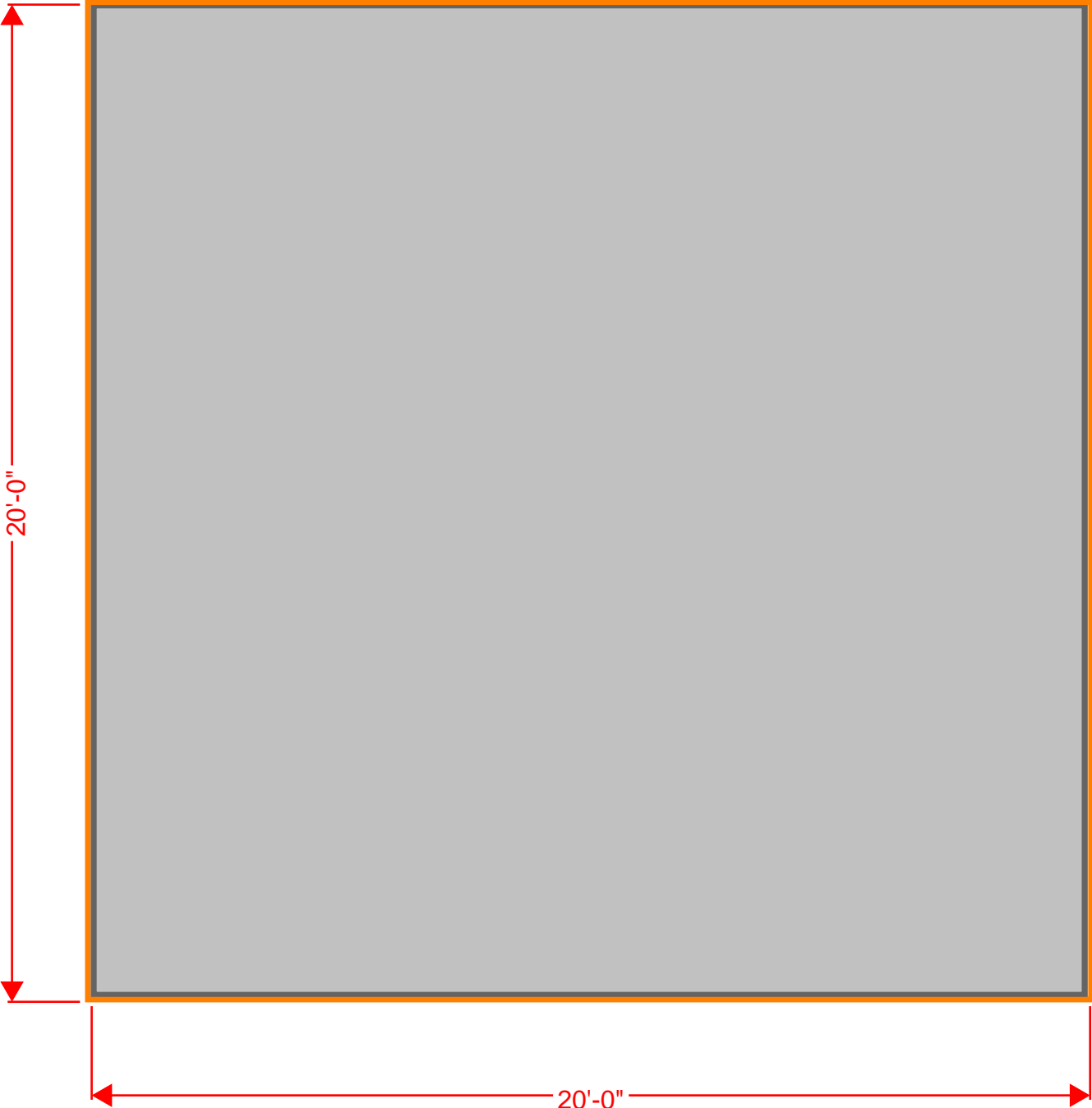
Foundation



=

Formwork

SLAB 6" THICK



Elevation

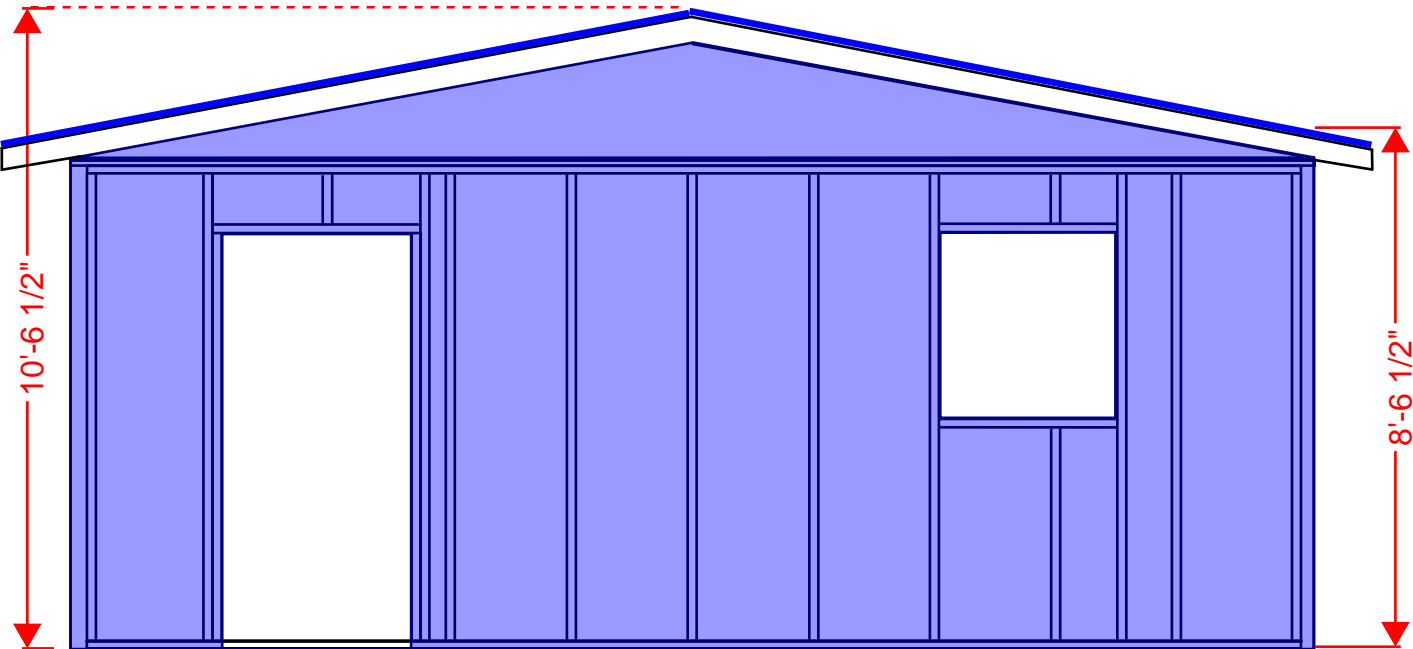
Roof Slope
Factor 1:5

HEIGHTS:

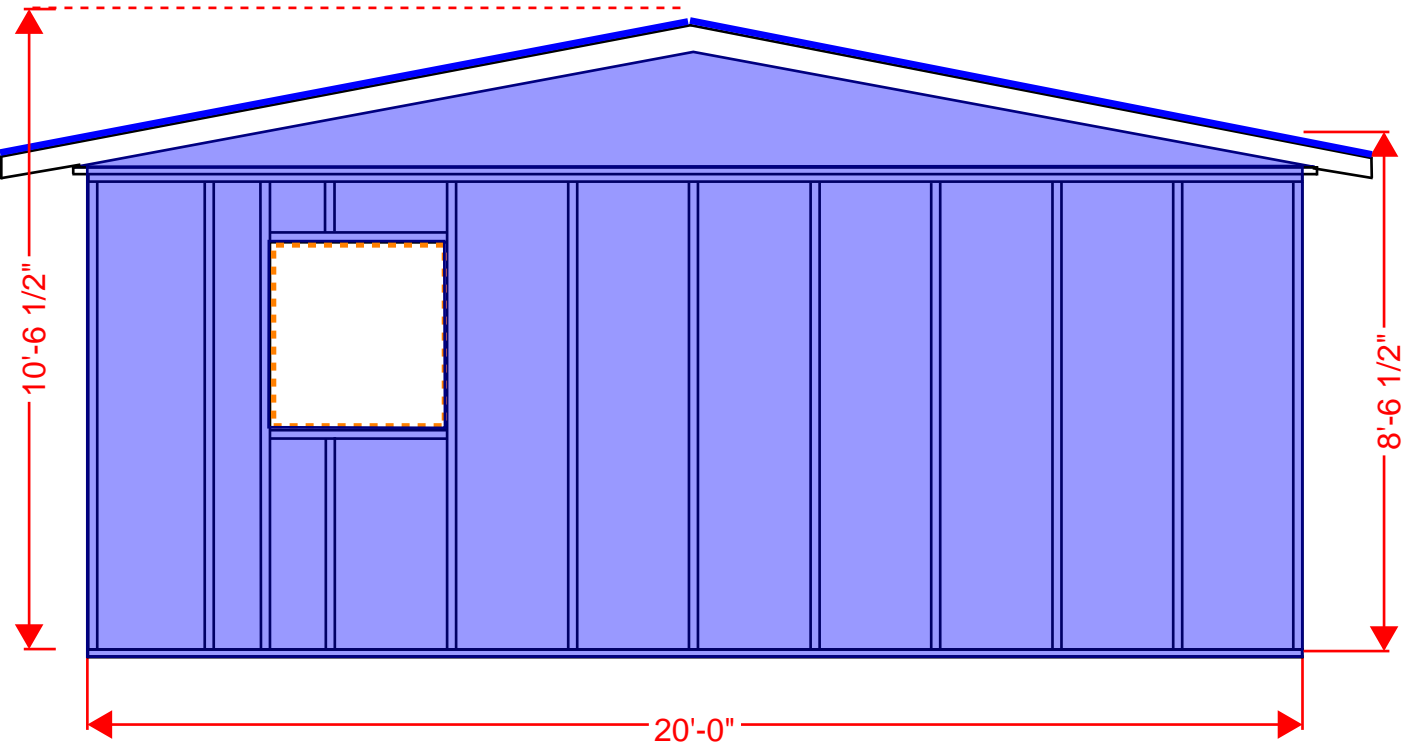
PLYWOOD 1/2"

RAFTER 6"

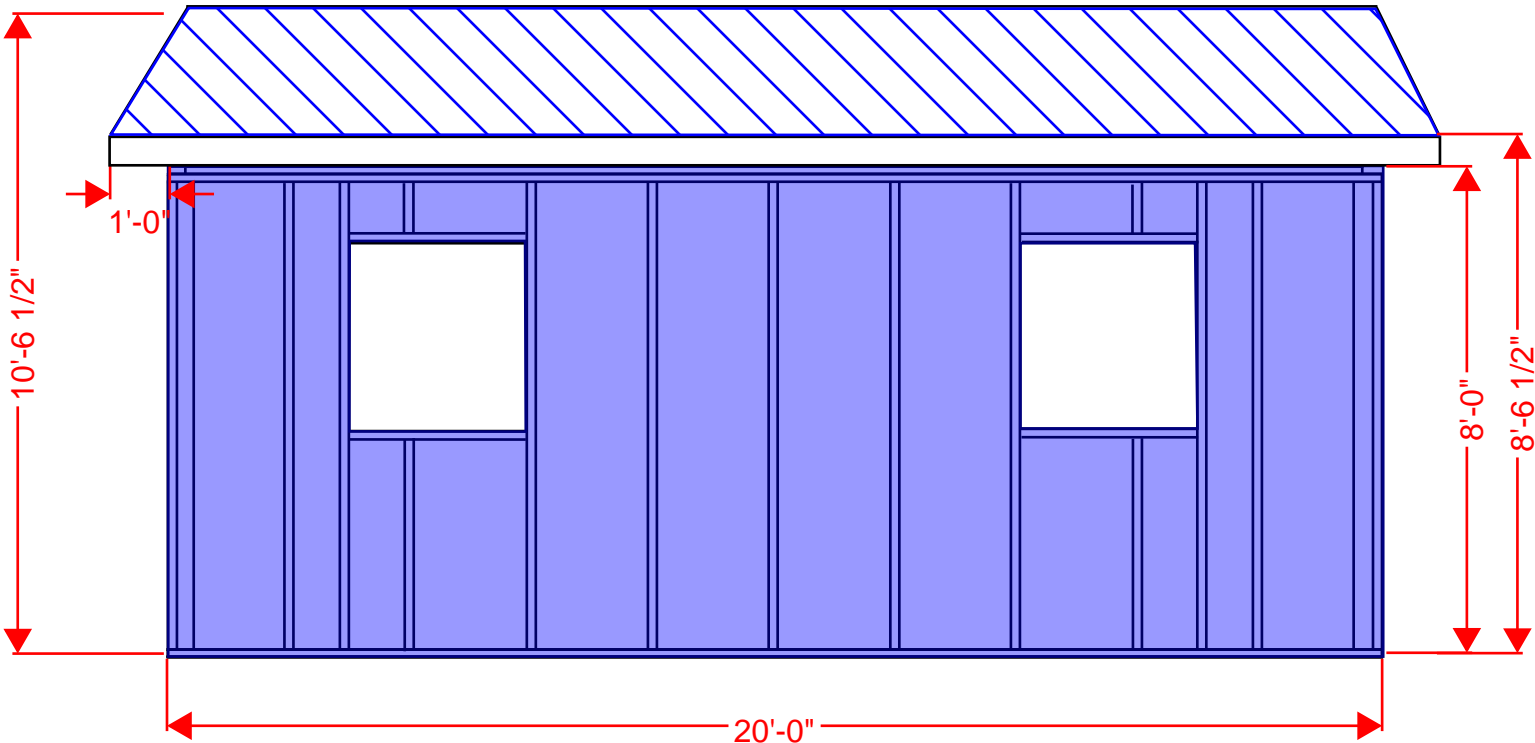
FRONT ELEVATION



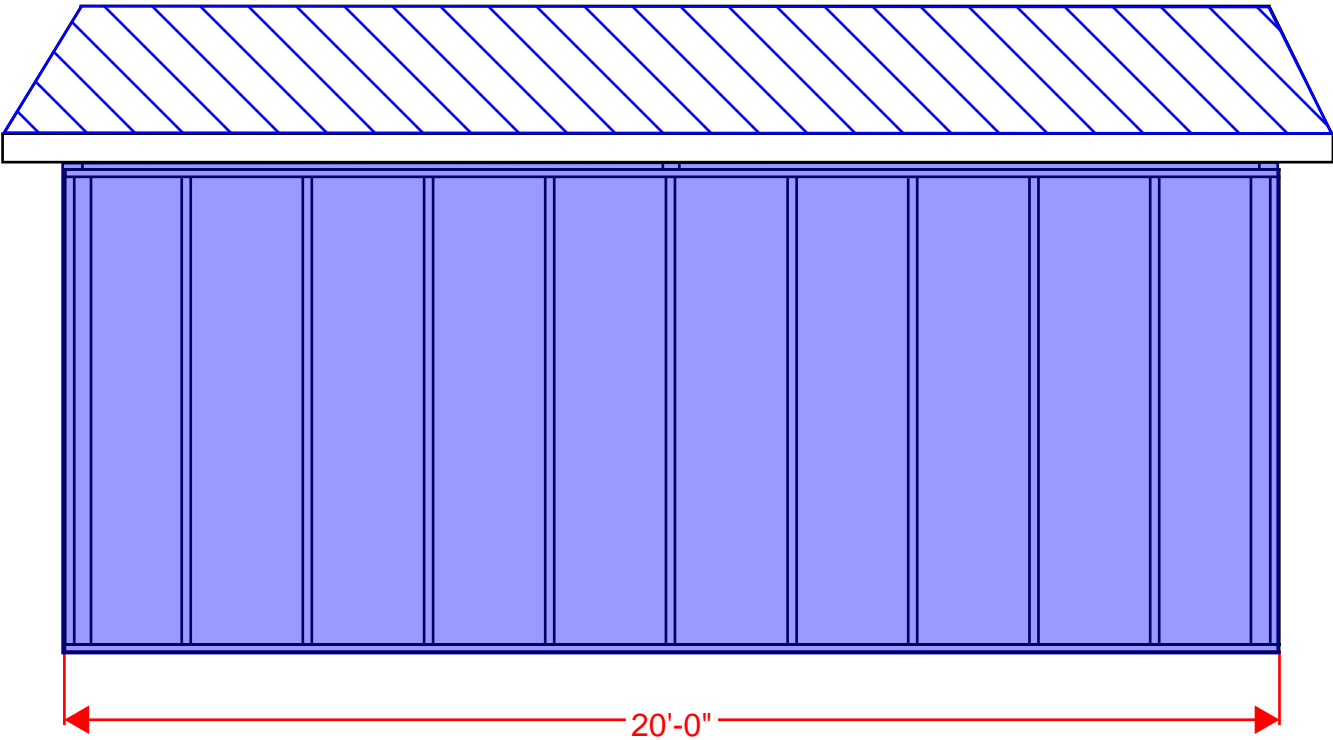
BACK ELEVATION



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

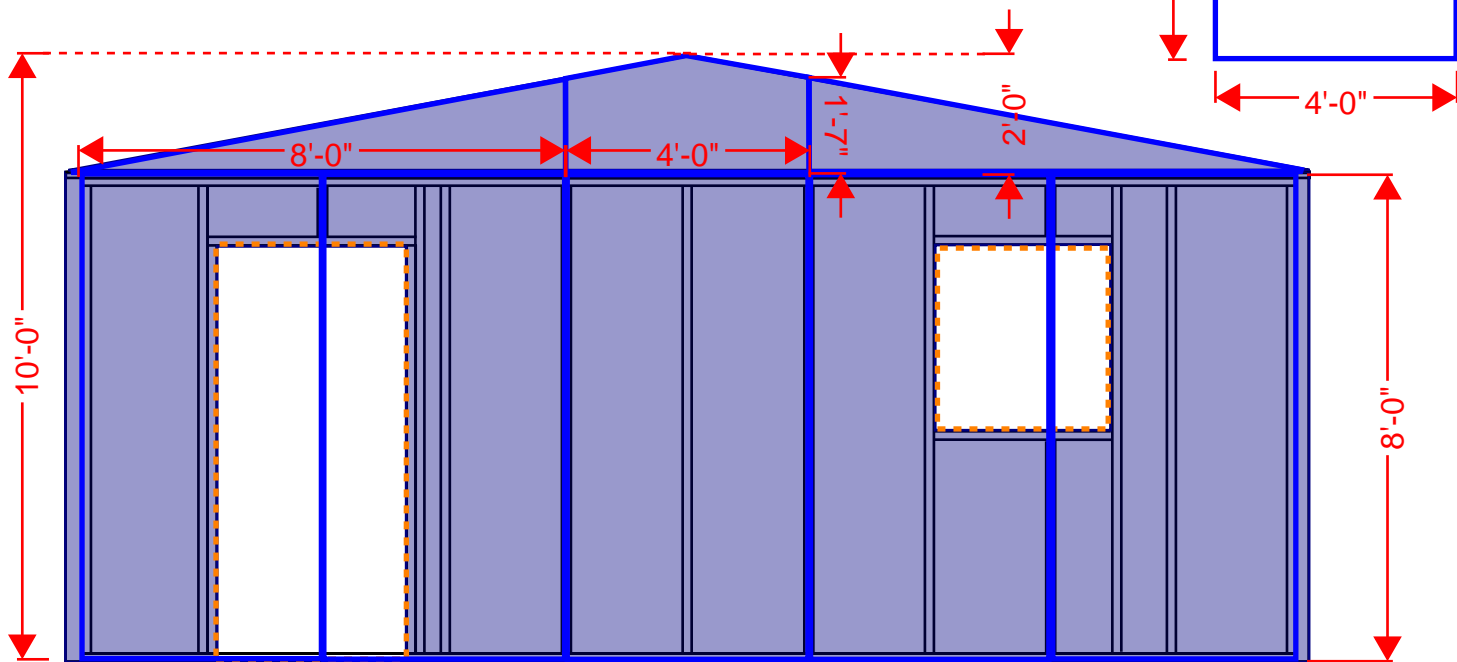


Plywood Plan

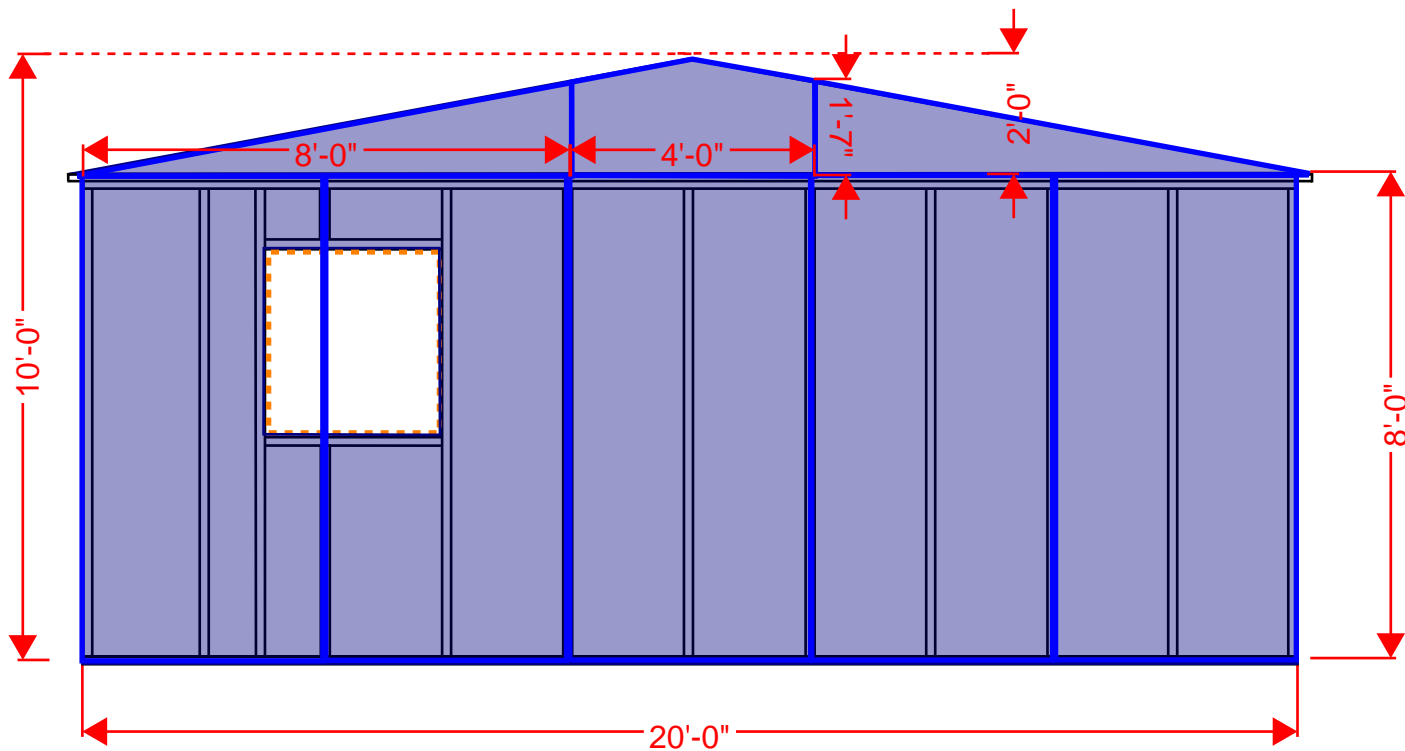
----- = Cut

Ingraved
Plywood

FRONT WALL

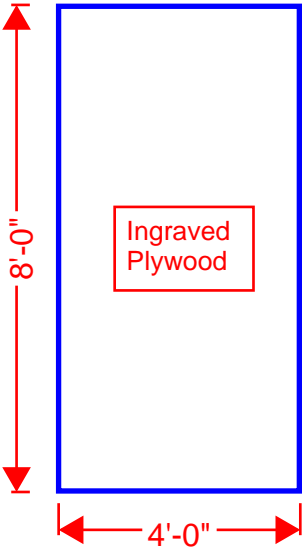


BACK WALL

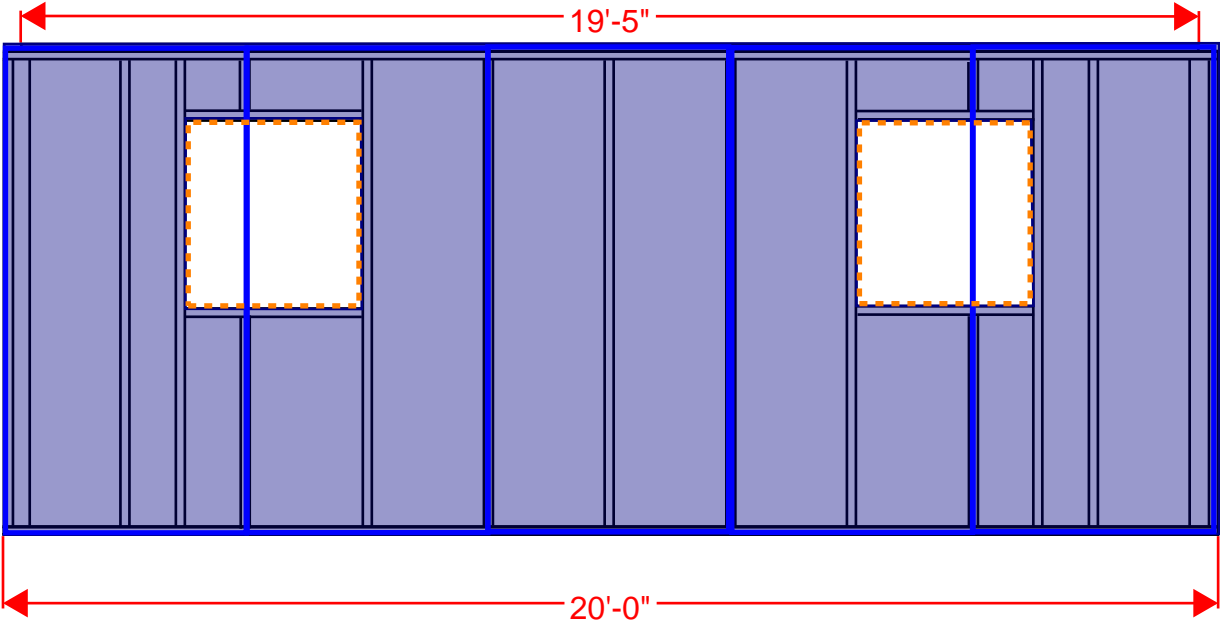


Plywood Plan

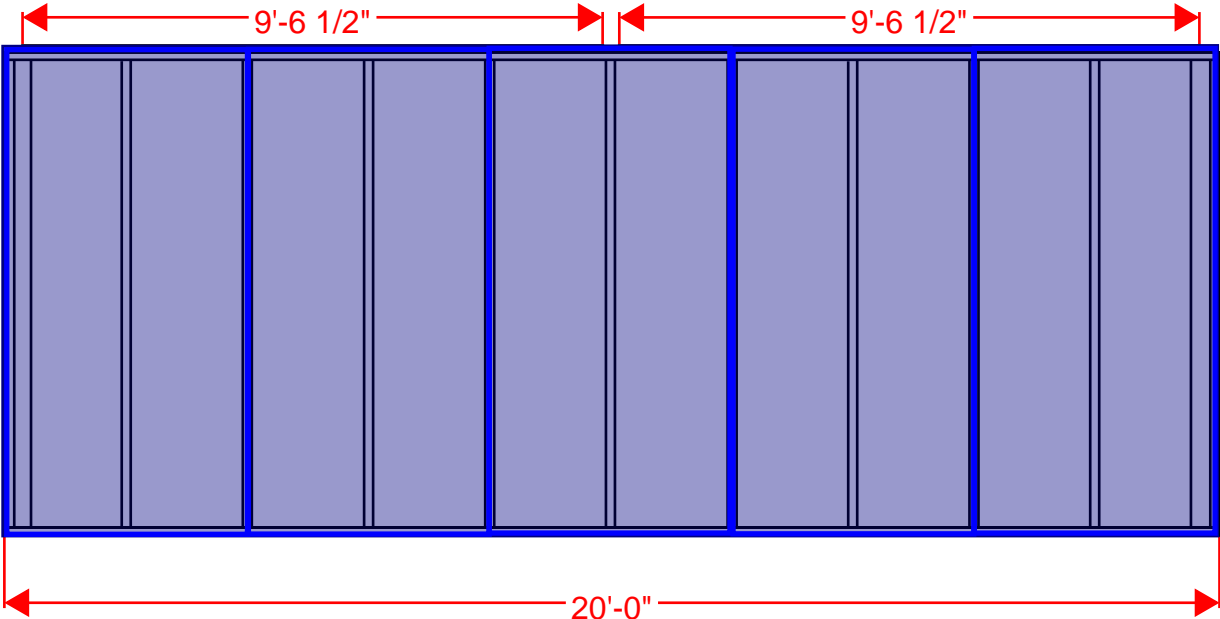
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LEFT SIDE WALL

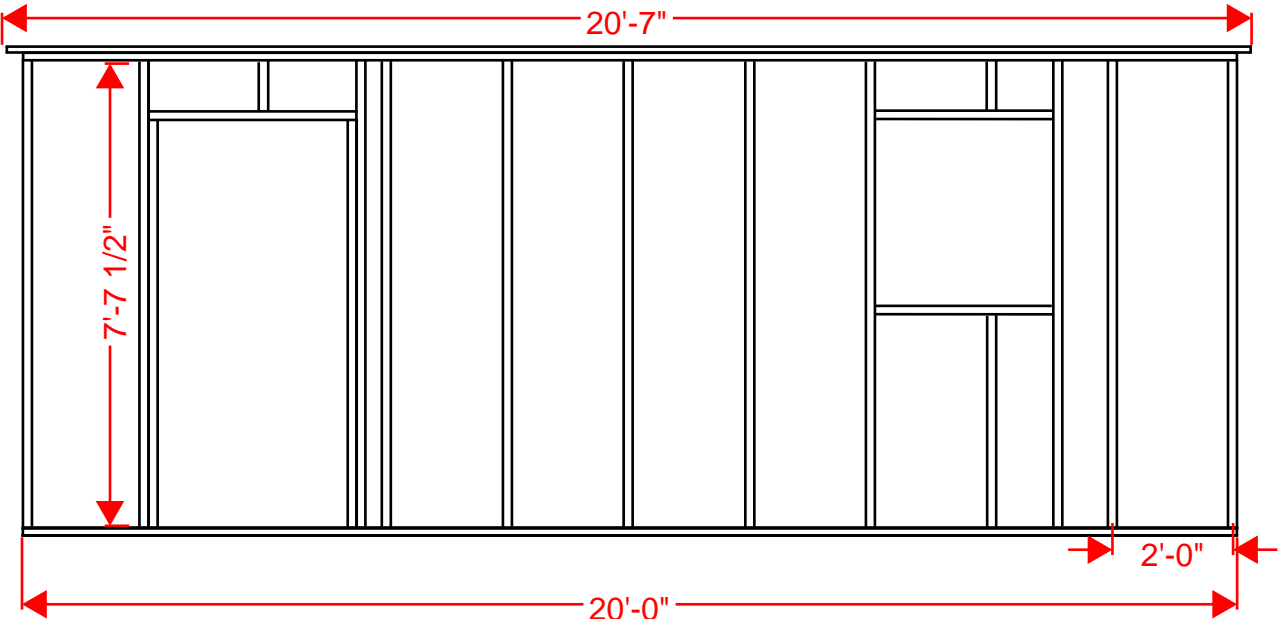


RIGHT SIDE WALL

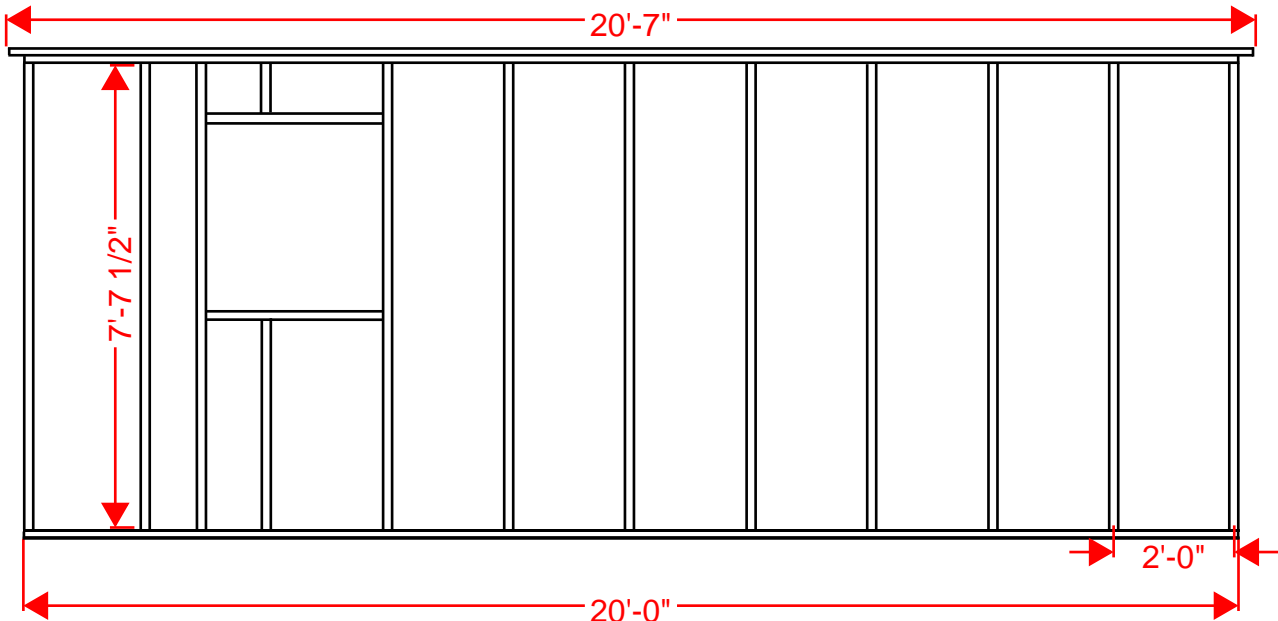


Stud Spacing 2ft O.C.
Studs 2 x 4

FRONT WALL

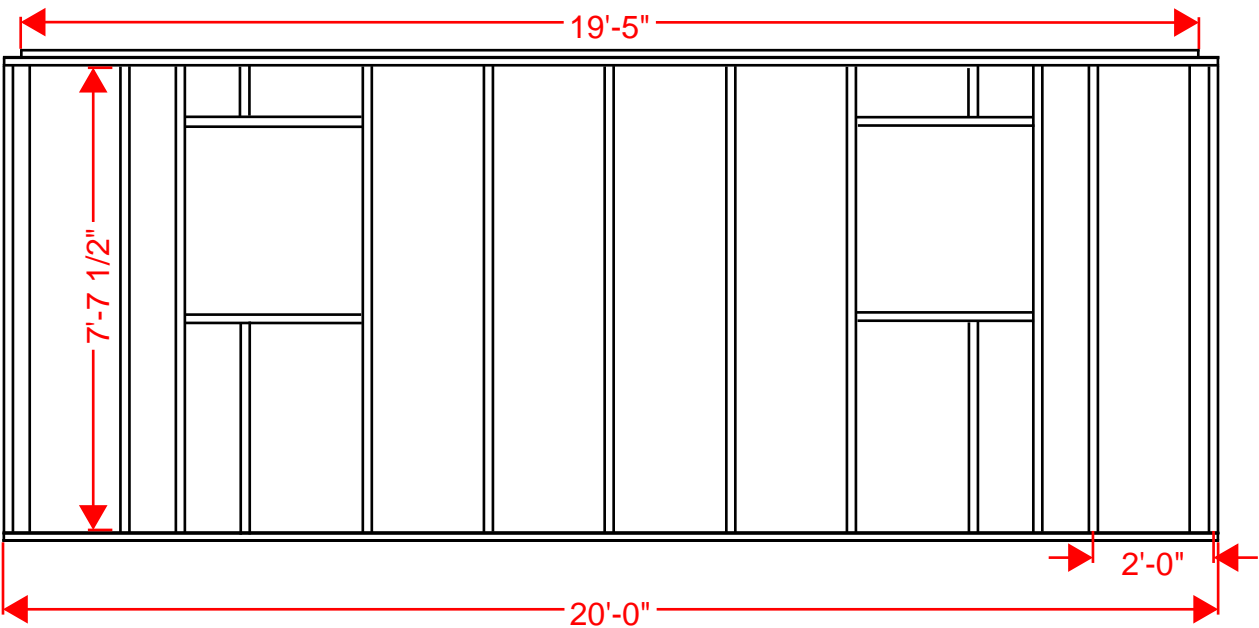


BACK WALL

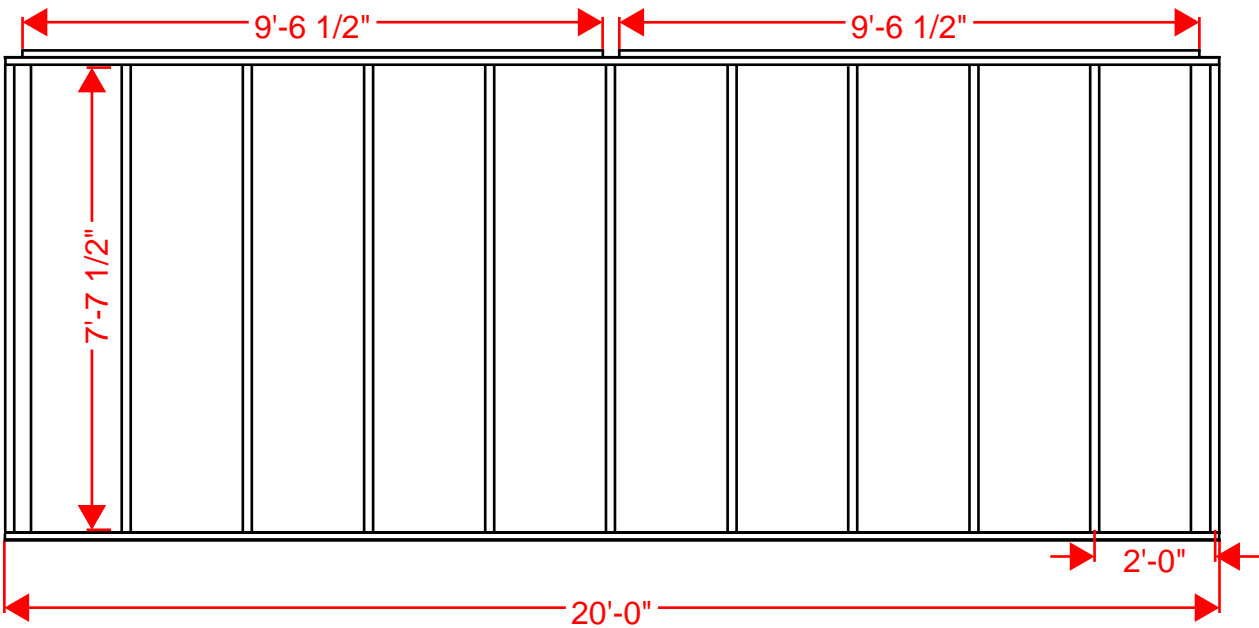


Stud Spacing 2ft O.C.
Studs 2 x 4

LEFT SIDE WALL



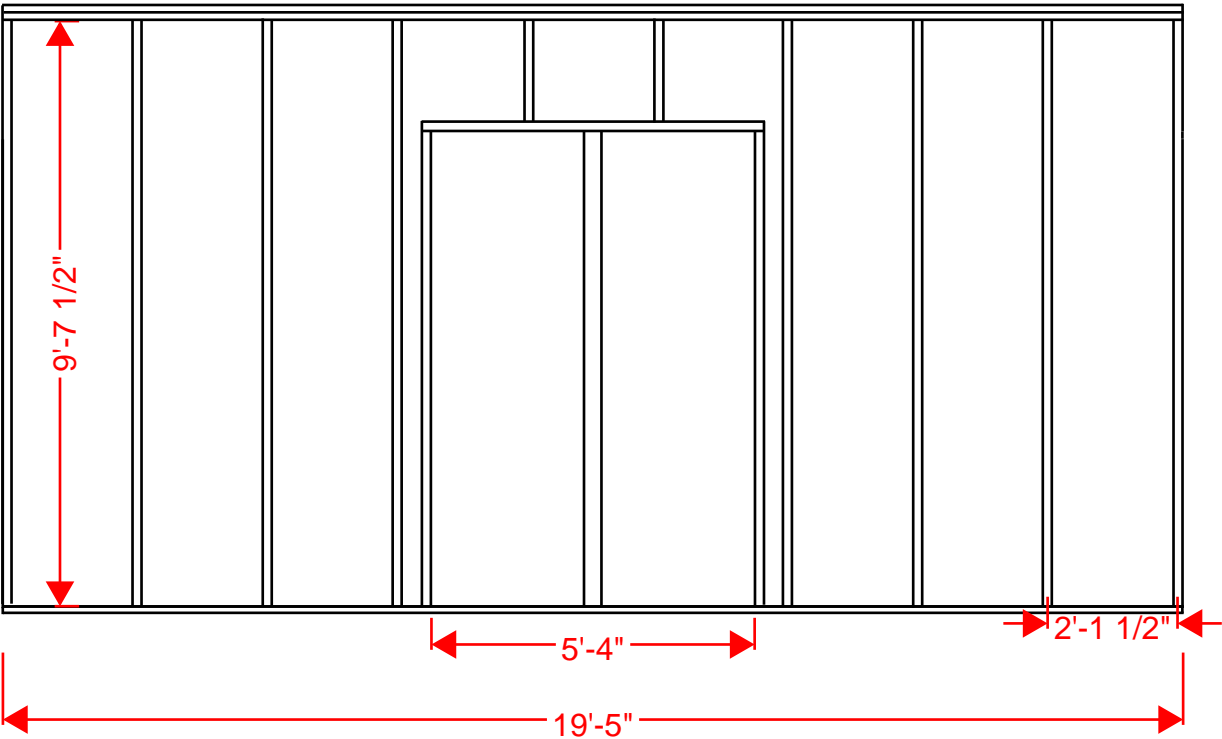
RIGHT SIDE WALL



Framing Plan

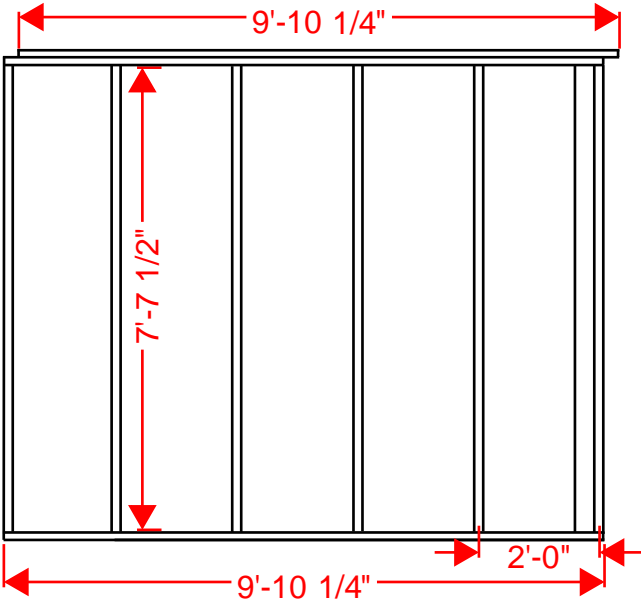
Stud Spacing 2' 1.5" O.C.
Studs 2 x 4

MIDDLE WALL

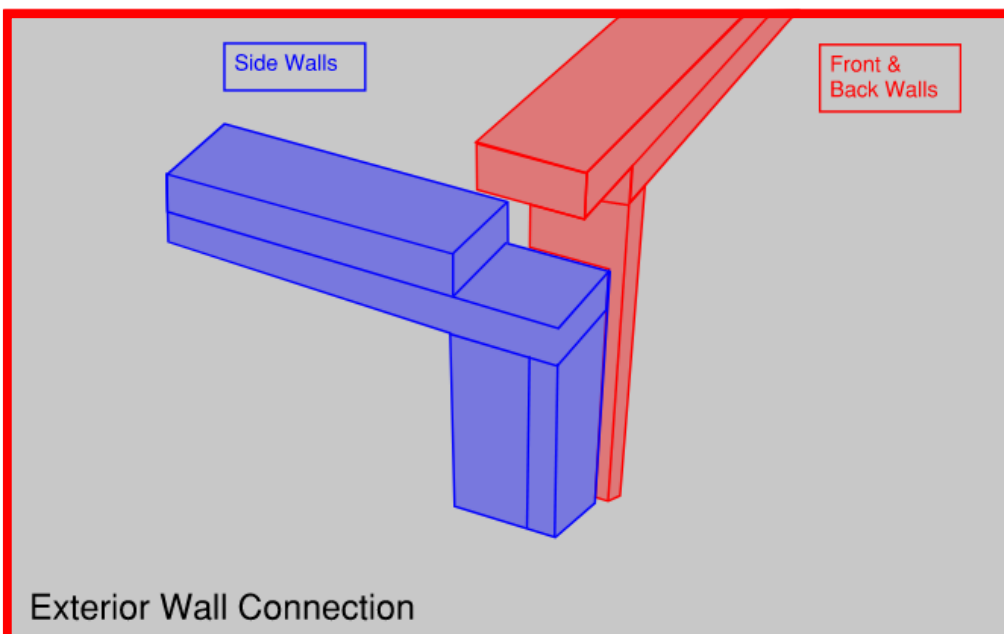
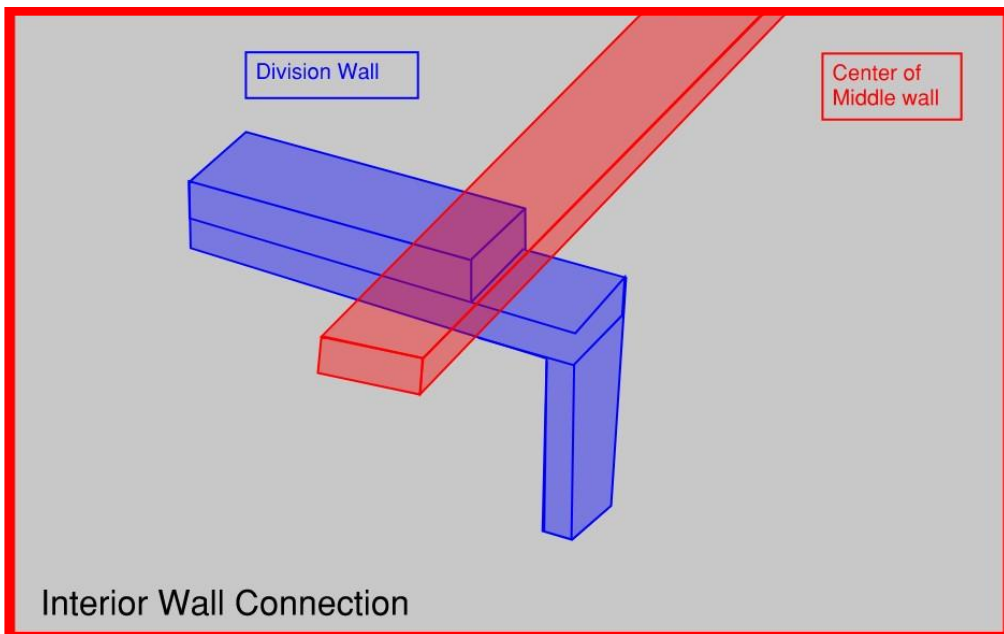
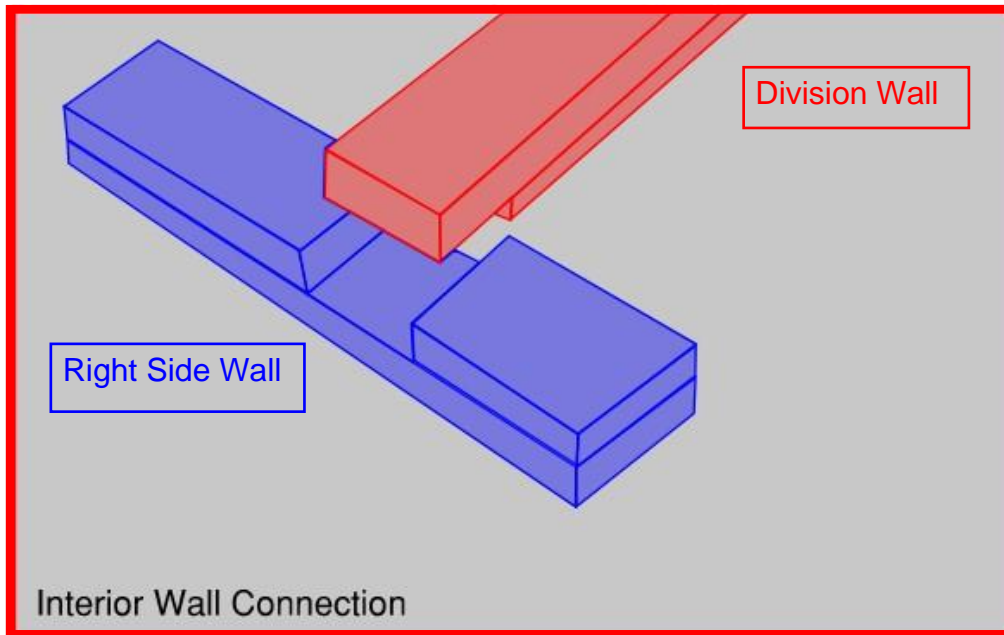


DIVISION WALL

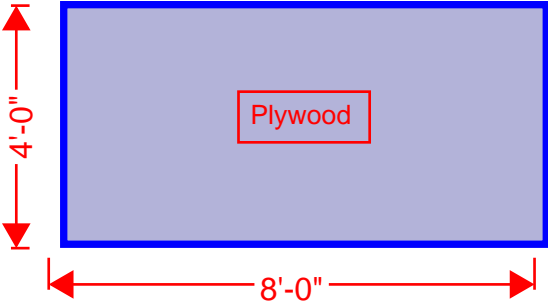
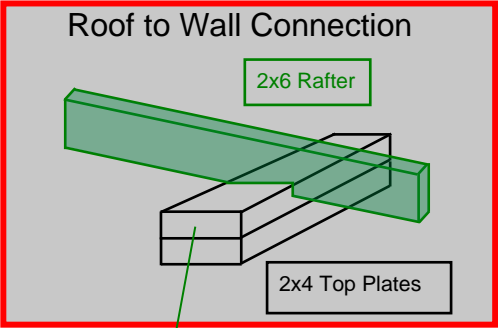
Stud Spacing 2ft O.C.
Studs 2 x 4



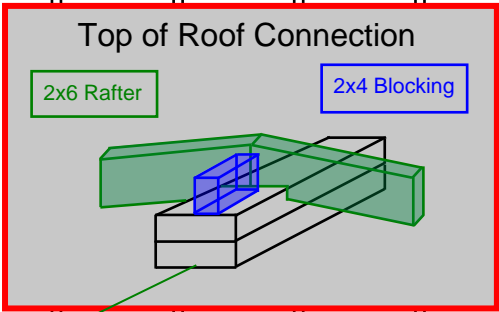
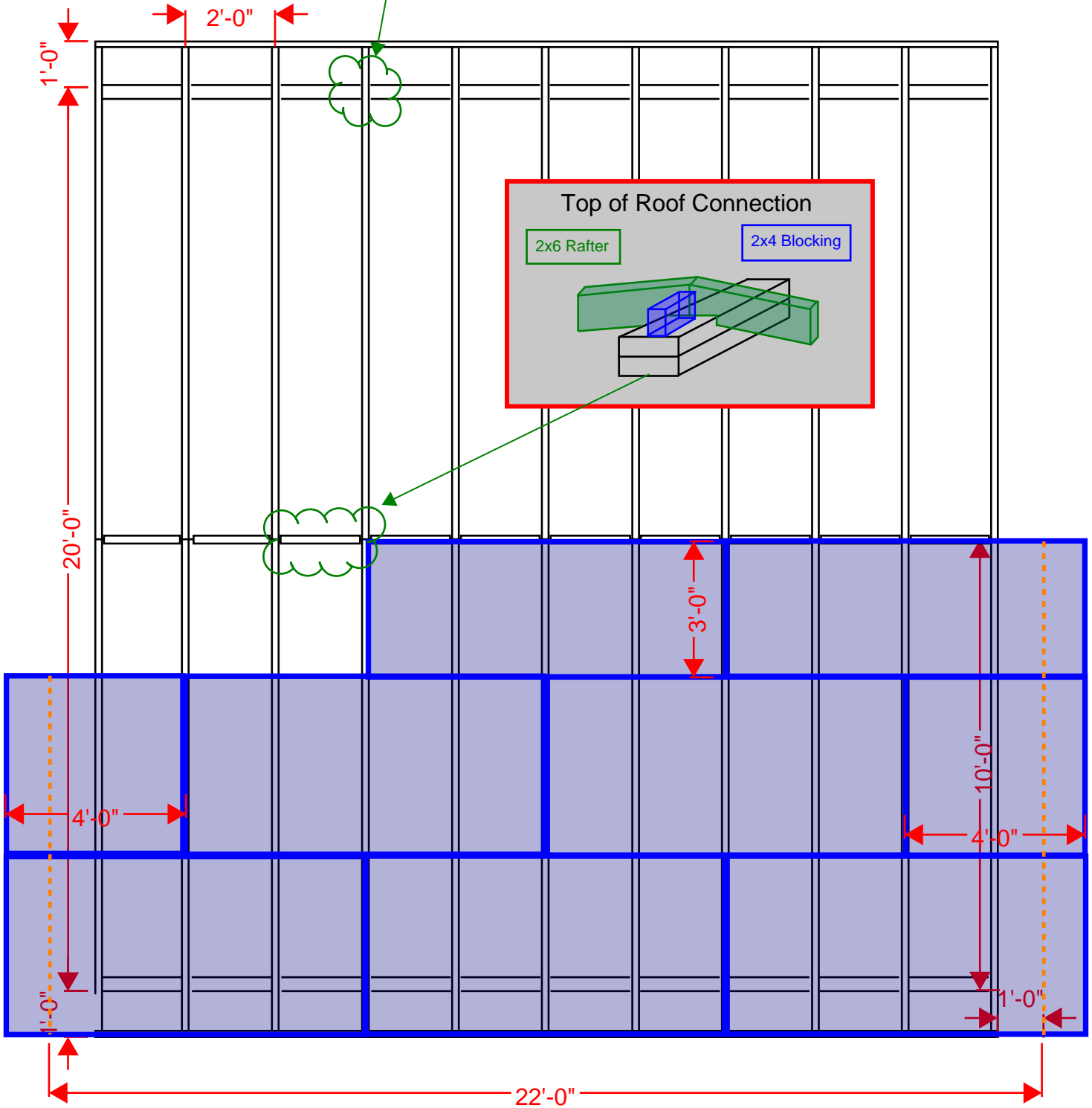
Wall Details



Roofing Plan

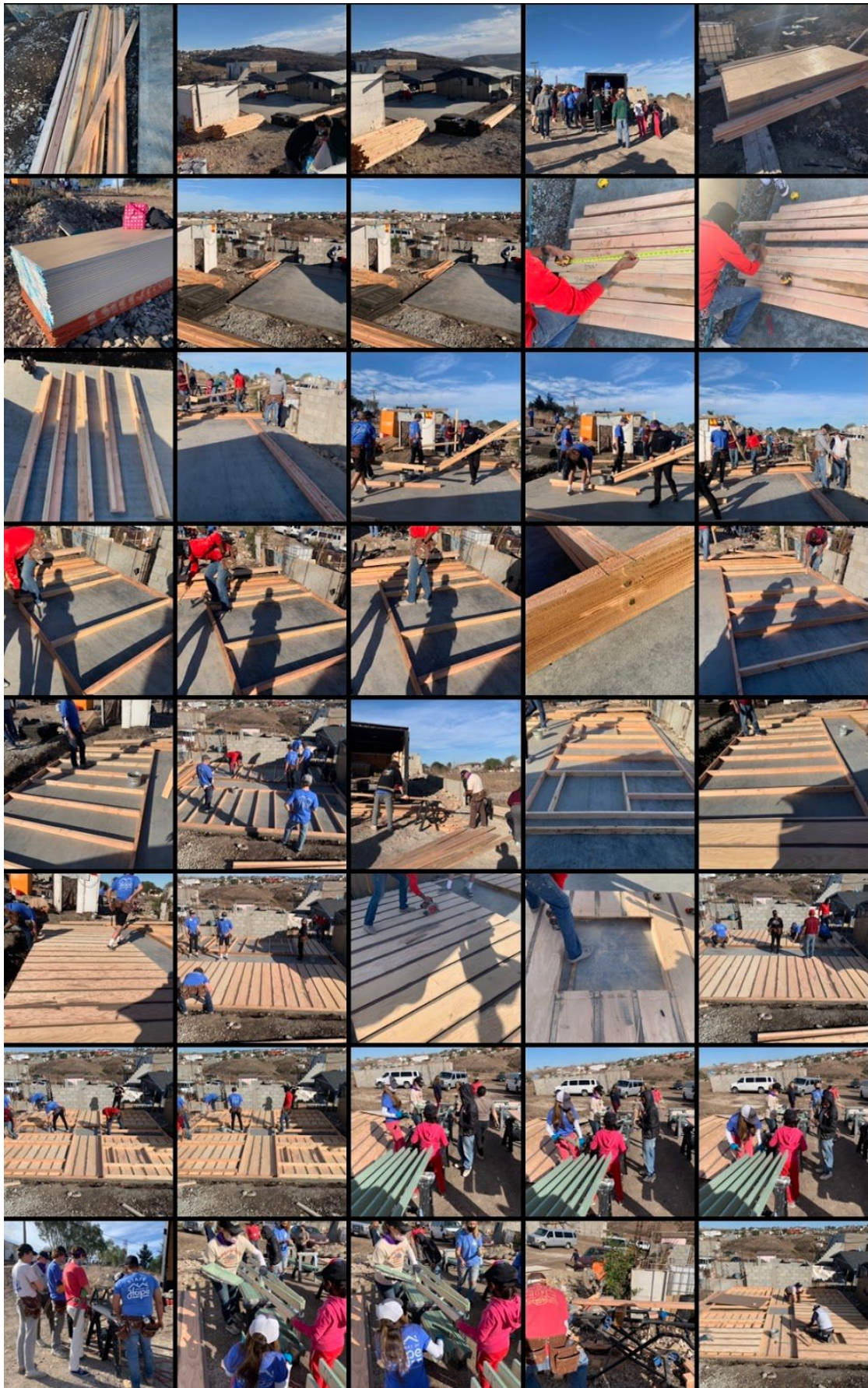


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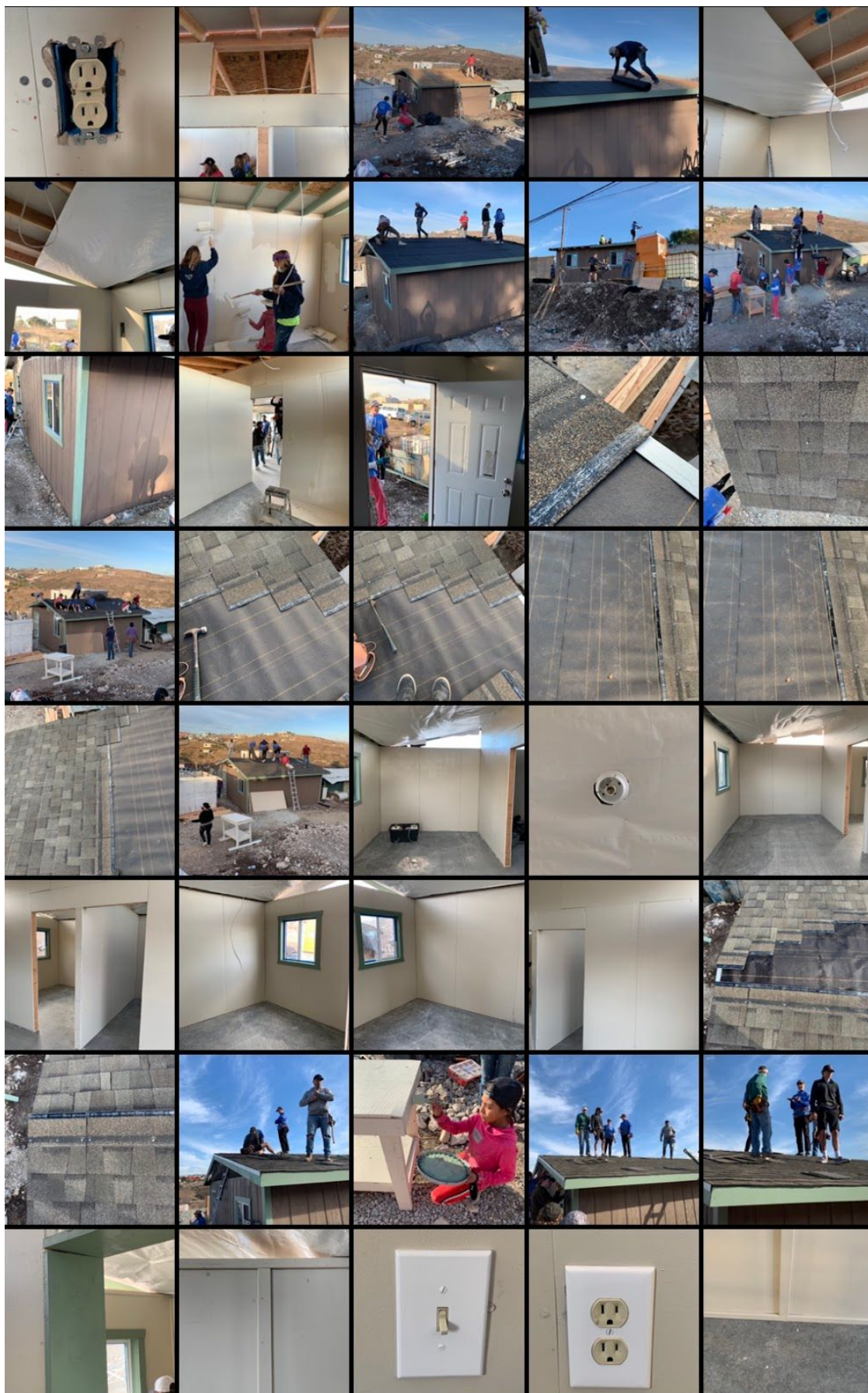
Rafter Spacing 2ft O.C.
Rafter 2 x 6

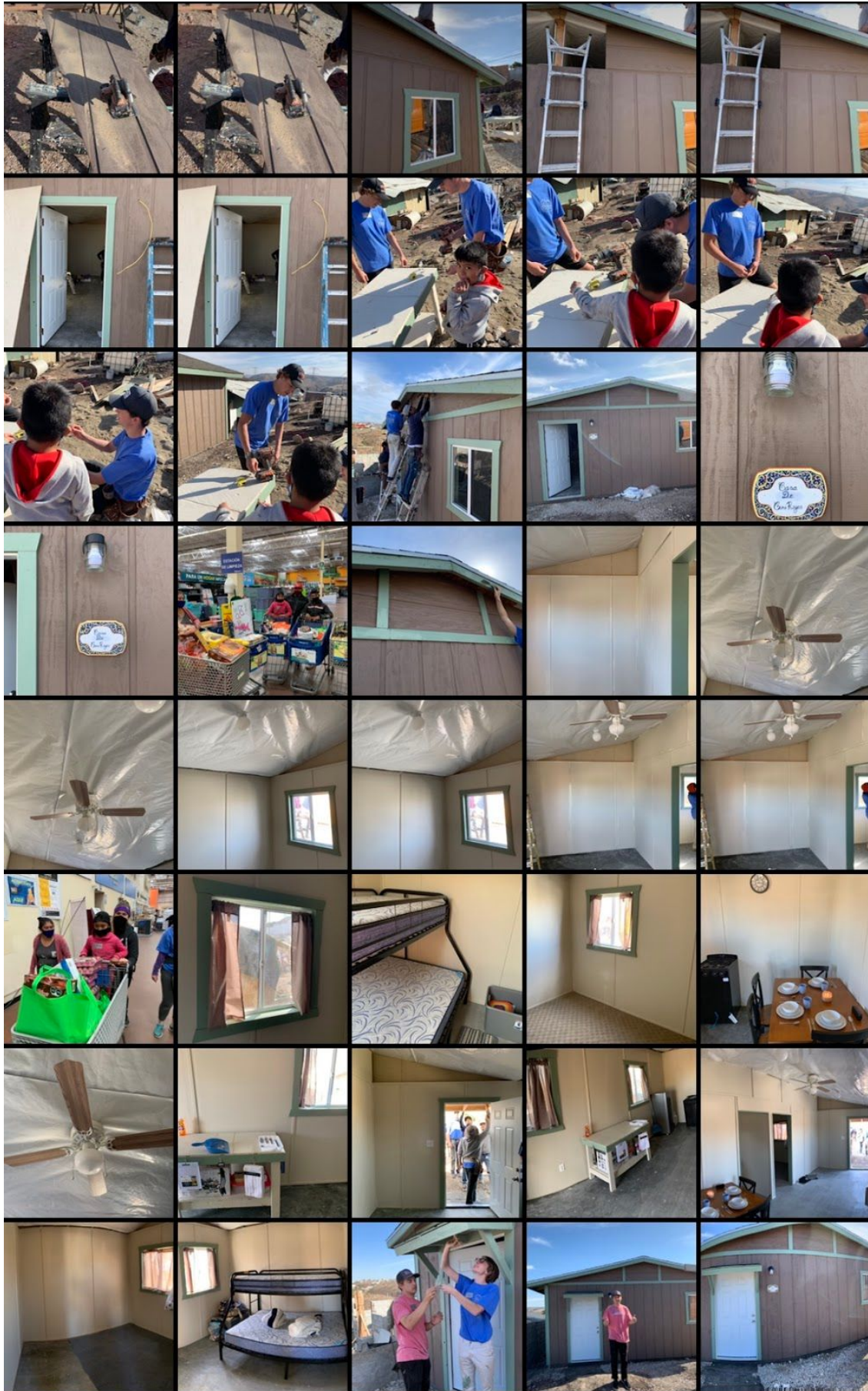
GALLERY











This project excludes any electrical that may be seen in pictures

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