



# **NEW FRAMEWORKS PANELS OWNER & INSTALLER'S GUIDE**



# PROJECT INFO:

PROJECT NAME

PROJECT ADDRESS





# ABOUT THIS GUIDE

THIS GUIDE IS INTENDED TO BE USED AS A REFERENCE AND COMPILATION OF RECOMMENDATIONS. THERE ARE MULTIPLE WAYS TO ACHIEVE A SUCCESSFULLY PANELIZED BUILDING, THE DETAILS IN THIS GUIDE ARE THE MEANS BY WHICH NEW FRAMEWORKS HAS FOUND THE MOST SUCCESS IN THEIR PROJECTS.

## CHAPTER INDEX:

- » RECEIVING THE PANELS
- » PANEL TYPES AND LABELS
- » TOE UP
- » PANEL LAYOUT AND INSTALLATION
- » BUILDING PERFORMANCE AND CARE



# RECEIVING THE PANELS



# UNLOADING AND STORING PANELS

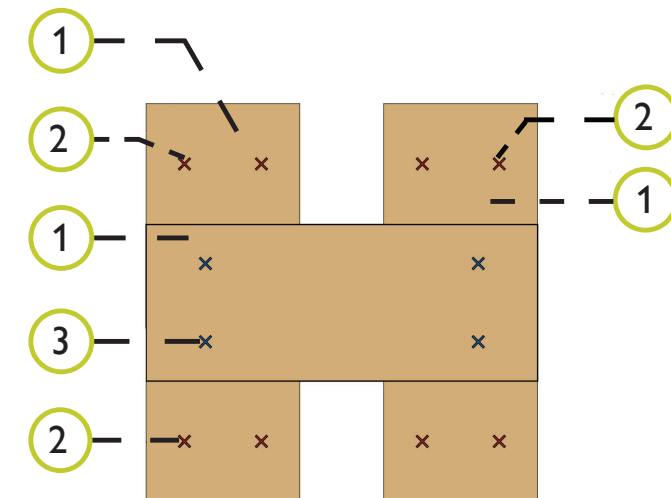
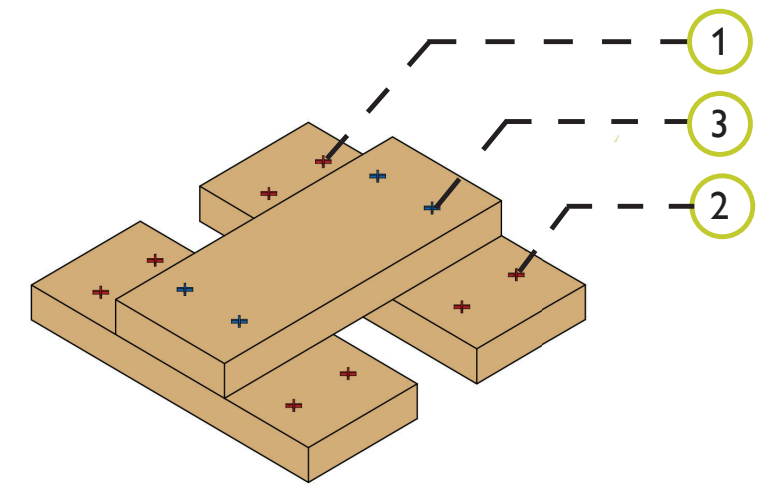
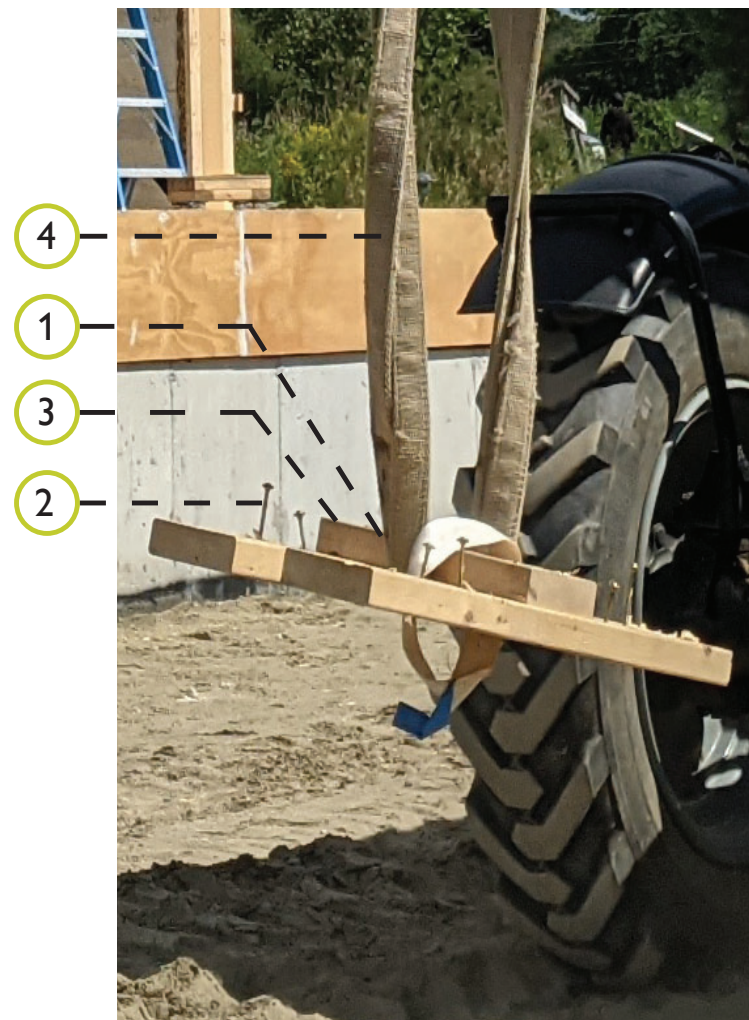
- » DURING UNLOADING, STORAGE AND/OR INSTALLATION, THE PANELS MUST BE FULLY PROTECTED FROM ANY WATER OR PRECIPITATION.
- » THE PANELS MUST BE GUARDED AGAINST DIRECT CONTACT WITH WET GROUND, GRASS OR ANY OTHER SURFACE THAT MAY DAMAGE THEM.
- » SPOT CHECK EVERY 5th TO 10th PANEL DURING UNLOADING TO ENSURE THAT STRAW MOISTURE LEVELS ARE BELOW 20%. CHECK ALL PANELS FOR ANY VISIBLE DAMAGE DUE TO TRANSPORT OR MOISTURE EXPOSURE.
- » WHEN STAGING THE PANELS IN WINDY CONDITIONS, THE PANELS SHOULD BE SECURED TO PREVENT THEM FROM BLOWING OVER OR FALLING DOWN.
- » AT LEAST 500 SQUARE FEET OF FLAT AND PROTECTED SPACE WILL BE REQUIRED TO STORE THE PANELS.
- » FULLY TARP AND WEATHER PROTECT STAGED PANELS





# MOVING PANELS: THE “HAT”

THE “HAT” IS FASTENED TO THE TOP OF THE PANEL, FASTENING DIRECTLY INTO FRAMING. A LIFTING SLING IS FED THROUGH THE GAP OF THE “HAT” AND A SINGLE FORK OF THE TELEHANDLER (OR CRANE HOOK) IS THEN FED THROUGH THE LOOPS.



- 1 2x6
- 2 4" GRK RSS SCREW
- 3 3" GRK RSS SCREW
- 4 100LB+ CAPACITY LIFTING SLING



# TOOLS & MATERIALS

TO ACCURATELY INSTALL PANELS WE SUGGEST THE FOLLOWING TOOLS & MATERIALS:

- » CIRCULAR SAW
- » IMPACT SCREW DRIVER & LONG BIT HOLDER
- » HAMMER
- » CLAMPS
- » LADDER
- » UTILITY KNIFE
- » STAPLER AND STAPLES
- » LONG BIT HOLDER (T-30 SUGGESTED FOR GRKS)
- » MEASURING TAPE
- » PANEL PULLER (RECOMMENDED)
- » SCREWS (AS SPECIFIED IN PLAN SET)
- » RECIPROCATING SAW
- » 6' BOX LEVEL
- » SLEDGE HAMMER
- » PLUMB BOB
- » 1000-5000 LB LIFTING SLINGS (4-6 RECOMMENDED)
- » TELEHANDLER
- » THE "HAT"
- » LADDERS AND/ OR SCAFFOLDING
- » WATERPROOF BUILDING WRAP FOR TOP OF PANEL PROTECTION AFTER INSTALL (24" WIDTH MINIMUM)



# NOTES

- » GIRTS ARE LOCATED EVERY 30” MEASURING UPWARDS FROM THE BOTTOM OF PLYWOOD
- » TRIANGULAR PIECES OF PLYWOOD ARE FASTENED TO THE INTERIOR CORNERS OF PANELS AS AN ADDED LEVEL OF SUPPORT TO ENSURE THEY ARE NOT NUDGED OUT OF SQUARE DURING TRANSPORTATION OR INSTALLATION. THESE SHOULD BE REMOVED AFTER PANELS ARE SECURED IN PLACE.





# ORDER OF INSTALLATION

1. FOUNDATION WALLS, SLAB ON GRADE OR FLOOR BOX
2. TOE UP AND INSULATION INSTALLATION
3. WALL PANEL INSTALLATION

**NOTE:** PROTECT THE TOP OF THE PANELS WITH 24" + WIDE STRIP OF WATERPROOF BUILDING WRAP IN CASE OF ANY WEATHER EVENTS UNTIL THE ROOF IS INSTALLED AND DRIED IN. THE BUILDING WRAP DOES NOT NEED TO BE REMOVED, AND CAN BE TRIMMED FOR FINISHING.



# PANEL TYPES AND LABELING



# TYPICAL PANELS

PANELS ARE SHOWN FROM EXTERIOR.  
MEASUREMENTS OF OPENINGS ARE  
FROM FRAMING. ALL PANELS ARE  
MARKED ACCORDING TO DIRECTIONAL  
ORIENTATION.

PANELS ARE GIVEN TWO KINDS OF TAGS  
TO INDICATE WHERE AND WHAT KIND

LOCATION MARK:

N# = NORTH WALL

E# = EAST WALL

S# = SOUTH WALL

W# = WEST WALL

TYPE MARK:

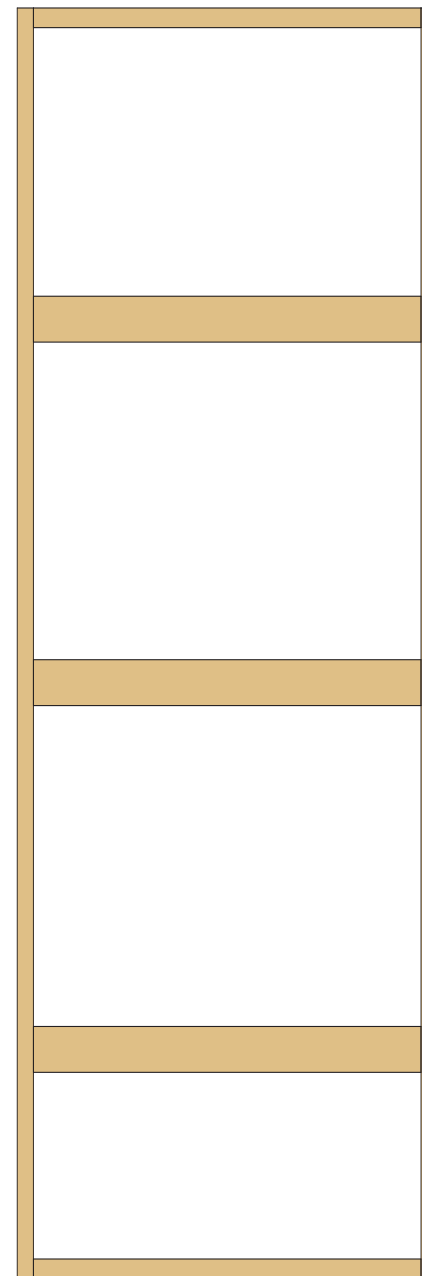
P = PANEL

SP = SILL PANEL

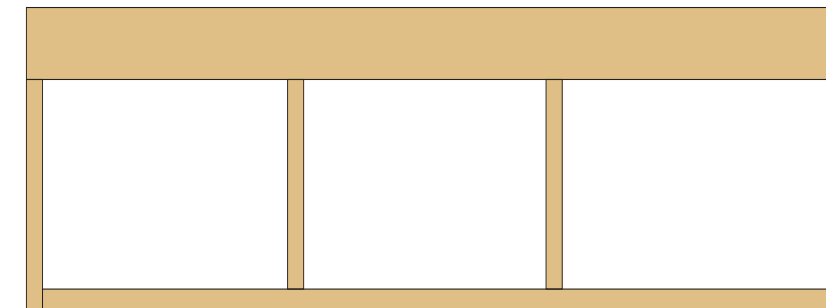
HP = HEADER PANEL

BC= BOX COLUMN

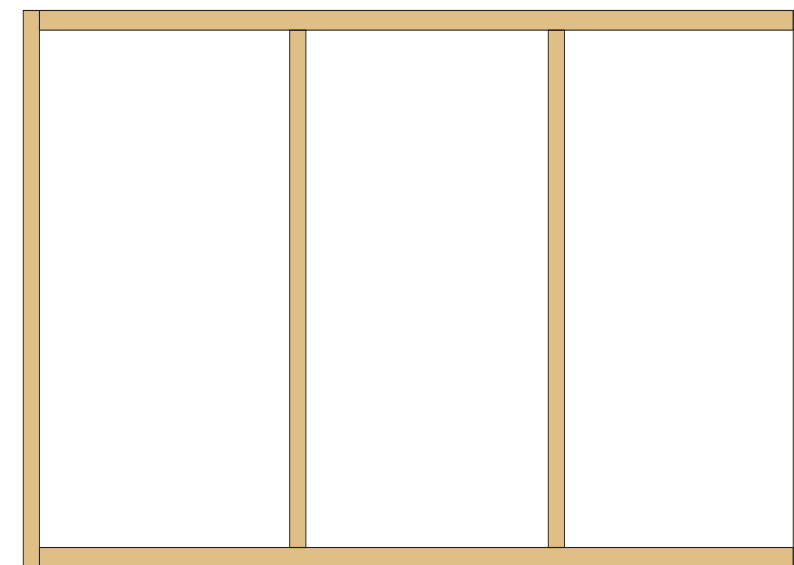
**STANDARD  
PANEL**



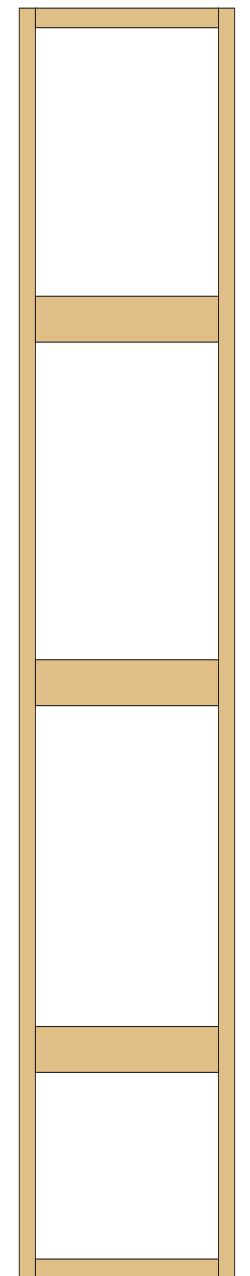
**HEADER  
PANEL**



**SILL  
PANEL**



**BOX  
COLUMN**

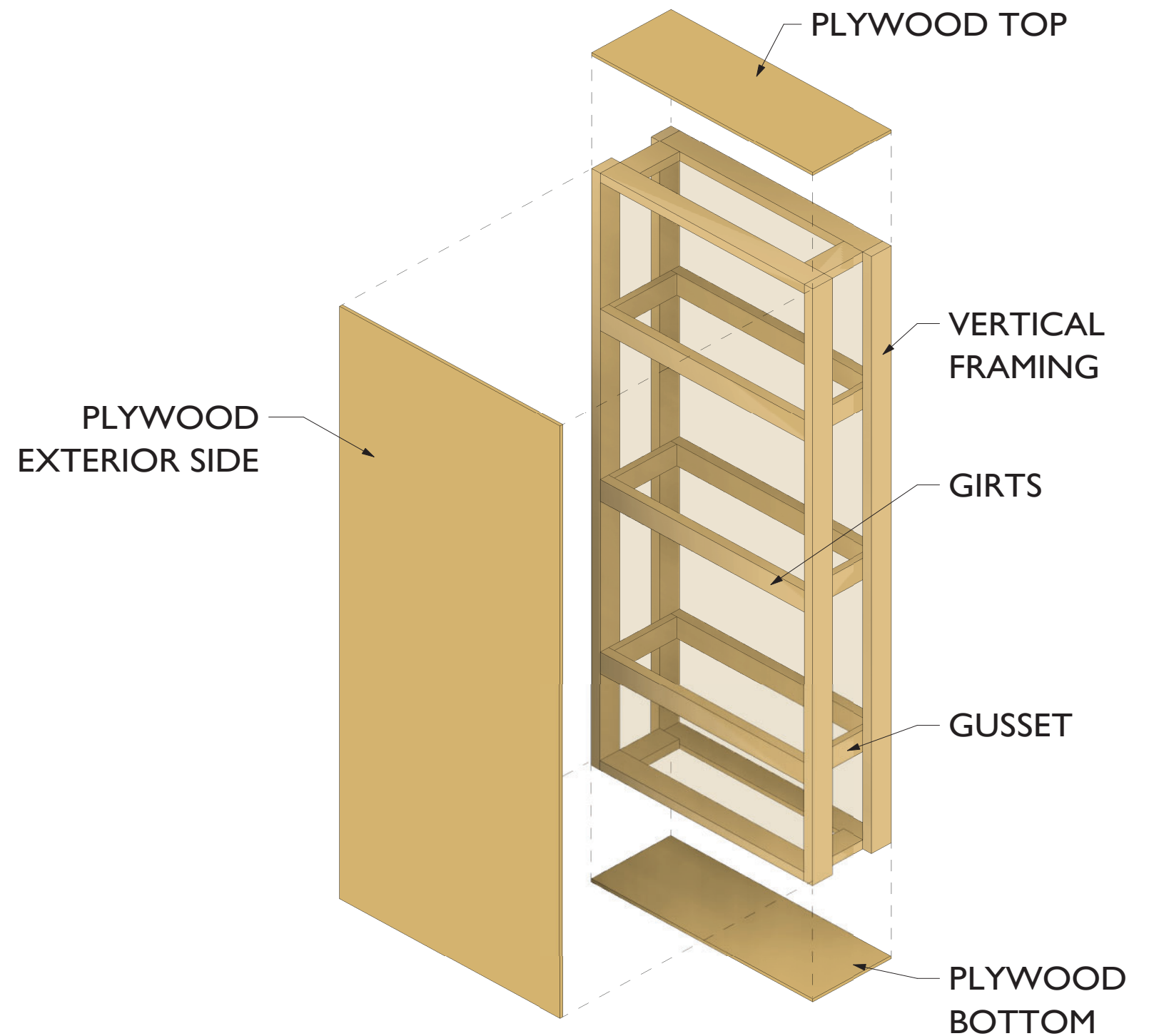




# STANDARD PANELS

## WILL BE MARKED AS:

- P = STANDARD PANEL
- PR = PANEL RIGHT CORNER
- PL = PANEL LEFT CORNER



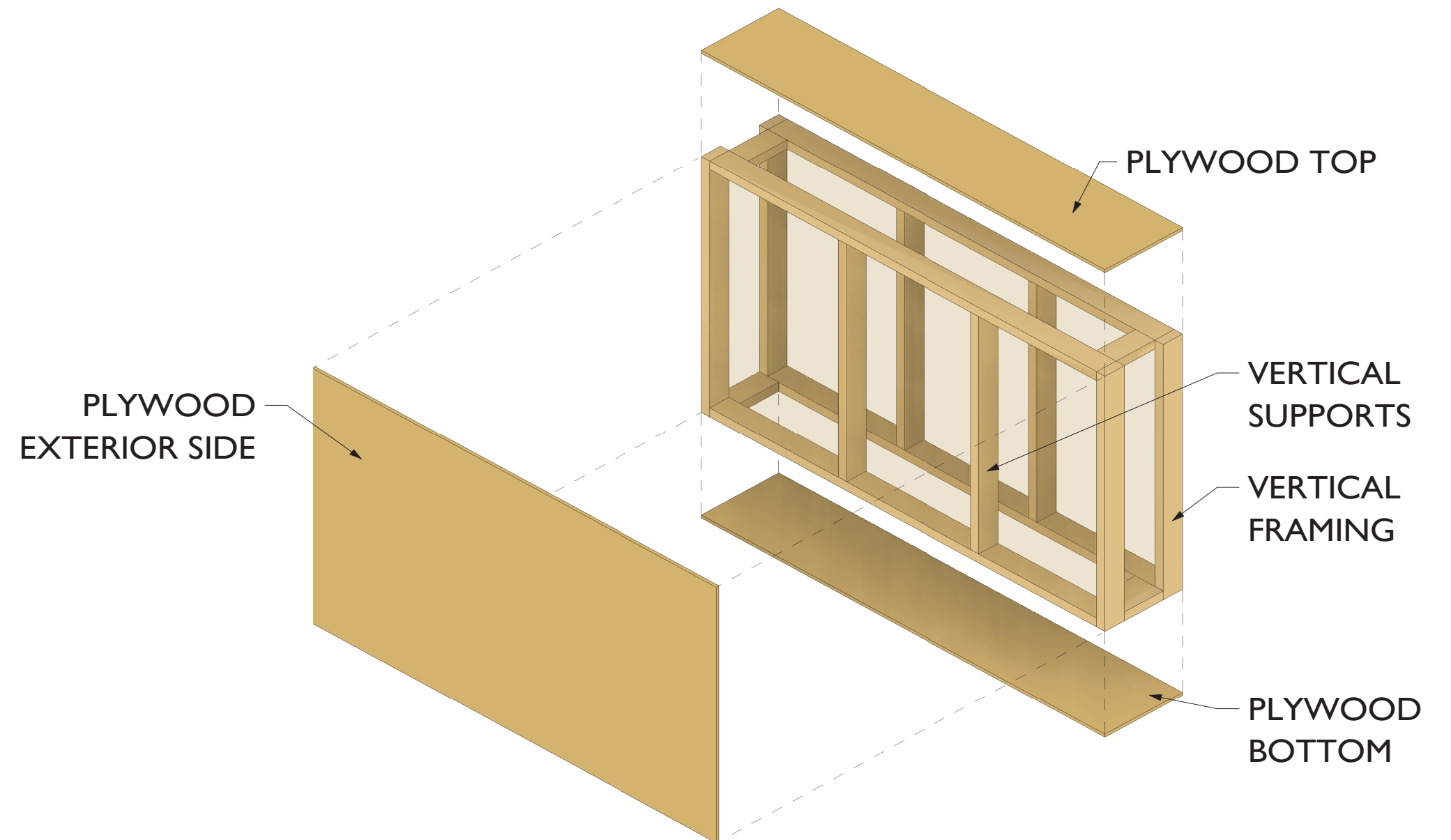
ADDITIONAL FRAMING MAY BE ADDED TO PANELS AND ARE NOT SHOWN HERE.



# SILL PANELS

**WILL BE MARKED AS:**

SP = SILL PANEL



PANELS WIDER THAN 48" WILL HAVE VERTICAL SUPPORTS.

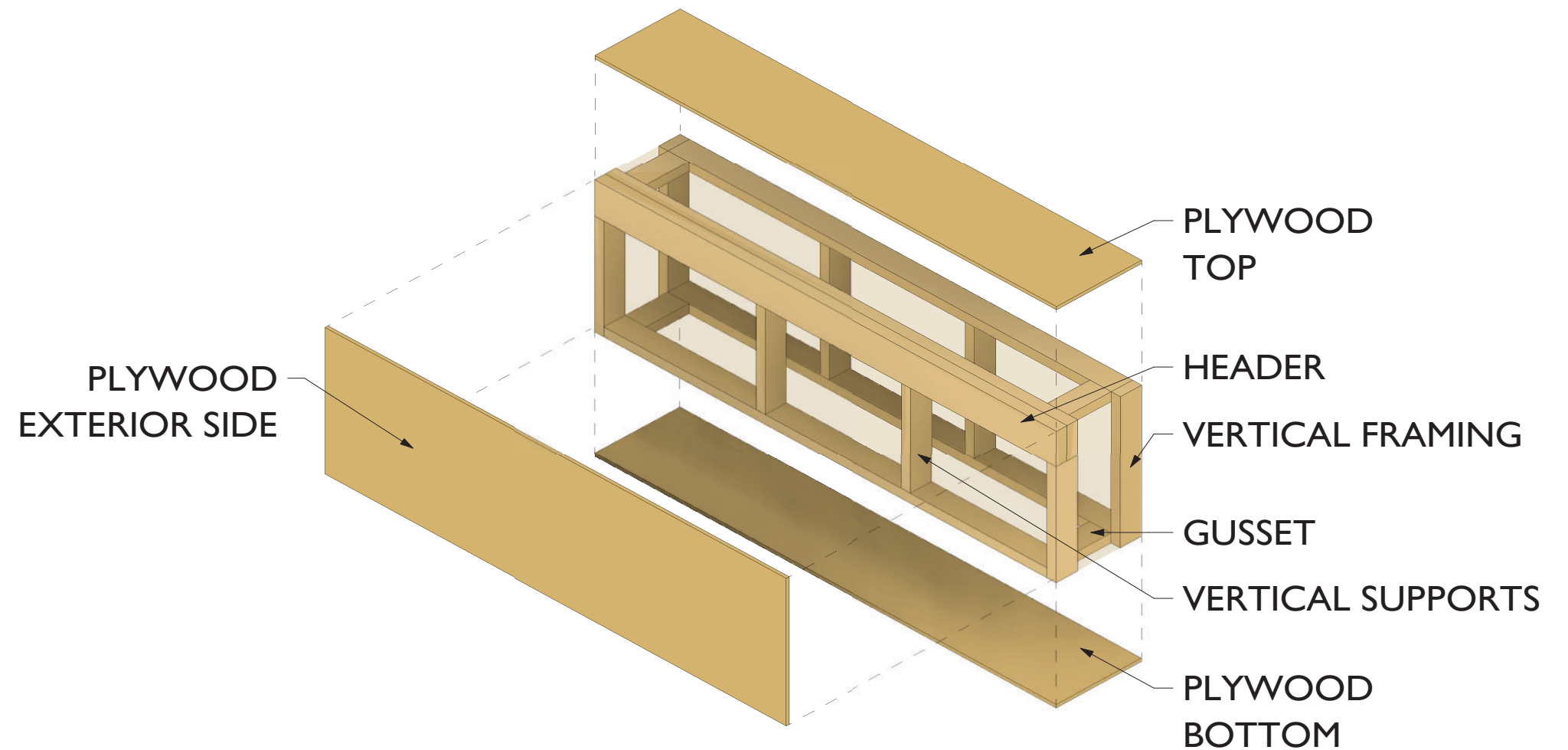
ADDITIONAL FRAMING MAY BE ADDED TO PANELS AND ARE NOT SHOWN HERE.



# HEADER PANELS

**WILL BE MARKED AS:**

HP = HEADER PANEL



PANELS WIDER THAN 48" WILL HAVE VERTICAL SUPPORTS.

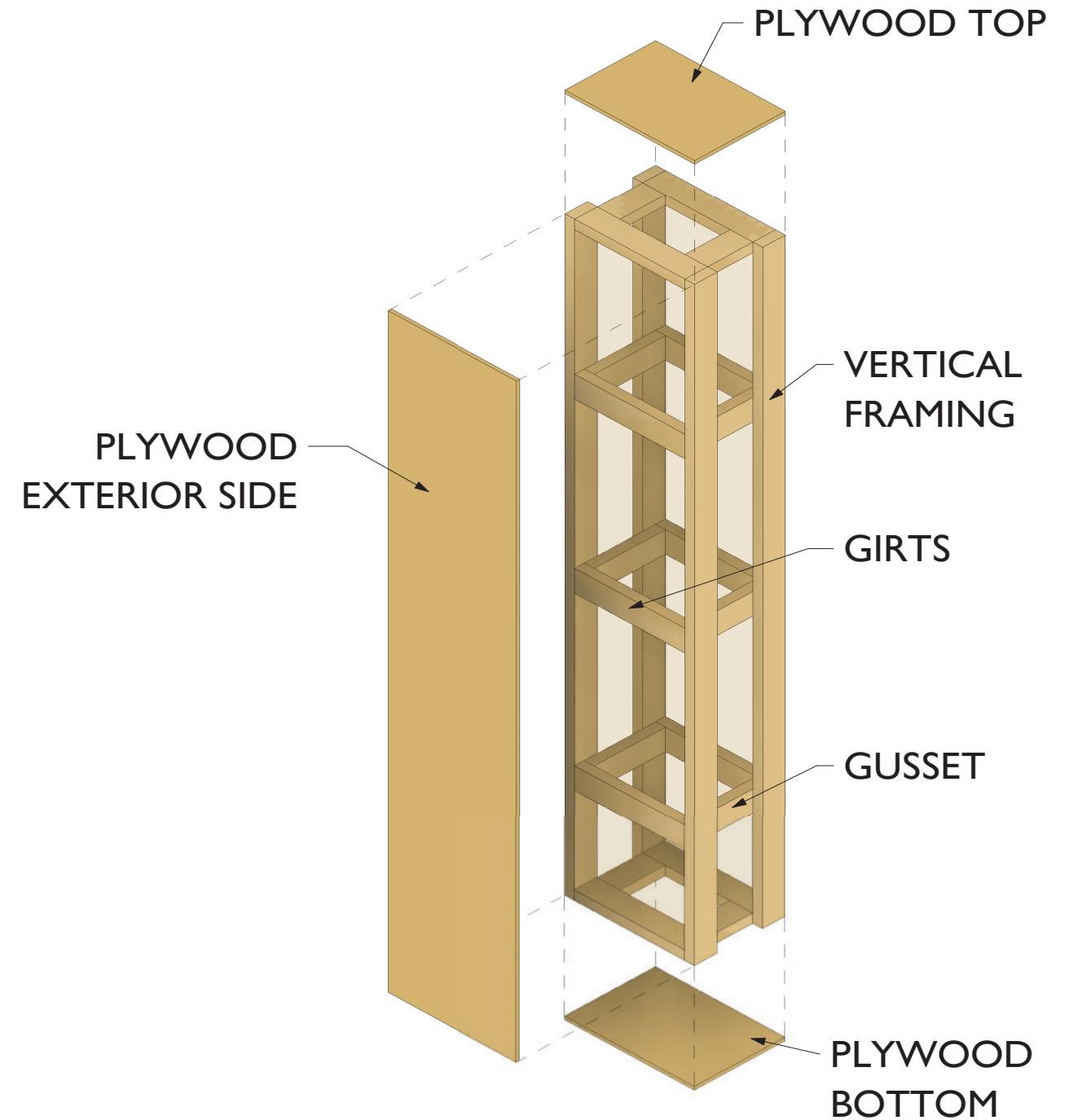
ADDITIONAL FRAMING MAY BE ADDED TO PANELS AND ARE NOT SHOWN HERE.



# BOX COLUMNS

**WILL BE MARKED AS:**

BC = BOX COLUMN



ADDITIONAL FRAMING MAY BE ADDED TO PANELS AND ARE NOT SHOWN HERE.



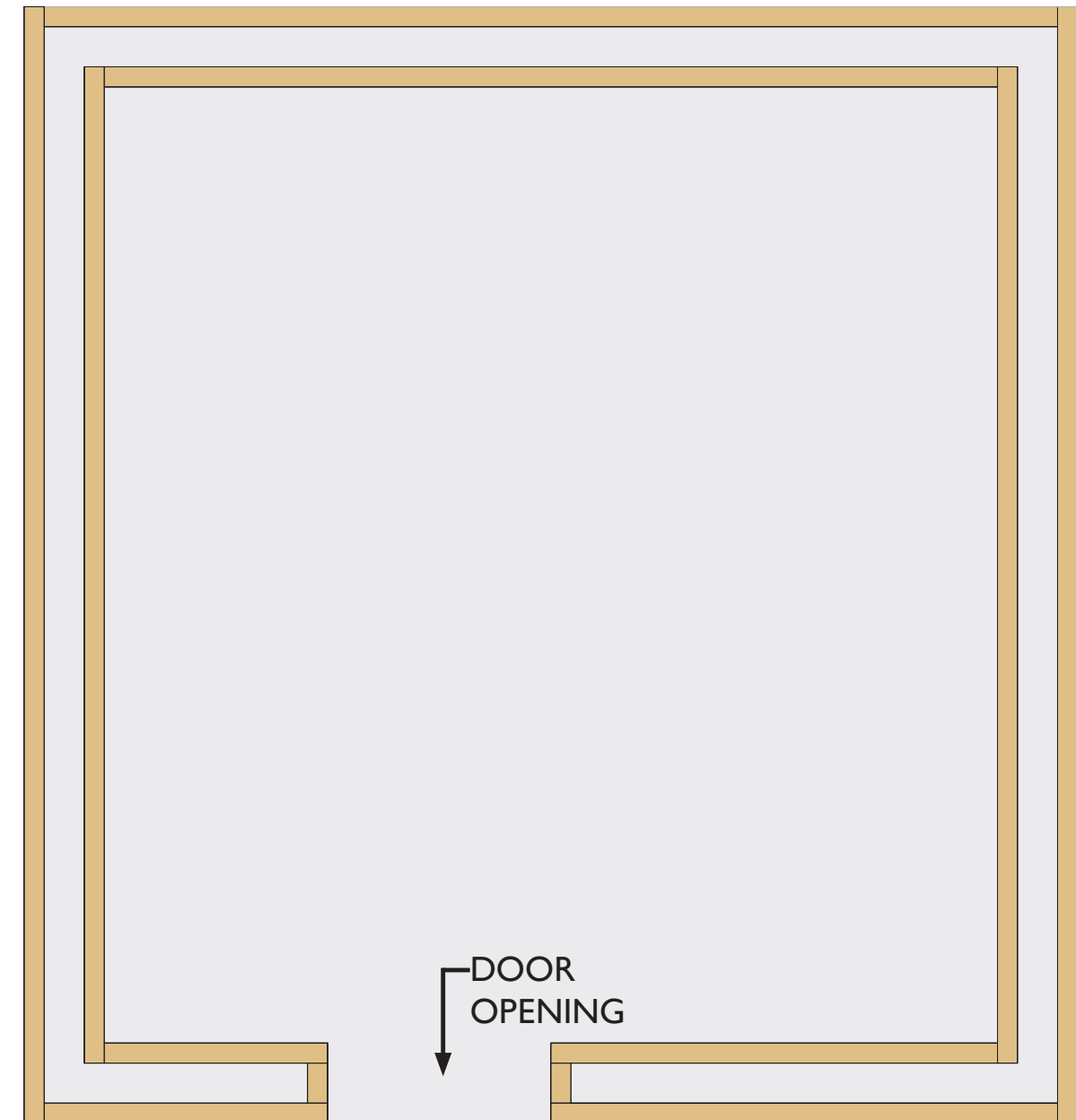
# TOE UP





# TOE UP - LAYOUT

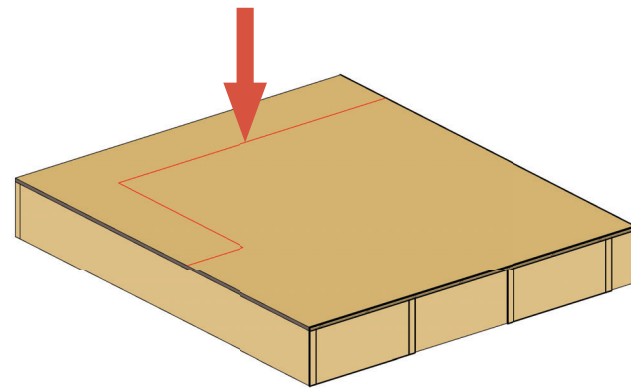
- » THE TOE UP IS TO BE INSTALLED ON THE SUB FLOOR DECKING. IT SHOULD BE FASTENED INTO PLACE WITH CONTINUOUS CAULK AND SPECIFIED ANCHORS (SEE PLAN SET FOR DETAILS).
- » THE TOE UP IS CONSTRUCTED WITH 2x4 LUMBER.
- » THE TOE UP SHOULD BE INSTALLED 100% LEVEL PRIOR TO PANEL INSTALLATION. 100% LEVEL MEANS WITHIN 1/8" OF LEVEL ALONG THE ENTIRETY OF BOTH INSIDE AND OUTSIDE PLATE. SHIM WHERE NEEDED.
- » THE TOE UP RUNS THE PERIMETER OF THE BUILDING AND MUST MEET THE BUILDING DIMENSIONS SPECIFIED IN THE PLAN SET.
- » MARK ON THE TOE UP WHERE ROUGH OPENINGS ARE. THESE WILL PROVIDE BENCHMARKS FOR THE PANEL INSTALLATION. MEASUREMENTS ARE TO THE OUTSIDE OF ROUGH OPENINGS (SEE PLAN SET FOR DIMENSIONED LOCATIONS).



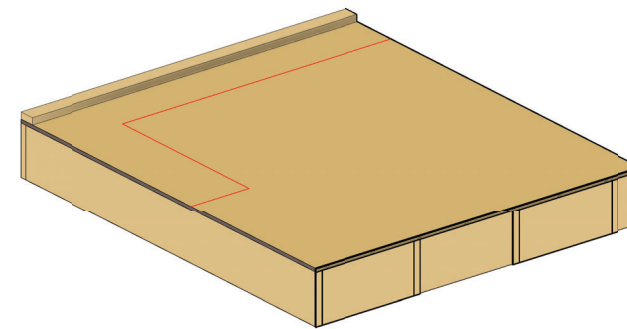


# TOE UP - INSTALLATION DIAGRAMS

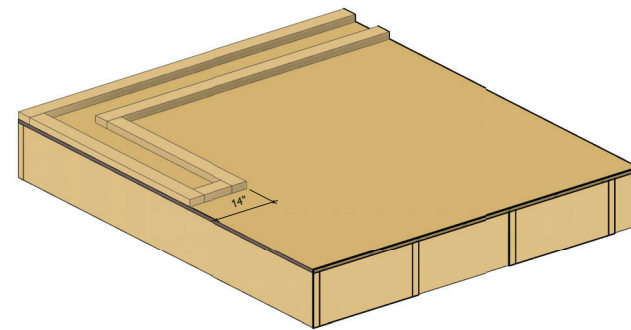
- 1** MEASURE PERIMETER AND MARK TOE UP LOCATION. MARK BREAKS FOR WALL OPENINGS.



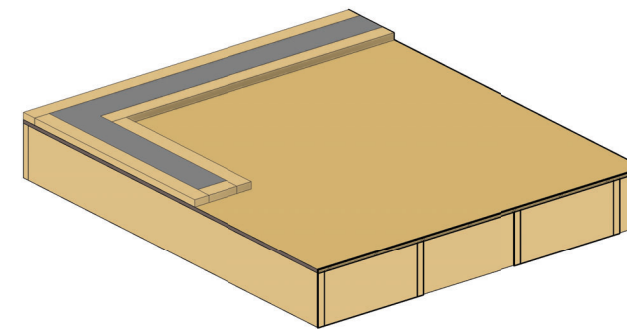
- 2** RUN A CONTINUOUS BEAD OF FLEXIBLE ELASTOMERIC CAULK ALONG THE FLOOR UNDER EACH OF THE TOE UP PIECES. START FASTENING THE EXTERIOR TOE UP TO FLOOR STRUCTURE. EXTERIOR FACE OF FRAMING NEEDS TO BE FLUSH WITH EDGE OF SUB FLOOR (SEE DETAIL ON PAGE 19). LEAVE A GAP AT OPENINGS.



- 3** CONTINUE WITH FASTENING THE INTERIOR SIDE OF TOE UP. EXTERIOR FACE OF TOE UP TO INTERIOR FACE OF TOE UP SHOULD MEASURE 14"



- 4** INSTALL INSULATION BETWEEN TOE UP FRAMING.



SEE PLAN SET FOR CONNECTION SCHEDULES, FASTENER TYPES, AND SPACING

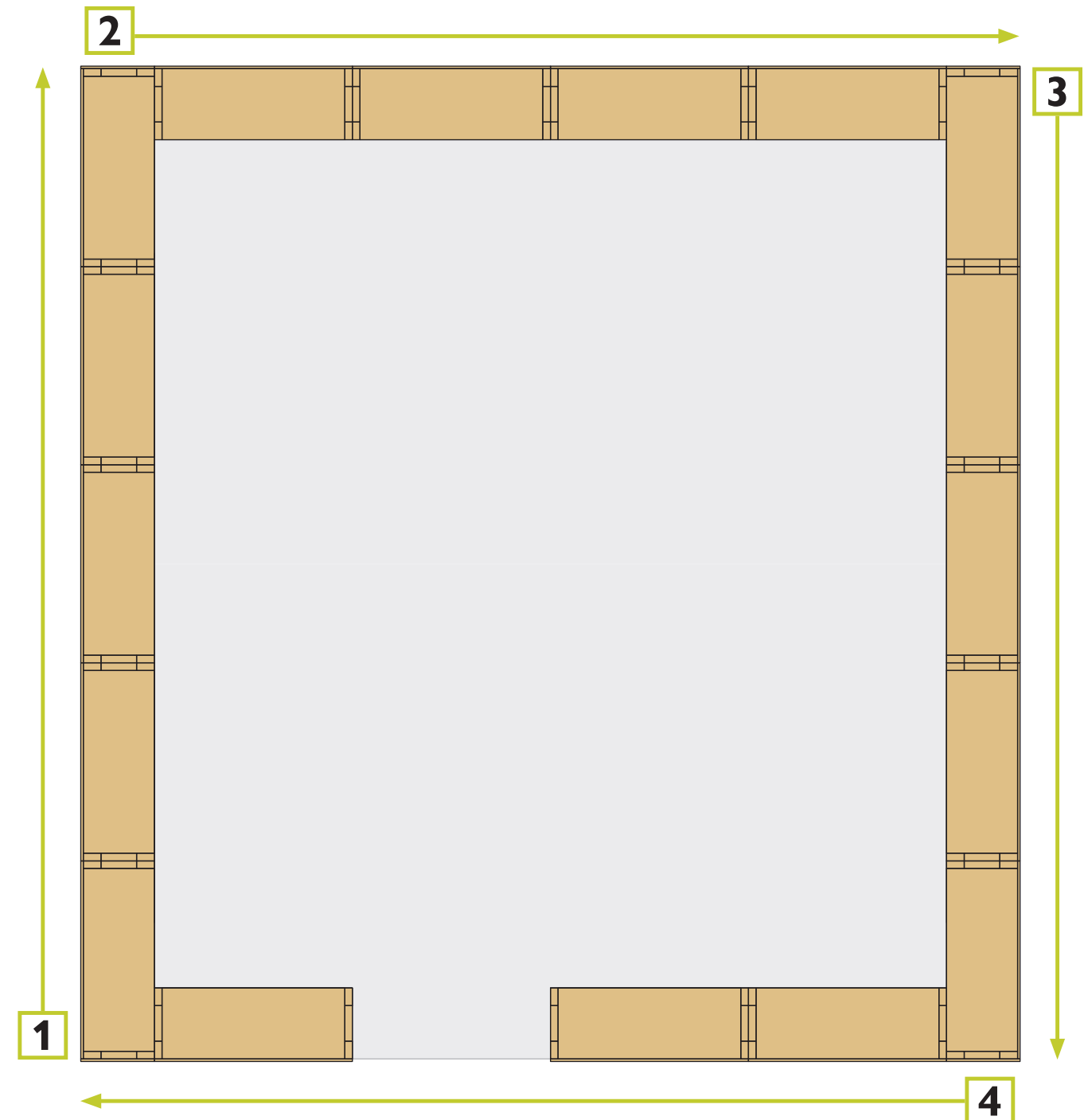


# PANEL LAYOUT & INSTALLATION



# PANEL INSTALL SEQUENCE

- » LAYOUT ON TOE UP WHERE PANELS WILL LAND, PARTICULARLY WALL OPENINGS. USE WALL OPENINGS AS BENCHMARK FOR INSTALLATION.
- » PANELS SUGGESTED TO BE INSTALLED IN THE FOLLOWING ORDER AND DIRECTION. HOWEVER; WE SUGGEST WORKING FROM THE LEAST ACCESSIBLE CORNER TO THE MOST ACCESSIBLE CORNER, WHICH WILL NEED TO BE DETERMINED ON SITE.
- » WE HAVE ACCOUNTED FOR A 1/2" SAFETY GAP IN FOUR PANELS (N-W6, N-E2, S-W5 AND S-E2). THESE PANELS WILL HAVE AN EXTRA STRIP OF PLYWOOD (1/2"). THAT PIECE OF PLYWOOD CAN BE REMOVED IF THE WALL STICKS OUT PAST THE TOE-UP. THE PLYWOOD CAN BE REPLACED WITH A PIECE OF THINNER MATERIAL. THE PANEL WALL SHOULD BE FLUSH TO THE END OF THE TOE-UP ALL THE WAY AROUND.

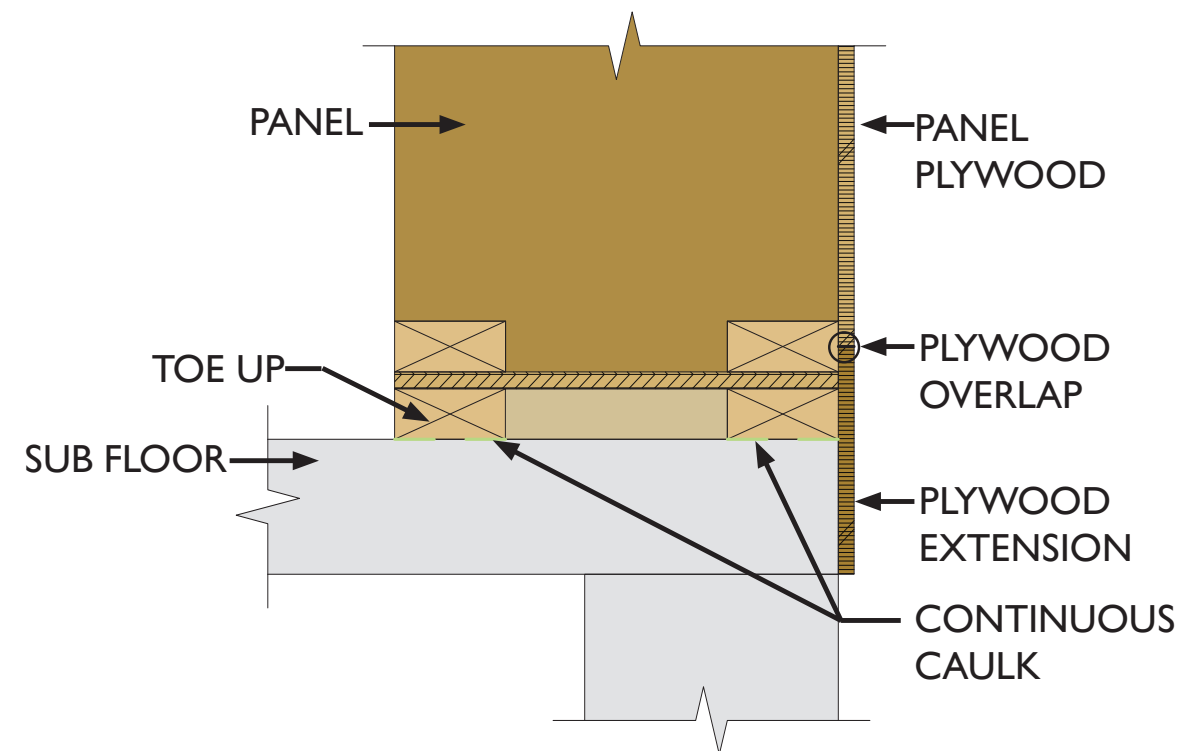


**NOTE:** THIS IS A SUGGESTED SEQUENCE. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR THE FINAL SEQUENCING DECISION.

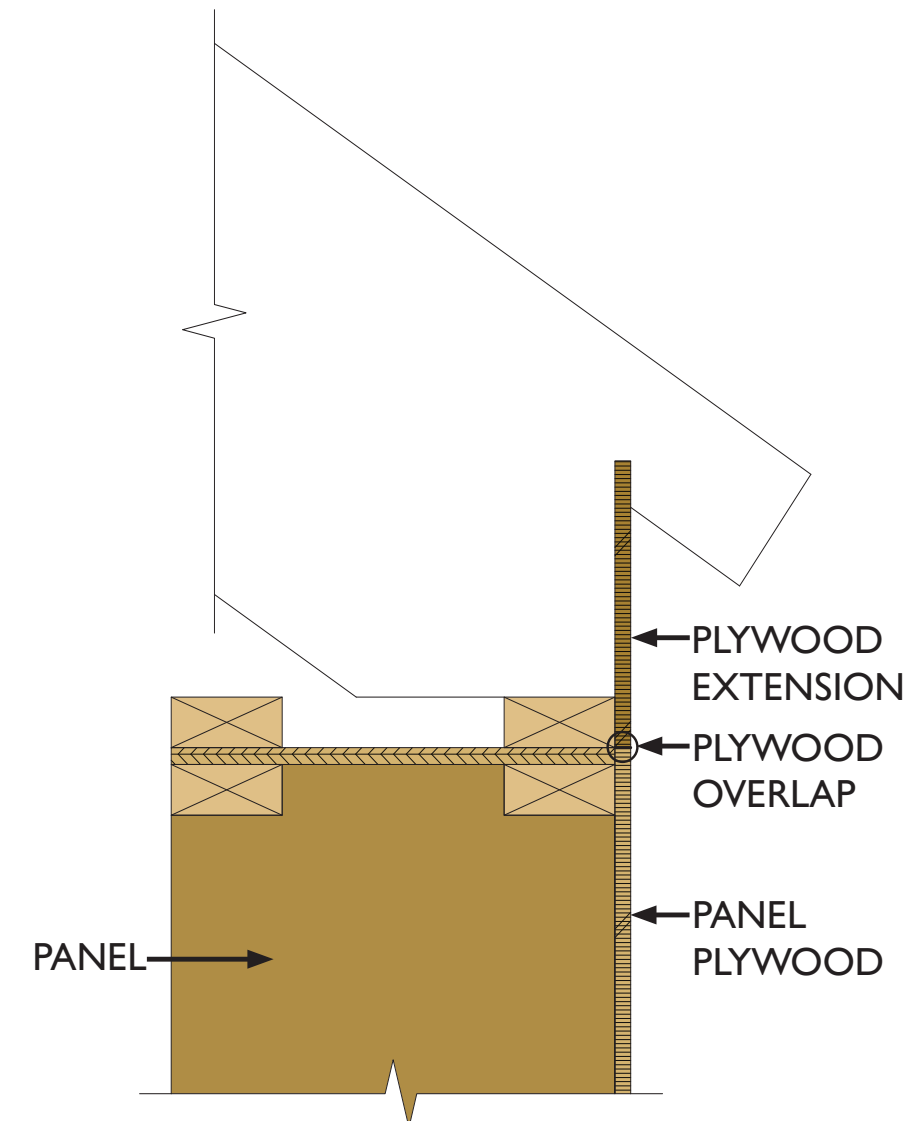


# PANEL LAYOUT - SECTIONS

## BOTTOM OF PANEL CONNECTION



## TOP OF PANEL CONNECTION



PANELS SHOULD SIT ON TOE UP LEVEL AND PLUMB.



# PLACING PANELS

## RECOMMENDED MATERIALS & TOOLS:

- » CRANE OR TELEHANDLER WITH FORKS CAPABLE OF BEING 4'-8" APART
- » TEMPORARY SHORING (I.E. 2x4'S AND STRUCTURAL SCREWS)
- » 6' BOX LEVEL
- » SLEDGE HAMMER (FOR CLOSING GAPS)
- » IMPACT DRIVER
- » SKILL SAW
- » LIFTING SLING
- » THE "HAT"
- » PANEL PULLER

## PROCESS:

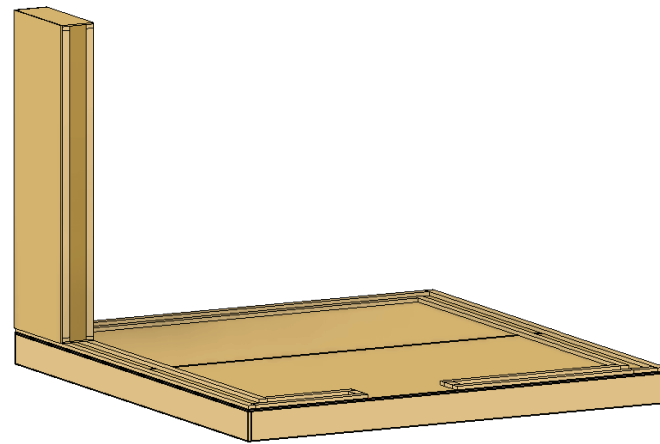
- » WHILE PANEL IS IN STACK, INSTALL "HAT" SECURELY ONTO TOP OF PANEL BY FASTENING INTO FRAMING USING TELEHANDLER AND LIFT STRAPS. CAREFULLY LIFT THE PANEL TO VERTICAL AND SET PANEL IN PLACE ONTO TOE UP.
- » TAP INTO PLACE USING SLEDGE HAMMER AND TEMPORARILY FASTEN PANEL TO TOE UP, ENSURE PANEL IS PLUMB IN BOTH DIRECTIONS, THEN FASTEN PERMANENTLY IN PLACE ACCORDING TO PANEL CONNECTION SPECIFICATIONS.
- » USE DIAGONAL BRACING DOWN TO FLOOR WHERE NECESSARY FOR EXTRA SUPPORT.



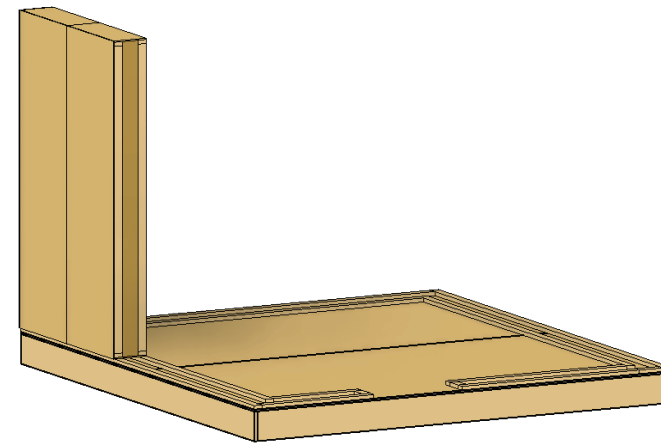


# PANEL LAYOUT - ASSEMBLY

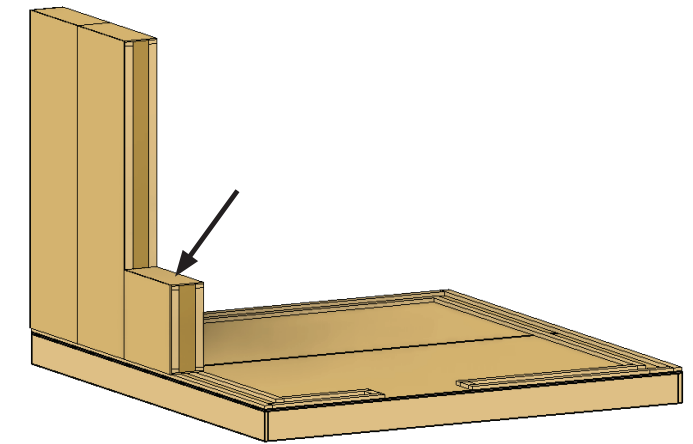
**1** INSTALL FIRST PANEL. REFERENCE PANEL INSTALL SEQUENCE ON PAGES 18 FOR SUGGESTED ORDER AND DIRECTION TO BUILD.



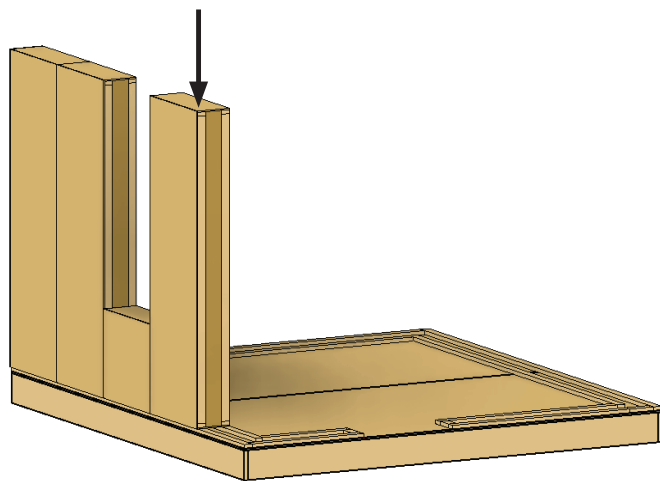
**2** INSTALL SECOND PANEL. PANELS AND TOE UP BREAKS SHOULD ALIGN. TO BETTER STAY ON LAYOUT, USE A PANEL PULLER TO SUCK PANELS TIGHT TOGETHER BEFORE FASTENING.



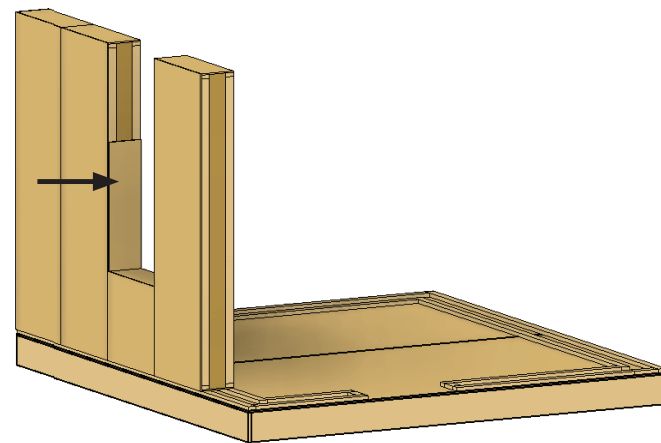
**3** WHEN YOU REACH A WINDOW OPENING, FIRST INSTALL SILL PANEL.



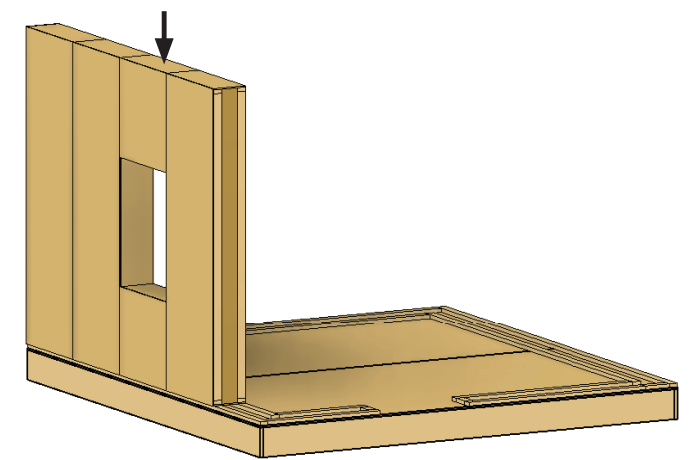
**4** INSTALL NEXT FULL HEIGHT PANEL.



**5** INSTALL BOTH WINDOW JACKS.



**6** INSTALL HEADER PANEL ON TOP OF WINDOW JACKS.

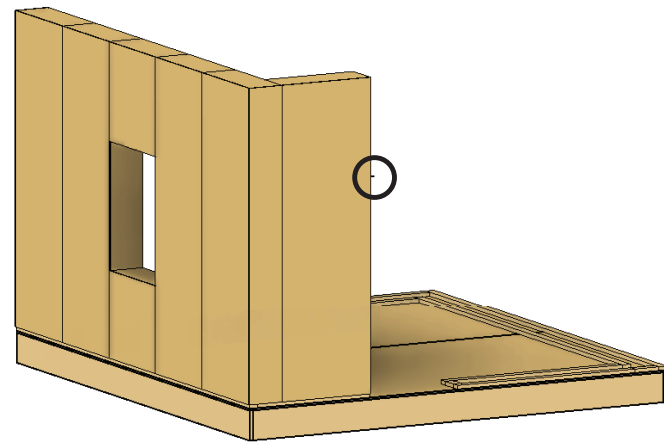


**NOTE:** IT IS VERY IMPORTANT CORNER PANELS ARE PRECISELY PLUMBED BECAUSE THEY ARE THE BASE POINT FOR THE SUBSEQUENT PANELS ON THAT WALL.

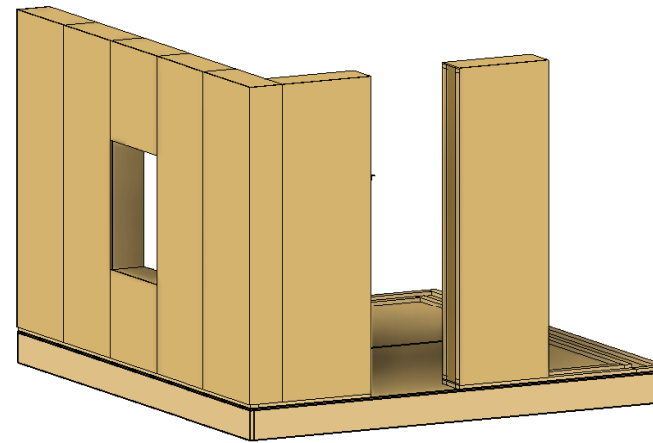


# PANEL LAYOUT - ASSEMBLY

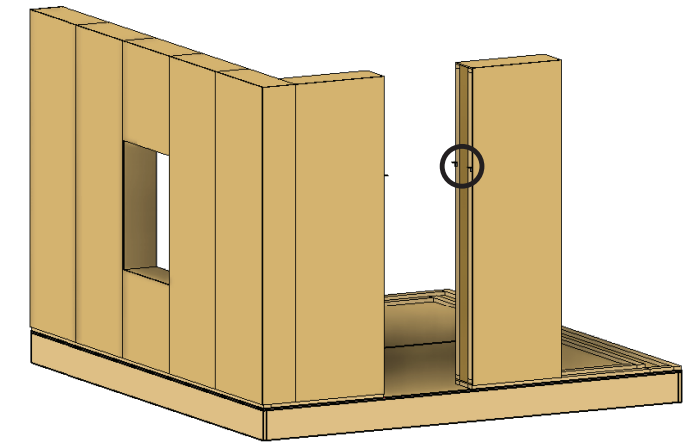
**7** WHEN YOU REACH A DOOR OPENING, INSTALL FIRST PAIR OF SIMPSON CLIPS TO FULL HEIGHT PANEL.



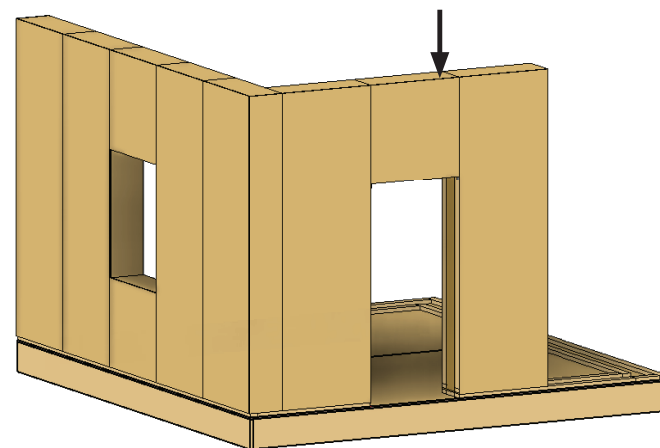
**8** INSTALL SECOND FULL HEIGHT PANEL.



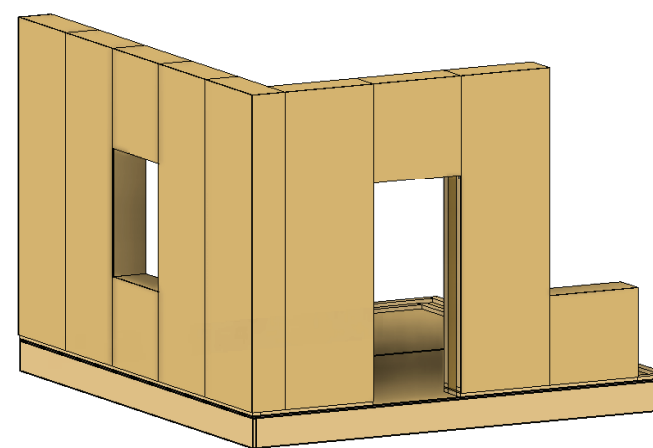
**9** INSTALL SECOND PAIR OF SIMPSON CLIPS TO SECOND FULL HEIGHT PANEL.



**10** INSTALL HEADER ON TOP OF SIMPSON CLIPS.



**11** MOVE ONTO NEXT AS NOTED ON PAGE 18. USE DIAGONAL BRACING AND TIE ACROSS TOP OF PANELS AS NEEDED TO KEEP PANELS PLUMB.



**NOTE:** IT IS VERY IMPORTANT CORNER PANELS ARE PRECISELY PLUMBED BECAUSE THEY ARE THE BASE POINT FOR THE SUBSEQUENT PANELS ON THAT WALL.





# **BUILDING PERFORMANCE AND CARE**



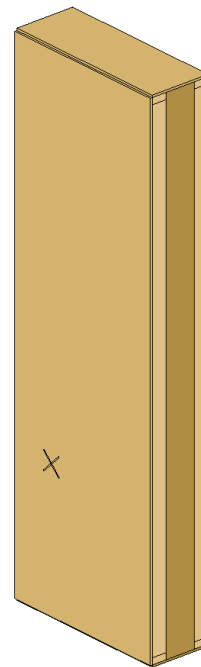
# PENETRATION DETAILS

USE THIS SHEET AS REFERENCE FOR PENETRATIONS SIZING 1" TO 3" (THIS INCLUDES, BUT IS NOT LIMITED TO: HOSE BIBS, GAS LINES, REFRIGERATOR LINES, ELECTRICAL, AND IT/AV/CAT/ CONDUIT)

## 1 LOCATE & MARK THE PENETRATION:

- ON THE EXTERIOR SHEATHING, MARK THE CENTER OF THE PENETRATION.

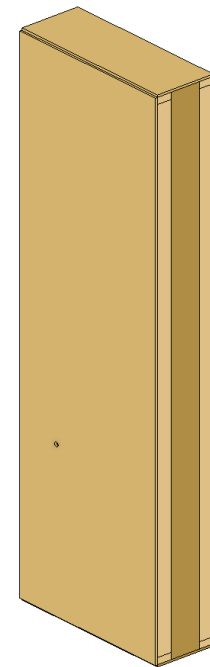
\* BE SURE TO STAY CLEAR OF **ALL** PANEL FRAMING. CHECK THE PLAN SET FOR NOTES OF ANY ADDITIONAL INTERNAL FRAMING IN THE PANEL, AND VISUALLY CHECK THE EXTERIOR & INTERIOR OF THE PANEL



## 2 DRILL THROUGH THE SHEATHING & STRAW:

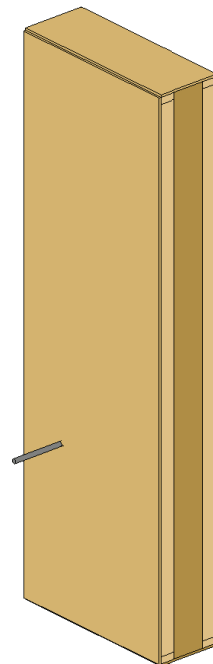
- AUGER BIT RECOMMENDED TO CREATE THE HOLE, SIZED TO THE DIMENSION OF THE PENETRATION UNIT.
- HOLE SHOULD SLIGHTLY PITCH TOWARD EXTERIOR SIDE.

\* DRILLED HOLE SHOULD BE NO MORE THAN 1/8" LARGER THAN THE PENETRATING UNIT. RECOMMEND CHECKING FIT BEFORE DRILLING THROUGH STRAW.



## 3 INSTALLING PVC:

- INSTALL THE CONDUIT OR LINE
- IF THE HOLE IS THE SAME SIZE AS THE CONDUIT, THEN SIMPLY INSTALL THROUGH THE PANEL.
- IF THE HOLE IS LARGER THAN THE CONDUIT, ANY DISPLACED INSULATION WILL NEED TO BE REPLACED WITH BATTING DURING INSTALL.
- IF YOUR BUILD SEQUENCE INSTALLS THE AIR BARRIER BEFORE THE PVC, THEN CUT AN "X" IN THE BARRIER JUST ENOUGH TO FOLD BACK THE FLAPS AND ACCESS THE HOLE

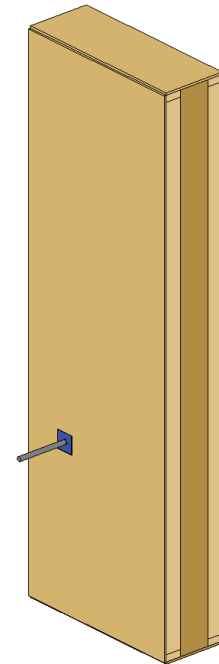


## 4 SEAL THE PENETRATION:

- ON BOTH THE INTERIOR & EXTERIOR, TAPE THE AIR BARRIERS TO THE CONDUIT COMPLETELY, USING TESCON VANA AIR SEALING TAPE OR COMPARABLE. IF YOU ARE USING A MEMBRANE FOR EITHER AIR BARRIER, YOU CAN OPT TO PURCHASE AIR SEALING PATCHES THROUGH 475 BUILDING SUPPLY.
- IF USING A SLEEVE, INSULATE AROUND LINE(S) INSIDE SLEEVE WITH ONE-PART SPRAY FOAM. SEE PLUMBING DRAWINGS FOR SLEEVE SPECIFICATIONS.

\*FOR GAS LINE: IT IS ACCEPTABLE TO RUN LINE DIRECTLY THROUGH WALL AND SEAL TO BOTH SIDES

\*ELECTRICAL: SAME EXCEPTION AS GAS LINE PERMITTED. USE CONDUIT AS PER HOSE BIB UPON REQUIREMENT BY LOCAL ELECTRICAL INSPECTOR





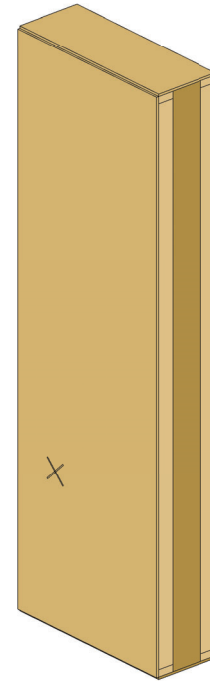
# PENETRATION DETAILS CONTINUED

USE THIS SHEET AS REFERENCE FOR PENETRATIONS SIZING 4" TO 8" (THIS INCLUDES, BUT IS NOT LIMITED TO: DRYER DUCTS, FRESH AIR INTAKES, EXHAUST AIR, AND BATH VENTS)

## 1 LOCATE & MARK THE PENETRATION:

- ON THE EXTERIOR SHEATHING, MARK THE CENTER OF THE PENETRATION.
- MARK THE PERIMETER OF THE PENETRATION WITH SPRAY PAINT.

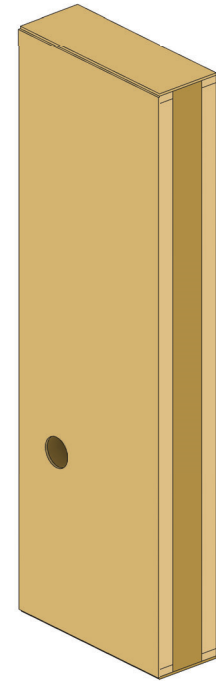
\* BE SURE TO STAY CLEAR OF **ALL** PANEL FRAMING. CHECK THE PLAN SET FOR NOTES OF ANY ADDITIONAL INTERNAL FRAMING IN THE PANEL, AND VISUALLY CHECK THE EXTERIOR & INTERIOR OF THE PANEL



## 2 CUT/BORE THROUGH THE SHEATHING & STRAW:

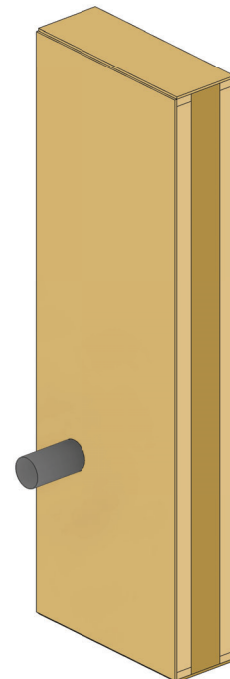
- USE A HOLE SAW TO CUT THROUGH THE SHEATHING
- WITH THE HOLE SAW ON A DRILL BIT EXTENSION, CONTINUE DRILLING THROUGH THE STRAW.
- HOLE SHOULD SLIGHTLY PITCH TOWARD EXTERIOR SIDE.

\* THE HOLE SAW SHOULD BE NO MORE THAN 1/8" LARGER THAN THE DUCT/ PIPE. RECOMMEND CHECKING FIT BEFORE DRILLING THROUGH STRAW.



## 3 INSTALLING DUCT/ PIPE:

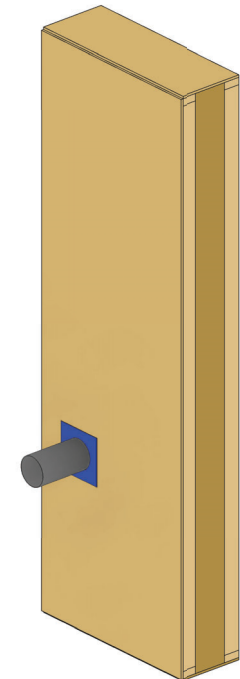
- IF THE HOLE IS THE SAME SIZE AS THE DUCT/ PIPE, THEN SIMPLY INSTALL THROUGH THE PANEL.
- IF THE HOLE IS LARGER THAN THE DUCT, ANY DISPLACED INSULATION WILL NEED TO BE REPLACED WITH BATTING DURING INSTALL.
- IF YOUR BUILD SEQUENCE INSTALLS THE AIR BARRIER BEFORE THE DUCTING, THEN CUT AN "X" IN THE BARRIER JUST ENOUGH TO FOLD BACK THE FLAPS AND ACCESS THE HOLE



## 4 SEAL THE PENETRATION:

- ON BOTH THE INTERIOR & EXTERIOR, TAPE THE AIR BARRIERS TO THE DUCT COMPLETELY, USING TESCON VANA AIR SEALING TAPE OR SIMILAR. IF YOU ARE USING A MEMBRANE FOR EITHER AIR BARRIER, YOU CAN OPT TO PURCHASE AIR SEALING PATCHES THROUGH 475 BUILDING SUPPLY.

\*FRESH AIR INTAKE: PARTICULAR ATTENTION TO FULLY PACKING INSULATION AROUND DUCT AND AIR-SEALING BOTH SIDES; SEE MECHANICAL DRAWINGS FOR DAMPER SPECIFICATIONS INBOARD OF THE PANEL



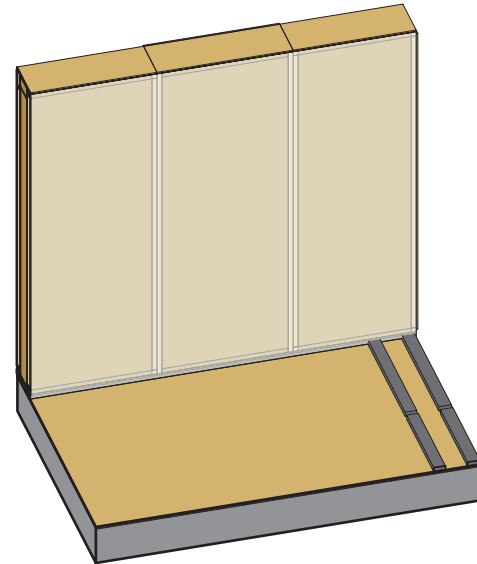
### NOTE:

- ANY PENETRATION ACCEDING 8" NEEDS TO BE COORDINATE WITH THE DESIGN TEAM SO THEY CAN MAKE APPROPRIATE ACCOMMODATIONS.

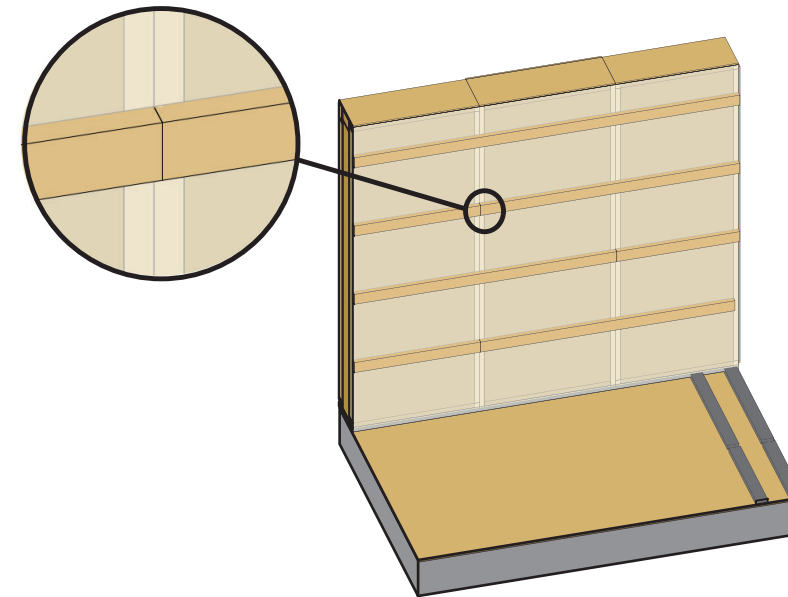


# HORIZONTAL STRAPPING DETAILS

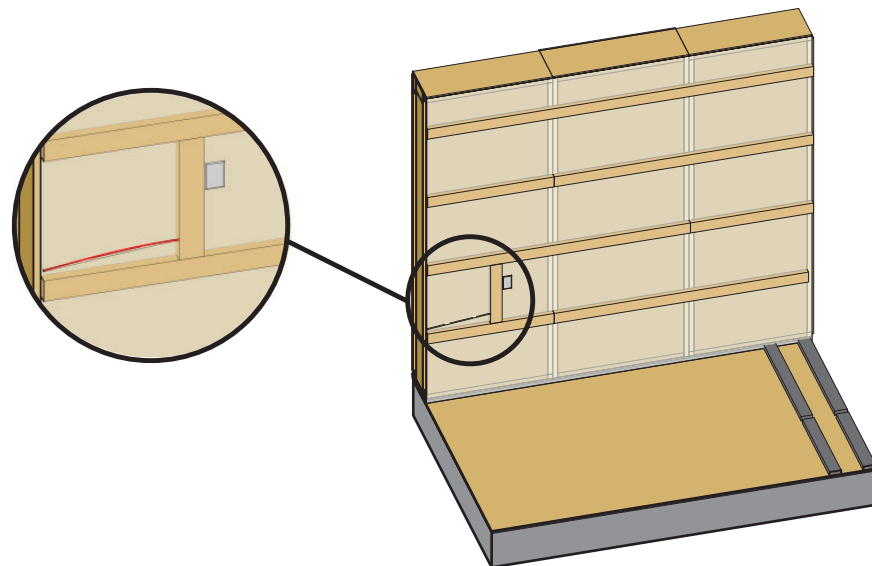
**1** SEAMS ARE CREATED WHEN A PANEL IS CONNECTED TO ANOTHER PANEL. **THE AIR BARRIER NEEDS TO BE IN PLACE BEFORE STRAPPING CAN START.**



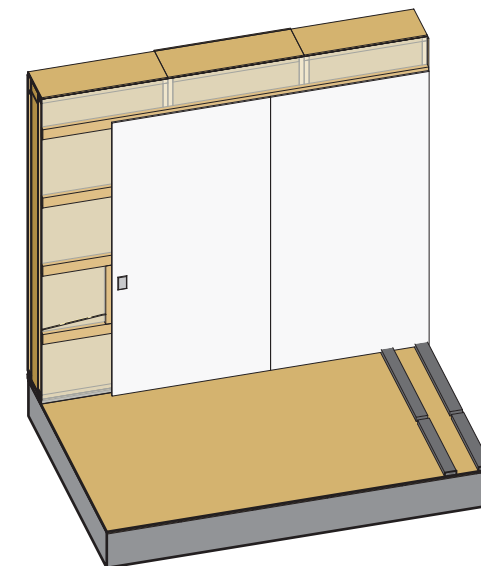
**2** FASTEN HORIZONTAL STRAPPING TO THE EXPOSED 2x4 PANEL STUDS. STRAPPING BREAKS NEED TO BE CENTERED ON PANEL BREAKS.



**3** ONCE STRAPPING IS INSTALLED, YOU CAN RUN WIRE BETWEEN HORIZONTAL STRAPPING. INSTALL VERTICAL BLOCKING FOR ELECTRICAL BOX ATTACHMENTS.



**4** APPLY FINISHES AS SPECIFIED.





# PROTECTION AFTER INSTALLATION

- » IT IS CRITICAL THAT AFTER THE PANELS ARE ALL INSTALLED THAT TEMPORARY COVER BE APPLIED TO THE TOPS OF PANELS. AT MINIMUM, A 24" WATERPROOF WEATHER RESISTANT BARRIER (WRB) MUST BE APPLIED TO THE TOP OF THE PANELS AND DOWN THE EXTERIOR FACE. THE WRB MUST BE ATTACHED USING TEMPORARY MEANS TO THE SHEATHING AND INTERIOR AIR BARRIER (I.E. STAPLES). IT IS CRUCIAL MOISTURE DOES NOT GET DOWN BETWEEN THE PANEL SEAMS. THIS SHOULD ALSO BE DONE AFTER EACH WORK DAY IF WEATHER IS WET AND/ OR DAMP.



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